The ‘Humanisation of Work’ Principle:

Applying Article 13 of the Working Time Directive

to Algorithmic Management

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D.Phil. Thesis

December 2025

Abstract

This thesis argues that the overlooked 'humanisation of work' principle in Article 13 of the Working Time Directive holds significant potential in addressing the growing phenomenon of algorithmically managed working time. The thesis begins by developing the concept of 'algorithmic time' by demonstrating how algorithms, not human managers, are increasingly being used to (i) set schedules ('dynamic scheduling'); (ii) set the pace of work ('algorithmic pace-rates'); (iii) distinguish rest time from working time ('contested time'); and (iv) allocate time based on performance ('temporal disciplining'). It then argues that, under the EU's existing framework, there is limited regulation of algorithmic time – except for the under-researched Article 13 WTD, which contains the 'general principle of adapting work to the worker'. With no interpretative Court of Justice ruling on the principle, this thesis develops its genealogy by tracing the principle's origins across EU and international instruments to highlight its longevity and roots in the 'humanisation of work' movement, which sought to prevent workers being treated as machines. Consolidating the historical materials, it argues that the humanisation principle requires *work organisation* be adapted to *human needs* (be it physical, psychosocial or worker specific) through worker input. The thesis then interrogates whether the long-standing principle can be characterised as a 'general principle' of EU law, as framed in Article 13. The final chapters examine how Article 13 could be applied in practice to three case studies, covering (i) temporal disciplining in platform work; (ii) algorithmic pace-rates and contested time in warehouse work; and (iii) dynamic scheduling in healthcare work. It argues that certain practices risk infringing the humanisation principle and examines the interpretation and implementation of *other* EU instruments when read in conjunction with the humanisation principle. In doing so, the thesis concretely demonstrates Article 13's potential in humanising the growing automation of working time.

Acknowledgements

This thesis is about making work soulful, meaningful and human. Without the following people, the last three years of work would not have come close to those things.

Thank you to my supervisors, Professors Anne Davies and Jeremias Adams-Prassl, for your unwavering patience, kindness, and brilliance. Despite all the research on internships, I've yet to find a better example of genuine mentorship.

To Judge Meron, little did I know that the scholarship would bring with it such richness. Thank you for sharing your warmth, wisdom and dedication to justice with me.

For the institutions that hosted me – Trinity College, University of Buenos Aires and the Max Planck Institute in Heidelberg – I am forever grateful.

To my wonderful friends – you know who you are – for making even the monotonous joyful. Mazzie, Tyler, Larry, Pittiful Bunch, Castle, Get Ooked, French Fury, Chickpea, SWCP, DJ Pau, Andrew the Dealer, and those who don't fall under the ease of a WhatsApp group name: thank you for your relentless humour and support.

Lastly, to Gim, Pads, Libs and Sam, my thesis is also about time. No matter what framework or model of time is used, I'll always be grateful to have spent it with you.

Table of Contents

Table of Abbreviations vi

Table of Cases vii

Table of Statutes and Other Instruments xvi

Table of Figures xxi

Introduction 1

Chapter 1. The Concept of Algorithmic Time 8

Introduction 8

Historical Development of Working Time 9

Algorithmic Time 12

Dynamic Scheduling 15

Algorithmic Pace-Rates 22

Contested Time 25

Temporal Disciplining 30

Conclusion 33

Chapter 2. Existing EU Regulation of Algorithmic Time 35

Introduction 35

Worker Status 37

Working Time Directive 39

Transparent and Predictable Working Conditions Directive 49

Framework Directive on Safety and Health 57

General Data Protection Regulation (GDPR) 64

Artificial Intelligence Act 73

Platform Work Directive 78

Conclusion 87

Chapter 3. Interpreting the Humanisation of Work Principle 88

Introduction 88

Part I: Social Context – The Humanisation of Work Movement 90

Part II: Legal Context – The Legislative History of the Humanisation of Work Principle 100

1920s - 50s: Human Relations vs. Scientific Management…………101
1960s and 1970s: Humanisation of Work Movement……………...105
1980s: Formalisation of Occupational Health and Safety…………...107
1990s - 2010s: Follow-on Iterations……………………………...115
2017 Onwards: Individual Adaptations……………………………..121
Part III: Interpretative Framework for the Humanisation Principle………....124
Scope of Application………………………………………………..125
Substantive Meaning of the Principle………………………………126
Nature of the Duty…………………………………………………..131
Application to Working Time………………………………………135
Conclusion……………………………………………………………………140

Chapter 4. Article 13 as a General Principle of EU Law………………………142
Introduction……………………………………………………………………142
Implications of Article 13 as a General Principle…………………………..143
Evidencing Article 13 as a General Principle………………………………148
(i) Traditional Route for Determining General Principles……..150
(ii) 'Specific Expression' Route for Determining General Principles……………………………………………...171
Conclusion……………………………………………………………………183

Chapter 5. Applying Article 13 to Temporal Disciplining in Platform Work……………………………………………………………………………185
Introduction……………………………………………………………………185
Case study of Temporal Disciplining in Platform Work…………………...186
Framing the Claim……………………………………………………………189
Merits of the Claim……………………………………………………………195
Infringement…………………………………………………………...196
Legitimate Aim………………………………………………………..205
Suitability……………………………………………………………...208
Necessity……………………………………………………………….211
Conclusion……………………………………………………………………..214

Chapter 6. Applying Article 13 to Algorithmic Pace-Rates and Contested Time in Warehouse Work……216
Introduction……216
Time in Amazon's Fulfilment Centres……218
Contested Time……220
Algorithmic Pace-Rates……222
Temporal Disciplining……225
Dynamic Scheduling……228
Applying Article 13 to Algorithmic Pace-Rates……231
Regulating Algorithmic Pace-Rates in the US……232
Regulating Algorithmic Pace-Rates in the EU……236
Interpreting the Compatibility of Algorithmic Pace-Rates with Article 13……238
Interpreting the Compatibility of Algorithmic Pace-Rates with the GDPR and the Humanisation Principle……253
Applying Article 13 to Contested Time……266
Time-off-task as Rest Time……268
Time-off-task as Working Time……272
Role of the Humanisation Principle……277
Conclusion……280

Chapter 7. Applying Article 13 to Dynamic Scheduling in Healthcare Work...282
Introduction ……282
Overview of Dynamic Scheduling in Healthcare Work……284
Worker Shift Preferences and Article 13……291
Infringement……292
Justification……296
Worker Shift Preferences and the Transparent and Predictable Working Conditions Directive……299
Worker Shift Preferences and the GDPR……311
To Conclude……322

Conclusion……325
Bibliography……329

Table of Abbreviations

AG	Advocate General
AI	Artificial Intelligence
CJEU	Court of Justice of the European Union
CNIL	Commission Nationale de l'Informatique et des Libertés (French Data Protection Authority)
GDPR	General Data Protection Regulation
HELP Committee	United States Senate Committee on Health, Education, Labour and Pensions
ICO	Information Commissioner's Office (UK)
ILC	International Labour Conference
ILO	International Labour Organisation
NHS	National Health Service
OSH	Occupational Health and Safety
TEU	Treaty on European Union
TFEU	Treaty on the Functioning of the European Union
VG	Verwaltungsgericht (German Administrative Court)
WTD	Working Time Directive

Table of Cases

ILO Administrative Tribunal

Judgment No. 1756 09.07.1998……………………………………………………..161

Judgment No 2972 29.10.2010…………………………………………………...161

Judgment No. 4427 07.07.2021…………………………………………………..161

Judgment No. 4554 06.07.2022…………………………………………………..161

Judgment No 4517 06.09.2022…………………………………………………...162

Judgment No. 4684 07.07.2023…………………………………………………..161

Judgment No. 4748 31.01.2024…………………………………………………..161

Court of Justice of the European Union

C-26/62 NV Algemene Transport- en Expeditie Onderneming van Gend & Loos v Netherlands Inland Revenue Administration [1963] ECLI:EU:C:1963:1.........144, 193

C-11/70 Internationale Handelsgesellschaft mbH v Einfuhr- und Vorratsstelle für Getreide und Futtermittel [1970] ECLI:EU:C:1970:114………………………149,152

C-4/73 J Nold, Kohlen- und Baustoffgroßhandlung v Commission of the European Communities [1974] ECLI:EU:C:1974:51..149

C-41/74 Yvonne van Duyn v Home Office [1974] ECLI:EU:C:1974:133…...144, 193

C-43/75 Gabrielle Defrenne v Société anonyme belge de navigation aérienne Sabena [1976] ECLI:EU:C:1976:56……………………………………….…..168, 170, 192

C-33/79 and 75/79 Richard Kuhner v Commission of the European Communities [1980] ECLI:EU:C:1980:139…………………………………………………….…161

C-154, 205, 206, 226 to 228, 263 and 264/78, 39, 31, 83 and 85/79 SpA Ferriera Valsabbia and others v Commission of the European Communities [1980] ECLI:EU:C:1980:81…………………………………………………………..149

C-96/80 JP Jenkins v Kingsgate (Clothing Productions) Ltd [1981] ECLI:EU:C:1981:80…………………………………………………………..207

C-152/84 M H Marshall v Southampton and South-West Hampshire Area Health Authority [1986] ECLI:EU:C:1986:84……………………………………………..144

C-170/84 Bilka - Kaufhaus GmbH v Karin Weber von Hartz [1986] ECLI:EU:C:1986:20……………………………………………..134, 207, 208, 296

C-66/85 Deborah Lawrie-Blum v Land Baden-Württemberg [1986] ECLI:EU:C:1986:284…………………………………………………………..38

C-201/85 Marthe Klensch and Others v Secrétaire d'État à l'Agriculture et à la Viticulture [1986] ECLI:EU:C:1986:439……………………………..278, 301, 306

C-46/87 Hoechst AG v Commission of the European Communities [1989] ECLI:EU:C:1989:337…………………………………………………….278

C-5/88 Wachauf v Bundesamt für Ernährung und Forstwirtschaft [1989] ECLI:EU:C:1989:321………………………………………………………….278

C-109/88 Handels- og Kontorfunktionærernes Forbund I Danmark v Dansk Arbejdsgiverforening, acting on behalf of Danfoss [1989] ECLI:EU:C:1989:383……………………………………………………194, 204

C-331/88 The Queen v Minister of Agriculture, Fisheries and Food and Secretary of State for Health, ex parte: Fedesa and others [1990] ECLI:EU:C:1990:391……………………………………………………133, 134

C-106/89 Marleasing SA v La Comercial Internacional de Alimentacion SA [1990] ECLI:EU:C:1990:395…………………………………………………144, 193, 239

C-6/90 and C-9/90 Andrea Francovich and others v Italian Republic [1991] ECLI:EU:C:1991:428………………………………………………………….144

C-91/92 Paola Faccini Dori v Recreb Srl [1994] ECLI:EU:C:1994:292…………..144

C-46/93 and C-48/93 Brasserie du Pêcheur SA v Bundesrepublik Deutschland and The Queen v Secretary of State for Transport, ex parte: Factortame Ltd [1996] ECLI:EU:C:1996:79…………………………………………………………..144

C-400/93 Specialarbejderforbundet i Danmark v Dansk Industri, formerly Industriens Arbejdsgivere, acting for Royal Copenhagen A/S I -1295 [1995] ECLI:EU:C:1995:155……………………………………………………204, 210

C-5/94 Queen v Ministry of Agriculture, Fisheries and Food, ex parte: Hedley Lomas (Ireland) Ltd [1996] ECLI:EU:C:1996:205……………………………………...144

C-13/94 P v S and Cornwall County Council [1996] ECLI:EU:C:1996:170………278

C-55/94 Reinhard Gebhard v Consiglio dell'Ordine degli Avvocati e Procuratori di Milano [1995] ECLI:EU:C:1995:41………………………………………………..134

C-84/94 United Kingdom of Great Britain and Northern Ireland v Council of the European Union [1996] ECLI:EU:C:1996:431…………..39, 61, 117, 118, 156, 158, 202, 295, 298

C-178/94 Erich Dillenkofer and others v Bundesrepublik Deutschland [1996] ECLI:EU:C:1996:375………………………………………………………….144

C-194/94 CIA Security International v Signalson [1996] ECLI:EU:C:1996:172...…145

C-226/97 Criminal proceedings against Johannes Martinus Lemmens [1998] ECLI:EU:C:1998:296……….……………………………………………………...145

C-236/98 Jämställdhetsombudsmannen v Örebro läns landsting [2000] ECLI:EU:C:2000:173……………………..…………………………………..204

C-303/98 SIMAP v Conselleria de Sanidad y Consumo de la Generalidad Valenciana [2000] ECLI:EU:C:2000:528……………………………………28, 43, 269, 273, 276

C-443/98 Unilever v Central Foods [2000] ECLI:EU:C:2000:496………………...145

C-173/99 The Queen v Secretary of State for Trade and Industry, ex parte BECTU [2001] ECLI:EU:C:2001:356…………………………………….……..46, 196, 206, 211

C-381/99 Susanna Brunnhofer v Bank der österreichischen Postsparkasse AG I - 4999 [2001] ECLI:EU:C:2001:358……………………………………..……..204, 207

C-49/00 Commission of the European Communities v Italian Republic [2001] ECLI:EU:C:2001:611…………………………………………………………..59

C-62/00 Marks & Spencer plc v Commissioners of Customs & Excise [2002] ECLI:EU:C:2002:435……………………………………………………………144

C-112/00 Eugen Schmidberger, Internationale Transporte und Planzüge v Republik Österreich [2003] ECLI:EU:C:2003:333…………………………………………...152

C-189/01 H Jippes v Minister van Landbouw, Natuurbeheer en Visserij [2001] ECLI:EU:C:2001:420..147,152,153,168,183

C-397/01 to C-403/01 Bernhard Pfeiffer and Others v Deutsches Rotes Kreuz [2004] ECLI:EU:C:2004:584……………………………………………………………273

C-441/01 Commission v Netherlands [2006] ECLI:EU:C:2006:238………………166

C-25/02 Katharina Rinke v Ärztekammer Hamburg [2003] ECLI:EU:C:2003:435……………………………………………………………147

C-151/02 Landeshauptstadt Kiel v Norbert Jaeger [2003] ECLI:EU:C:2003:437…………………………………28, 43, 194, 269, 273, 275, 276

C-313/02 Nicole Wippel v Peek & Cloppenburg GmbH & Co KG [2004] ECLI:EU:C:2004:607……………………………….………146, 196, 199, 202, 207

C-14/04 Dellas and Others v Premier ministre and Ministre des Affaires sociales [2005] ECLI:EU:C:2005:728………………………………………………………296, 273

C-131/04 and C-257/04 C D Robinson-Steele v R D Retail Services Ltd [2006] ECLI:EU:C:2006:177.……………………………………………...154, 194, 292

C-144/04 Werner Mangold v Rüdiger Helm [2005] ECLI:EU:C:2005:709………...4, 143, 149, 150, 162, 172, 173, 174, 179, 192, 193, 300

C-127/05 Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland [2007] ECLI:EU:C:2007:338………………………………58, 61, 110, 118, 146, 154, 158

C-142/05 Åklagaren v Percy Mickelsson & Joakim Roos [2009] ECLI:EU:C:2009:336……………………………………………………………208

C-437/05 Jan Vorel v Nemocnice Český Krumlov [2007] ECLI:EU:C:2007:23…………………………………………………………..269, 273

C-438/05 International Transport Workers' Federation and Finnish Seamen's Union v Viking Line ABP and OÜ Viking Line Eesti [2007] ECLI:EU:C:2007:772………134

C-555/07 Seda Kücükdeveci v Swedex GmbH & Co KG [2010] ECLI:EU:C:2010:21…………………………………4, 143, 150, 162, 170, 173, 175, 176, 179, 192, 193

C-101/08 Audiolux SA ea v Groupe Bruxelles Lambert SA (GBL) and Others and Bertelsmann AG and Others [2009] ECLI:EU:C:2009:626…………….150, 167, 168, 169, 171, 172, 173, 181, 182

C-486/08 Zentralbetriebsrat der Landeskrankenhäuser Tirols v Land Tirol [2010] ECLI:EU:C:2010:215..206, 207

C-277/08 Francisco Vicente Pereda v Madrid Movilidad SA [2009] ECLI:EU:C:2009:542...195, 203, 208

C-236/09 Association Belge des Consommateurs Test-Achats ASBL and Others v Conseil des ministers [2011] ECLI:EU:C:2011:100.......................................147, 162

C-282/10 Maribel Dominguez v Centre informatique du Centre Ouest Atlantique and Préfet de la région Centre [2012] ECLI:EU:C:2012:33……………………………194

C-335/11 and C-337/11 HK Danmark, acting on behalf of Jette Ring v Dansk almennyttigt Boligselskab [2013] ECLI:EU:C:2013:222……………48, 171, 194, 204

C-176/12 Association de médiation sociale v Union locale des syndicats CGT and Others [2014] ECLI:EU:C:2014:2...172, 173

C-83/14 "CHEZ Razpredelenie Bulgaria" AD v Komisia za zashtita ot diskriminatsia [2015] ECLI:EU:C:2015:480………………………………………………………208

C-87/14 Commission v Ireland [2015] ECLI:EU:C:2015:449……………………..269

C-266/14 CCOO v Tyco Integrated Security [2015 ECLI:EU:C:2015:578……………………………….45, 196, 269, 270, 271, 272, 275

C-441/14 Dansk Industri (DI), acting on behalf of Ajos A/S v Estate of Karsten Eigil Rasmussen [2016] ECLI:EU:C:2016:278……………………………….171, 172, 173

C-229/14 Ender Balkaya v Kiesel Abbruch- und Recycling Technik GmbH [2015] ECLI:EU:C:2015:455……………………………………………………………194

C-518/15 Ville de Nivelles v Rudy Matzak [2018] ECLI:EU:C:2018:82………………………………………28, 43, 52, 269, 275, 276

C-414/16 Vera Egenberger v Evangelisches Werk für Diakonie und Entwicklung eV [2018] ECLI:EU:C:2018:257…………………………172, 173, 174, 178, 179, 180

C-569/16 and C-570/16 Stadt Wuppertal v Maria Elisabeth Bauer and Volker Willmeroth v Martina Broßonn [2018] ECLI:EU:C:2018:871…………40, 170, 172, 173, 174, 175, 178, 179, 180, 192, 193, 197, 295

C-684/16 Max-Planck-Gesellschaft zur Förderung der Wissenschaften eV v Tetsuji Shimizu [2018] ECLI:EU:C:2018:874……………………………..192, 197, 203, 213

C-193/17 Cresco Investigation GmbH v Markus Achatzi [2019] ECLI:EU:C:2019:43…………………………………………………..172, 173, 174

C-55/18 CCOO v Deutsche Bank SAE [2019] ECLI:EU:C:2019:402.............171, 174, 175, 193, 196, 273, 277, 279

C-344/19 DJ v Radiotelevizija Slovenija [2021] ECLI:EU:C:2021:182……………45, 59, 203, 268, 269, 270, 273, 274, 275, 276, 395

C-580/19 RJ v Stadt Offenbach am Main [2021] ECLI:EU:C:2021:183…………269, 272, 274, 275

C-585/19 Academia de Studii Economice din Bucureşti v Organismul Intermediar pentru Programul Operaţional Capital Uman - Ministerul Educaţiei Naţionale [2021] ECLI:EU:C:2021:210..40, 171, 174, 175, 177, 180, 182, 183, 193, 194, 196, 197, 272, 277, 292

C-624/19 K and Others v Tesco Stores Ltd [2021] ECLI:EU:C:2021:429………...170

C-692/19 B v Yodel Delivery Network [2020] ECLI:EU:C:2020:288………....82,194

C-909/19 BX v Unitatea Administrativ Teritorială D [2021] ECLI:EU:C:2021:89……………………………..45, 49, 194, 269, 273, 277, 279, 292

C-214/20 MG v Dublin City Council [2021] ECLI:EU:C:2021:909………269, 270, 276

C-660/20 MK v Lufthansa CityLine GmbH [2023] ECLI:EU:C:2023:789……170, 206, 209

C-715/20 KL v X sp z oo [2024] ECLI:EU:C:2024:139………………...149, 156, 176

C-34/21 Hauptpersonalrat der Lehrerinnen und Lehrer v Minister des Hessischen Kultusministeriums [2023] ECLI:EU:C:2023:270………………………………254

C-252/21 Meta Platforms Inc and Others v Bundeskartellamt [2023] ECLI:EU:C:2023:537……………………………………………………………255

C-257/21 and C-258/21 Coca-Cola European Partners Deutschland GmbH v LB and RG [2022] ECLI:EU:C:2022:529………………………………………………..117

C-634/21 OQ v Land Hessen, intervener SCHUFA Holding [2023] ECLI:EU:C:2023:957………………………………………..67, 312, 313, 314, 315

C-621/22 Koninklijke Nederlandse Lawn Tennisbond v Autoriteit Persoonsgegevens [2024] ECLI:EU:C:2024:858…………………………………………………245, 296

C-792/22 Criminal proceedings against MG [2024] ECLI:EU:C:2024:788……….177

C-806/24 YETTEL BULGARIA EAD v FB (pending)……………………………..75

C-159/25 B.Ż, V. sp. z o.o. v T. SA, Ł.W. (pending)………………………………..75

General Court of the European Union

T-123/89 Chomel v Commission [1990] ECLI:EU:T:1990:24…………………….161

T-33/89 and T-74/89 Blackman v Parliament [1993] ECLI:EU:T:1993:21………..161

T-93/94 Michael Becker v Court of Auditors of the European Communities [1996] ECLI:EU:T:1996:30………………………………………………………..161, 254

T-65/92 Arauxo-Dumay v Commission [1993] ECLI:EU:T:1993:47……………..161

Advocate General Opinions of the European Union

C-308/87 Alfredo Grifoni v European Atomic Energy Community [1989] ECLI:EU:C:1989:624 Opinion of AG Tesauro……………………………………153

C-84/94 United Kingdom of Great Britain and Northern Ireland v Council of the European Union [1996] ECLI:EU:C:1996:431, Opinion of AG Léger………...118, 158, 202 298

C-173/99 The Queen v Secretary of State for Trade and Industry, ex parte BECTU [2001] ECLI:EU:C:2001:81 Opinion of AG Tizzano……………………................56

C-313/02 Nicole Wippel v Peek & Cloppenburg GmbH & Co KG [2004] ECLI:EU:C:2004:308, Opinion of AG Kokott…………………………..199, 203, 207

C-127/05 Commission v United Kingdom of Great Britain and Northern Ireland [2007] ECLI:EU:C:2007:72, Opinion of AG Mengozzi………………110, 154, 158

C-555/07 Seda Kücükdeveci v Swedex GmbH & Co KG [2010] ECLI:EU:C:2009:429, Opinion of AG Bot……………………………………...176

C-282/10 Maribel Dominguez v Centre informatique du Centre Ouest Atlantique and Préfet de la région Centre [2012] ECLI:EU:C:2011:559, Opinion of AG Trstenjak………………………………………..114, 145, 148, 194, 150, 151, 152, 172, 174, 176, 178, 183, 192

C-266/14 CCOO v Tyco Integrated Security [2015] ECLI:EU:C:2015:578, Opinion of AG Bot……………………………………………………………....271, 272, 275

C-518/15 Ville de Nivelles v Rudy Matzak [2018] ECLI:EU:C:2017:619, Opinion of AG Sharpston……………………………………………………………….……275

C-214/16 Conley King v The Sash Window Workshop Ltd and Richard Dollar [2016] ECLI:EU:C:2017:439 Opinion of AG Tanchev……………………………………182

C-684/16 Max-Planck-Gesellschaft zur Förderung der Wissenschaften eV v Tetsuji Shimizu [2018] ECLI:EU:C:2018:338, Opinion of AG Bot…………61, 271, 272, 275

C-344/19 D J v Radiotelevizija Slovenija [2021] ECLI:EU:C:2020:796, Opinion of AG Pitruzzella……………………………………………….……269, 272, 275, 276

C-580/19 RJ v Stadt Offenbach am Main [2020] ECLI:EU:C:2020:797, Opinion of AG Pitruzzella………………………………………………...………269, 272, 275

C-585/19 Academia de Studii Economice din Bucureşti v Organismul Intermediar pentru Programul Operaţional Capital Uman - Ministerul Educaţiei Naţionale [2020] ECLI:EU:C:2020:899, Opinion of AG Pitruzzella..175, 197

C-715/20 KL v X sp z oo [2023] ECLI:EU:C:2023:281, Opinion of AG Pitruzzella………………………………………………………………………..149

C-634/21 OQ v Land Hessen, intervener SCHUFA Holding [2023] ECLI:EU:C:2023:220, Opinion of AG Pikamäe………………………………...313

C-249/24 RT, ED v Ineo Infracom [2025] ECLI:EU:C:2025:202, Opinion of AG Norkus…………………………………………………………………………..49

European Court of Human Rights

Barbulescu v Romania App no 61496/08 (ECtHR, 5 September 2017)…………...164

Bucur and Toma v Romania App no 40238/02 (ECtHR, 8 January 2013)..…..…...164

Copland v United Kingdom App no 62617/00 (ECtHR, 3 April 2007)…..………...164

Dahlab v Switzerland App no 42393/98 (ECtHR, 15 February 2001)…...………...164

DMT and DKI v Bulgaria App no. 29476/06 and 29486/06 (ECtHR, 24 July 2012)………………………………………………………………………..164

Dolopoulos v Greece App no 36656/14 (ECtHR, 10 July 2015). ………………....155

Eweida and Others v United Kingdom App no. 48420/10, 59842/10, 51671/10, and 36516/10 (ECtHR, 15 January 2013) ……………………………………………...164

Gillberg v Sweden App no 41723/06 (ECtHR, 3 April 2012)….………...………...164

Guja v Moldova App no 14277/04 (ECtHR, 12 February 2008)………...……….....164

Heinisch v Germany App no 28274/08 (ECtHR, 21 July 2011) …………...……......164

Konstantin Markin v Russia App no. 30078/06 (ECtHR, 22 March 2012)……..…..163

Larissis and Others v Greece App no 23372/94, 26377/94, and 26378/94 (ECtHR, 24 February 1998)……………………………………………………………..…….164

Libert v France App no 588/13 (ECtHR, 22 February 2018)………………....……..164

National Union of Belgian Police v Belgium App no 4464/70 (ECtHR 27 October 1975)………………………………………………………………………..165

Obst v Germany App no 425/03 (ECtHR, 23 September 2010)……………...……164

Wilson, National Union of Journalists and Others v United Kingdom App no 15573/89 (ECtHR, 2 July 2002)…………………………………………………165

National Cases

Commission Nationale de l'Informatique et des Libertés (CNIL), Délibération de la formation restreinte n°SAN-2023-021 du 27 décembre 2023 concernant la société AMAZON FRANCE LOGISTIQUE (France)…………………….217, 220, 221, 245, 246, 249, 254, 255, 256, 257, 258, 259, 260, 261

Filcams CGIL Bologna, NIDIL CGIL Bologna and FILT CGIL Bologna v Deliveroo Italia S.R.L (December 21 2021) Tribunale Ordinario di Bologna, Sezione Lavoro, N. R.G. 2949/2019 (Italy)…………………………………………………………...201

People's Union for Democratic Rights v. Union of India, AIR 1982 SC 1473 (India)……………………………………………………………………….…157

Sayers v Cambridgeshire County Council [2007] IRLR 29 (UK)…….……………144

Uber BV and others v Aslam and others [2021] UKSC 5 [2018] EWCA Civ 2748 (UK)……………………………………………………………………….……41

VG Hannover, Urt v 09.02.2023, 10 A 6199/20, NZA-RR 2023, 264 (Germany)……………………………………………………217, 218, 220, 223, 245, 246, 247, 249, 251,252, 254, 255, 258, 262, 263, 265

Table of Statutes and other Instruments

ILO Instruments

Conventions and Recommendations

Occupational Health Services Recommendation No. 112 (1959)……………100, 101, 102, 103, 104, 112, 122, 128, 129, 152

Maternity Protection Convention (Revised) No. 103 (1952)…………………..….163

Hygiene (Commerce and Offices) Recommendation No.120 (1964)………..100, 106, 128, 129, 151, 234

Occupational Safety and Health Convention No.155 (1981)……………….2, 60, 100, 110, 11, 111, 125, 128, 129, 133, 135, 151

Workers with Family Responsibilities Convention No. 156 (1981)……………….163

Occupational Health Services Convention No. 161 (1985)…………….100, 110, 112, 113, 114, 128, 129, 132, 151

Occupational Health Services Recommendation No. 171 (1985)…………98, 99, 100, 110, 112, 113, 114, 1

Night Work Convention No.171 (1990)………………………………………100, 151

Safety and Health in Agriculture Recommendation No. 192 (2001)………..100, 120, 129, 151

Resolutions and Declarations

Resolution Concerning the Working Environment (ILC 59th Session, 1974)…..92, 99

Resolution Concerning Future Action of the International Labour Organisation in the Field of Working Conditions and Environment (24 June 1975)…………………….…..98

Resolution on Working Conditions and Environment (ILC 61st Session, 21 June 1976)………………………………………………………………………93, 132

Declaration on Fundamental Principles and Rights at Work and its Follow-up (ILC 86th Session 1998, amended at ILC 110th Session 2022)……………………..…..112, 155

EU Instruments

Directives

Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work [1989] OJ L183/1……………………………………...….36, 57- 64, 76, 108, 118, 125, 181

Directive 90/270/EEC of 29 May 1990 on the minimum safety and health requirements for work with display screen equipment [1990] OJ L156/14……………………………………..…60, 99, 100, 118, 119, 129, 133, 152

Directive 91/533/EEC of 14 October 1991 on an employer's obligation to inform employees of the conditions applicable to the contract or employment relationship [1991] OJ L288/32…………………………………………………………….…..49

Directive 92/85/EEC of 19 October 1992 on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding [1992] OJ L348…………………….…..163

Directive 93/104/EC of 23 November 1993 concerning certain aspects of the organization of working time [1993] OJ L 307/18…………………………...…….116

Directive 94/33/EC of 22 June 1994 on the protection of young people at work [1994] OJ L 216…………………………………………………………..101, 119, 150, 155

Directive 94/45/EC on the establishment of a European Works Council or a procedure in Community-scale undertakings and Community-scale groups of undertakings for the purposes of informing and consulting employees [1994] OJ L254………………….165

Directive 98/59/EC on the approximation of the laws of the Member States relating to collective redundancies [1998] OJ L225……………………………………..…..165

Directive 1999/70/EC of 28 June 1999 concerning the framework agreement on fixed-term work [1999] OJ L175/43……………………………………………176, 177, 308

Directive 97/81/EC of 15 December 1997 concerning the framework agreement on part-time work [1998] OJ L 14/9…………………………………………...….190

Directive 2000/43/EC of 29 June 2000 implementing the principle of equal treatment between persons irrespective of racial or ethnic origin [2000] OJ L180…………..162

Directive 2000/78/EC of 27 November 2000 establishing a general framework for equal treatment in employment and occupation [2000] OJ L303/16…………………………..…….36, 48, 133, 162, 163, 173, 236, 237, 243, 244

Directive 2000/79/EC of 27 November 2000 concerning the European Agreement on the Organisation of Working Time of Mobile Workers in Civil Aviation [2000] OJ L 302……………………………………………………...…………101, 118, 152, 269

Directive 2001/23/EC of 12 March 2001 on the approximation of the laws of the Member States relating to the safeguarding of employees' rights in the event of transfers of undertakings, businesses or parts of undertakings or businesses [2001] OJ L82……………………………………………………….……………………165

Directive 2001/86/EC supplementing the Statute for a European company with regard to the involvement of employees [2001] OJ L294…………………………………..165

Directive 2002/14/EC establishing a general framework for informing and consulting employees in the European Community [2002] OJ L80/29………………..……….165

Directive 2003/88/EC of 4 November 2003 concerning certain aspects of the organisation of working time [2003] OJ L299/9…………………………….…..*passim*

Directive 2006/54/EC of the European Parliament and of the Council of 5 July 2006 on the implementation of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation (recast) [2006] OJ L204………………………………………………………………….………..162, 190

Directive 2014/112/EU of 19 December 2014 implementing the European Agreement concerning certain aspects of the organisation of working time in inland waterway transport [2014] OJ L367/86…………………………………..…..101, 118, 133, 152

Directive (EU) 2019/1152 of 20 June 2019 on transparent and predictable working conditions in the European Union [2019] OJ L186/105…………………………*passim*

Directive (EU) 2019/1158 of 20 June 2019 on work-life balance for parents and carers [2019] OJ L188/79……………………………………………………….…….163, 302

Directive 2022/2041 of the European Parliament and of the Council of 19 October 2022 on adequate minimum wages in the European Union [2022] OJ L275……..…..81, 146

Directive 2023/970 of 10 May 2023 to strengthen the application of the principle of equal pay for equal work or work of equal value between men and women through pay transparency and enforcement mechanisms [2023] OJ L132……………………..……146

Directive (EU) 2024/2831 of 23 October 2024 on improving working conditions in platform work [2024] OJ L2024/2831…………………..…36, 37, 78- 86, 190, 203, 204

Other EU instruments

Council Resolution of 21 January 1974 concerning social action programme [1974] OJ C13/1…………………………………………………………………..………105, 234

Council Resolution of 29 June 1978 on an action programme of the European Communities on safety and health at work [1978] OJ C165/1………………...….93, 98

European Parliament Legislative Resolution Embodying the Opinion of the European Parliament on the Proposal for a Directive on the Introduction of Measures to Encourage Improvements in the Safety and Health of Workers at the Workplace [1988] OJ C 326/78…………………………………………………………………………109

Community Charter of Fundamental Social Rights of Workers [1989] No. 9430/2/89 REV 2 SOC 370…………………………………………………..

Consolidated Version of the Treaty on European Union [2008] OJ C115/13……………………………………………………………….….149, 152, 162

Consolidated Version of The Treaty on the Functioning of the European Union [2012] OJ C326/47……………...35, 45, 50, 56, 77, 144, 154, 162, 165, 170, 191, 194

Charter of Fundamental Rights of the European Union [2016] OJ C202/02……..*passim*

Regulation 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data [2016] OJ L 119/1……………………………………………………………………….….*passim*

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European Parliament Resolution of 5 July 2022 on Mental Health in the Digital World of Work (2021/2098(INI)………………………………………...……123

Regulation (EU) 2024/1689 of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) [2024] OJ L2024/1689………………3, 73- 78

Other International or European Instruments

Universal Declaration of Human Rights (adopted 10 December 1948 UNGA Res 217 A(III))…………………………………… ………154, 156, 158, 159, 164, 165, 168

European Convention for the Protection of Human Rights and Fundamental Freedoms (1950) Rome 4.XI……………………………….………149, 155, 162, 163, 164, 165

International Covenant on Economic, Social and Cultural Rights (adopted 16 December 1966, entered into force 3 January 1976) 999 UNTS 3)…………….154, 156, 158, 159, 163

International Covenant on Civil and Political Rights (adopted 16 December 1966, entered into force 23 March 1976) 999 UNTS 171)…………..……..…156, 157, 164

European Social Charter (Revised) (1996) ETS No. 163……….155, 156, 157, 158, 160, 163, 164, 165

United Nations Convention on the Rights of Persons with Disabilities (adopted 13 December 2006 UNGA Res A/RES/61/106)……………………………………….163

European Social Partners' Autonomous Framework Agreement on Active Ageing and an Inter-Generational Approach [8 March 2017]…………………………….……….122

National Instruments

LOI n° 46-2195 du 11 octobre 1946 relative à l'organisation des services médicaux du travail (France)……………………………………………………………….……..102

Arbeitszeitgesetz 1994 (Germany)…………………………………….……137, 191

Betriebsverfassungsgesetz 2001 (Germany)…………………………………….….137

Real Decreto Legislativo 2/2015 Estatuto de los Trabajadores (Spain)……………..191

Warehouse Quotas Law (AB 701 22 September 2021) (California, US)………..….231

S.I. No. 686/2022 - European Union (Transparent and Predictable Working Conditions) Regulations 2022 (Ireland)………………………………………….305

Warehouse Worker Protection Act (2021-S8922A 27 May 2022) (New York, US)……………………………………………………….…….227, 229, 230, 231

Warehouse Worker Protection Act (SF3035 28 April 2023) (Minnesota, US)…...…231

Warehouse Quotas Law (RCW 49.84.020 24 February 2024) (Washington, US)…..231

Proposed Federal Warehouse Worker Protection Bill (S.5208 118th Congress 25 September 2024) (US)…………………………………………………...…231, 233

Warehouse Worker Protection Act (HB 4127 1 January 2025) (Oregon, US)…...…231

Table of Figures

Figure 1 (Amazon Takt Times)……………………………………………………….223

Figure 2 (Amazon Workstation Times) ……………………………………………224

Figure 3 (Amazon A to Z App) ……………………………………………………227

Figure 4 (Amazon WorkWell Video) ………………………………………………...250

Introduction

Article 13 of the EU Working Time Directive (WTD) states that, if an employer intends to organise work according to a certain pattern, they must take account of the 'general principle of adapting work to the worker'.[1]

Responses to this principle range from it being 'impractical'[2] to 'potentially revolutionary'.[3] It is often referenced fleetingly in footnotes or side remarks as an intriguing yet ultimately underdeveloped provision.[4] With no interpretative Court of Justice decision of the principle,[5] and limited academic analysis of it,[6] Article 13 could have been left to obscurity.

However, with the rise of 'algorithmic time' – where algorithms are increasingly making decisions about when, at what pace, and how long people work – Article 13 gains significance as one of the main provisions at an EU level which could

[1] Directive 2003/88/EC of 4 November 2003 concerning certain aspects of the organisation of working time [2003] OJ L299/9, Article 13.

[2] As labelled by Pakistan in ILO, 'Report VII (a)(2) Safety and Health and the Working Environment: 66th Session' (International Labour Conference, 1980), 27.

[3] Brian Bercusson, *European Labour Law* (Butterworths 1996) 332.

[4] See, for example, ACL Davies, *Employment Law* (Pearson 2015) 276 – 278; Mark Bell, 'Adapting Work to the Worker: The Evolving EU Legal Framework on Accommodating Worker Diversity' (2018) 18 International Journal of Discrimination and the Law 124, 129; Jeffrey Kenner, 'Regulating Working Time – Beyond Subordination' in Stephen Weatherill (ed), *Better Regulation* (Hart Publishing 2007) 201; Gábor Kártyás, 'Less Human but More Effective?' (2024) Pázmány Law Review 67, 76; Catherine Barnard, *EU Employment Law* (OUP 2012) 555 – 556; Antonio Aloisi, 'Integrating the EU Twin (Green and Digital) Transition Synergies, Tensions and Pathways for the Future of Work' (JRC Working Papers 2025) 28.

[5] Article 13 has so far been mentioned in passing by two Court of Justice decisions and one Advocate General Opinion, discussed in Chapter 3.

[6] The three academics behind the development of the principle are: Bercusson (n 3); Alain Supiot, *Beyond Employment: Changes in Work and the Future of Labour Law in Europe* (OUP 2001) 85 - 92; and Alan Bogg, 'Of Holidays, Work and Humanisation: A Missed Opportunity?' (2009) 34 European Law Review 738; Bogg A and Ford M, 'Article 31' in Steve Peers and others (eds), *The EU Charter of Fundamental Rights: A Commentary* (Hart Publishing 2021); Alan Bogg, 'Escaping Labor Law's Matrix: Governance by Numbers: The Making of a Legal Model of Allegiance Book Review' (2019) 40 Comparative Labor Law & Policy Journal 477.

regulate this growing phenomenon. Understanding what this principle means has become of heightened importance.

This thesis thus set out with the aim of developing a theoretical framework for ‘algorithmic time’ and determining how Article 13 WTD could be used to regulate some of the potential harms. Along the way, however, the implications of this thesis expanded. Multiple iterations of the principle were found in various international and EU instruments, including in the ‘fundamental’ Convention 155 of the International Labour Organisation[7] and high-profile European Pillar of Social Rights.[8] On investigating the principle’s origins, it became clear that the principle was the catchphrase of the influential ‘humanisation of work’ movement, which began at the turn of the 20th century and arose in opposition to scientific management, factory line work, and worker discontent. Whilst Article 13 had been labelled as the ‘humanisation of work’ principle previously,[9] its relationship with the movement had not been evidenced. Of particular interest was the discovery of the close synergies between the historical movement and discussions of today. Former fears that workers were ‘treated as a mere cog’ in the machine[10] mirror current concerns that new technology is ‘treating workers like cogs in a machine’.[11] These modern calls for a ‘human-centred’ approach

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[7] ILO Occupational Safety and Health Convention No.155 (1981), Article 5(b), which was elevated in 2022 as a ‘fundamental’ Convention, meaning that ILO Members, by virtue of their membership, undertake to work towards the Convention’s objectives even if they have not ratified it (discussed in Chapter 3).

[8] Interinstitutional Proclamation on the European Pillar of Social Rights [2017] C 428/09, Principle 10(b).

[9] Bercusson (n 3).

[10] ILO Director-General ‘Technology for Freedom: Man in His Environment’ (International Labour Office 1972) 24.

[11] Quote from United States Senator Hawley, see ‘Bipartisan Momentum Builds for Warehouse Worker Protection Act’ (Press Release, 25 September 2024) <https://www.markey.senate.gov/news/press-releases/bipartisan-momentum-builds-for-warehouse-worker-protection-act> accessed 25 April 2025.

to technology at work[12] make the revival of the humanisation principle particularly pertinent. Lastly, the longevity and prevalence of the principle gave rise to the possibility that its framing in Article 13 as a 'general principle' was not simply a turn of phrase, but potentially indicated its status as a more profound general principle of EU law. It thus turned out that Article 13 WTD held far more than first appeared.

This thesis ultimately still addressed its original aims – it harnesses the historical legacy of Article 13 WTD to illustrate how it could be applied to the phenomenon of algorithmic time – but with a much broader remit than initially anticipated. Rather than being 'impractical', this thesis firmly sides with the view that the principle offers 'revolutionary' potential in how time is regulated.

The structure of this thesis is divided into three parts. The first part sets the scene. Chapter 1 outlines how algorithmic management is disrupting the standard '9-to-5' model of time and identifies the four main types of 'algorithmic time'. It describes how algorithms are increasingly being used to (i) set schedules ('dynamic scheduling'); (ii) set the pace of work ('algorithmic pace-rates'); (iii) distinguish rest time from working time ('contested time'); and (iv) discipline workers using their free time ('temporal disciplining'). Chapter 2 then analyses the difficulties in regulating algorithmic time under the existing patchwork of EU-level regulation. Six EU instruments are examined, and three overarching critiques are made of the existing regime: its (i) implicit reliance on standard employee working time norms, (ii) use of procedural regulation without substantive standards, and the (iii) limitations of risk

[12] See the ILO Centenary Declaration for the Future of Work (108th ILC Session, 2019). The recent Artificial Intelligence Act also calls for 'human-centric' technology: Regulation (EU) 2024/1689 of 13 June 2024 laying down harmonised rules on artificial intelligence [2024] OJ L2024/1689, recital 6.

assessments in the context of working time. Against this background, it highlights how Article 13 stands out as the key provisions available for addressing algorithmic time.

The second part then develops Article 13's potential. Chapter 3 outlines the precise scope, substance, and nature of the humanisation principle contained in Article 13 by drawing on a century of drafting material to construct its historical genealogy. It evidences the principle's ties to the humanisation of work movement and argues that it requires work organisation to be adapted to human needs (physical, psychosocial and specific) through worker participation. Chapter 4 then argues that Article 13 can be regarded as containing a 'general principle' of EU law, either on its own accord or as a specific expression of dignity at work, following the *Mangold*[13]*-Kücükdeveci*[14] line of cases.

The last part of the thesis brings the previous analysis together by testing Article 13's capacity to regulate the four types of algorithmic time. Chapter 5 argues that the use of temporal disciplining in platform work, illustrated through a case study of employees at Foodora (a food delivery platform) in Germany, may contravene Article 13. Chapter 6 then examines contested time and algorithmic pace-rates in warehouse work, focusing specifically on working time at Amazon (the international logistics company). It discusses a potential 'rebirth' of the humanisation movement in the United States and compares this to the revival of Article 13 in the EU context. It examines whether algorithmic pace-rates are compatible with Article 13 and speculates as to

[13] Case C-144/04 *Werner Mangold v Rüdiger Helm* [2005] ECLI:EU:C:2005:709.

[14] Case C-555/07 *Seda Kücükdeveci v Swedex GmbH & Co KG* [2010] ECLI:EU:C:2010:21.

whether existing national decisions on algorithmic pace-rates and the GDPR[15] could have been reformulated in light of the humanisation principle. It also examines how Article 13 may inform litigation on contested time at Amazon. Chapter 7 lastly examines the use of dynamic scheduling in healthcare and argues the widespread inclusion of worker preferences into algorithmic scheduling software demonstrates compatibility with the humanisation principle. It goes on to examines how interpretation of the GDPR and implementation of the Transparent and Predictable Working Conditions Directive[16] may be shaped by the humanisation principle, so as to require the incorporation of worker preferences in algorithmic scheduling software.

Throughout the thesis, a mix of methods are used. Chapter 1 develops a descriptive theoretical framework of algorithmic time by synthesising a range of qualitative, quantitative and review studies into four overarching phenomena, whilst Chapter 2 uses doctrinal analysis to highlight the limitations of the existing regulation.[17] Chapter 3 conducts historical legal research into the drafting materials behind Article 13 WTD, followed by derivative legal reasoning to deduce the meaning of Article 13 based on the materials reviewed. The approach of this chapter is to provide a descriptive-analytical account of Article 13, rather than a normative account of what

[15] Regulation (EU) 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data [2016] OJ L119/1.

[16] Directive (EU) 2019/1152 of 20 June 2019 on transparent and predictable working conditions in the European Union [2019] OJ L186/105.

[17] 'Doctrinal analysis' is a broad concept covering a range of methods (Jason Varuhas, 'Mapping Doctrinal Methods' in Paul Daly and Joe Tomlinson (eds), *Researching Public Law in Common Law Systems* (Edward Elgar 2022), which may require adaptation to the labour law context (Alan Bogg, 'Doctrinal Method in Labour Law in Common Law Systems: Potential, Problems, Prospects' in Alysia Blackham and Sean Cooney (eds) *Research Methods in Labour Law* (Edward Elgar 2024). Chapter 2 may be best characterised as adopting critical doctrinal analysis because it is aimed at highlighting not only what the law is, but what its limitations are. This thesis refers to 'applied' doctrinal analysis where, following descriptive-derivative analysis of what the law *is*, it then applies the law to a speculative question (eg., is Article 13 a general principle of EU law?).

the principle *should* be. The subsequent Chapters 4, 5, 6, and 7 use applied doctrinal analysis to explore how the law might be interpreted in certain scenarios.

Inevitably, there are aspects which fall outside the scope of this thesis. The focus of enquiry is on Article 13 WTD, rather than the 'humanisation of work' principle at large. This is because the original literature on the humanisation of work principle, which inspired this thesis,[18] relates to Article 13. It is therefore a study of EU labour law, not international labour standards or the humanisation movement itself. Secondly, this thesis relies upon algorithmic time as catalyst for examining Article 13 WTD, rather than examining how algorithmic time should be regulated *per se*. It may be that there are preferable regulatory proposals to Article 13: what exists at the moment, however, is Article 13 and the thesis makes the case for considering this as the regulatory tool already available. Lastly, this thesis does not investigate how Article 13 WTD has been transposed at a national level, despite Article 13 being addressed to Member States.[19] The reasoning for this is that, in determining the meaning of Article 13, it would be methodologically reflective to rely on transpositions of the principle to deduce its meaning. Rather, it is preferable to identify the meaning of Article 13 first, which this thesis does, in order to then decipher whether national implementation of the provision adequately reflects that meaning.[20] How the EU might wish to respond should national transpositions not reflect Article 13's intended meaning, either by way of negative or positive harmonisation, falls outside the scope of this thesis.

[18] See footnote 6.

[19] Article 13 states that 'Member States shall take the measures necessary to ensure that …' employers take account of the humanisation principle.

[20] The exception to this, however, is where Article 13 has been inspired by earlier instruments from Member States. In these instances, this has been included within Chapter 3's examination of the humanisation principle's origins.

Ultimately, the contribution of this thesis is threefold. First, it provides a theoretical framework for the use of algorithmic time which has so far received scarce scholarly attention.[21] In doing so, it enables the phenomenon to be discussed and subsequently addressed. Second, the thesis settles the ongoing speculation over the meaning of the 'somewhat amorphous'[22] principle in Article 13 WTD. By providing the first historical account of the principle and an interpretative framework, it significantly advances the existing field. Lastly, the thesis gives practical direction as to how Article 13 could be relied upon in jurisprudence. As argued by Bogg over a decade ago, 'it is vital that the humanisation principle be utilised by the Court of Justice… only then will European regulation of working time truly come of age.'[23] This thesis responds to this call by laying out the possibilities for achieving this when, in an age of automation, the need for the humanisation of work is even more pronounced.

[21] The only authority so far appears to be Agnieszka Piasna, 'Algorithms of Time: How Algorithmic Management Changes the Temporalities of Work and Prospects for Working Time Reduction' (2023) 48 Cambridge Journal of Economics 115.

[22] Kenner (n 4) 201.

[23] Bogg (n 6 (2009)) 753.

Chapter 1

The Concept of Algorithmic Time

Introduction

Working time has been a key battleground between workers and employers in Europe, from the factory strikes in the 1800s to the codification of the 48-hour week. Second only perhaps to wages, working time is the working condition which has the 'most direct impact on the day-to-day lives of workers'.[1]

These hard-fought-for working time norms, however, are increasingly being challenged by the use of algorithmic software. Algorithms, not human managers, are starting to make decisions which dictate the pace, duration, and distribution of time inside and outside of work.

The purpose of this chapter is to introduce this rising concept of 'algorithmic time', which will then provide the catalyst for examining the regulatory potential of Article 13 Working Time Directive (WTD) in subsequent chapters.

Structured in two parts, this chapter first provides the historical context behind the advent of algorithmic time. It then develops a theoretical framework of algorithmic time, identifying four separate phenomena and the potential harms attached. These are the use of algorithmic software to (i) set schedules ('dynamic scheduling'); (ii) set the pace of work ('algorithmic pace-rates'); (iii) distinguish rest time from working time

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[1] ILO, 'General Survey Concerning Working-Time Instruments: Ensuring Decent Working Time for the Future' (International Labour Office 2018) 2.

(‘contested time’); and (iv) allocate time based on performance (‘temporal disciplining’).

The overall conclusion is that the growing use of algorithmic time risks ‘dehumanising’ traditional notions of working time, thus calling for a regulatory counterforce.

Historical Development of Working Time

Working time – the period where a worker is subordinate to the employer[2] – is a commonplace concept. However, this has not always been the case. This section briefly outlines Europe’s relationship with working time in order to lay the foundations for understanding the changes that algorithmic time brings.

Twentieth century Europe has been dominated by what is generally referred to as the ‘standard’ model of working time.[3] This model denotes the familiar ‘9-to-5’ regime, synonymous with a stable, permanent employment relationship. Shaped by industrial capitalism and the Fordist era, which was characterised by mass production and homogenous working conditions, the standard model of working time made a clear demarcation between time spent working (‘working time’) and time spent resting (‘rest time’).[4]

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[2] As defined in Tammy Katsabian, ‘It’s the End of Working Time as We Know It: New Challenges to the Concept of Working Time in the Digital Reality’ (2020) 65 McGill Law Journal 379, 385.

[3] Referred to as the ‘standard work week’ in ILO, ‘Working Time and Work-Life Balance Around the World’ (International Labour Office 2022), 51; see also Alain Supiot, *Beyond Employment: Changes in Work and the Future of Labour Law in Europe* (OUP 2001) 63; and Jill Rubery and others, ‘Working Time, Industrial Relations and the Employment Relationship’ (2005) 14 Time & Society, 91.

[4] Multiple academics highlight the impact of Taylorism and Fordism on the standard model of working time: Agnieszka Piasna, ‘Algorithms of Time: How Algorithmic Management Changes the Temporalities of Work and Prospects for Working Time Reduction’ (2023) 48 Cambridge Journal of Economics 115; Supiot (n 3); Guylaine Vallée and Dalia Gesualdi-Fecteau, ‘Setting

The 9-to-5 came as a result of previous incremental pushes towards shorter working hours throughout the 1800s, notably in factory work.[5] The combination of legislation, labour movements and employer practices reduced working hours down initially for children, then adults.[6] By the early 20th century, the International Labour Organisation started setting international standards on working time limits, with the weekend, eight-hour day and 48-hour week becoming cornerstone labour rights by the 1950s.[7]

To a certain extent, however, the word 'standard' is misleading. It implies that it is a default norm, whereas in the scheme of working time history, the 9-to-5 may better be regarded as abnormality. Prior to the industrial 9-to-5, unstructured hours and piecework was far more prevalent.[8] Even the concept of 'working time' is tied to the standard model: as Vallée and Gesualdi-Fecteau note, although working time was thought to first have been measured by merchants during the Middle Ages, it did not take off until the rise of industrial capitalism where working time became a clocked measured activity. [9]

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the Temporal Boundaries of Work: An Empirical Study of the Nature and Scope of Labour Law Protections' (2016) 32 International Journal of Comparative Labour Law and Industrial Relations; Jill Rubery and others (n 3); Emily Rose, 'Workplace Temporalities: A Time-Based Critique of the Flexible Working Provisions' (2017) 46 Industrial Law Journal 245,

[5] Vallée and Gesualdi-Fecteau (n 4) and Robert Bird, 'Why Don't More Employers Adopt Flexible Working Time' (2015) 118 West Virginia Law Review 327.

[6] Jon Messenger and others, *Working Time Around the World: Trends in Working Hours, Laws, and Policies in a Global Comparative Perspective* (Routledge 2007).

[7] ibid.

[8] Thomspon argues that the pre-industrial work pattern was 'irregular' and 'was one of alternative bouts of intense labour and of idleness': EP Thompson, 'Time, Work-Discipline, and Industrial Capitalism' (1967) 56 Past & Present 56, 73.

[9] Vallée and Gesualdi-Fecteau (n 4).

This standard model of working time started to erode (or revert back to the prevailing norm) with the onset of neoliberalism in the late 1980s.[10] Time shifted towards a 'flexible' model through deregulation, which resulted in forms of work like fixed-term, part-time, on-call and zero-hour contracts.[11] The 9-to-5 was broken down into smaller periods of time, and in the case of on-demand work, into periods solely when work was available. The costs of labour therefore shifted, with more risk placed on the worker than in the standard model.[12] Whilst this move facilitated more participation in the labour market, notably for women,[13] concerns over how these 'atypical' regimes derailed the standard model of working time were well documented.[14]

Since then, the flexible model of working time has been taken to a new extreme.[15] The deployment of new technology (referred to as 'algorithmic management', discussed below) has enabled these atypical regimes to be stretched even further from the standard model of working time.[16] It is this rise in 'algorithmic time' which the thesis focuses on, as it represents the latest development in the transition

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[10] Peter Berg and others, 'Contesting Time: International Comparisons of Employee Control of Working Time' (2004) 57 Industrial and Labor Relations Review 331.

[11] Rubery and others (n 4).

[12] Piasna (n 4) refers to this move from 'standard' to 'fragmented' time which shifted the risks onto the workforce.

[13] Berg and others (n 10).

[14] Bird (n 5) 334 highlights the 'explosion of academic work' on flexitime models.

[15] The following works situation the gig economy as a continuation of the flexible working time phenomenon: Antonio Aloisi and others, 'An Unfinished Task? Matching the Platform Work Directive with the EU and International "Social Acquis"' (ILO Working Paper, 2023); Valentino De Stefano, 'The rise of the 'just-in-time workforce': on-demand work, crowdwork and labour protection in the 'gig-economy'' (ILO 2016); Piasna (n 4); Kathleen Griesbach and others, 'Algorithmic Control in Platform Food Delivery Work' [2019] Socius 5.

[16] Piasna (n 4).

from the standard model of time and is thus a key catalyst to examine the potential of Article 13 WTD.

Algorithmic Time

Algorithmic time, as coined by this thesis, refers to the use of algorithmic management to organise working time.

Breaking this definition down, algorithmic management refers to when decisions which would usually be made by a human manager are instead made by algorithmic software.[17] As Adams-Prassl explains, it refers to the automation of the boss's job, rather than the worker's.[18]

Whilst algorithms (a process or set of rules to be followed in calculations) have been used by management for a long time, it is the use of algorithmic software (computer-programmed procedures for transforming input data into a desired output) that characterised algorithmic management.[19] This can involve artificial intelligence but does not necessarily have to.[20]

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[17] Based on the definition by Alex Wood: the 'use of software algorithms to automate organisational functions traditionally carried out by human managers' in 'Algorithmic Management: Consequences for Work Organisation and Working Conditions' (JRC Working Papers 2021) 1. The term was first coined in Min Lee and others, 'Working with Machines: The Impact of Algorithmic and Data-Driven Management on Human Workers' (Annual ACM Conference on Human Factors in Computing Systems, Seoul, 2015).

[18] Jeremias Adams-Prassl, 'What If Your Boss Was an Algorithm? The Rise of Artificial Intelligence at Work' (2019) 41 Comparative Labor Law & Policy Journal 3.

[19] Wood (n 17); Sara Biacco and others, 'The Algorithmic Management of Work and Its Implications in Different Contexts' (JRC Publications Repository, 2022).

[20] European Commission, 'Algorithmic Management and Digital Monitoring of Work' at <https://joint-research-centre.ec.europa.eu/projects-and-activities/employment/algorithmic-management-and-digital-monitoring-work_en> accessed 6 October 2025. For example, algorithmic scheduling software does not yet involve AI: Charlotte Unruh and others, 'Algorithmic Scheduling in Industry: Technical and Ethical Aspects' (IEAI Research Brief, 2022) 1. Valerio De Stefano and Virginia Doellgast refer to recent innovations in AI and machine learning as a 'new wave' of technological change at work in 'Introduction to the Transfer Special Issue on Regulating AI at Work' (2023) 29 Transfer: European Review of Labour and Research 9, 9.

Algorithmic management thus entails significant data collection and surveillance of workers in order to carry out management decisions from hiring, to instructing, to firing workers.[21] The concept was originally associated with the labour platform economy which uses software algorithms to act as an intermediary market to match different user groups.[22] However, the phenomenon has since spread into more traditional workplaces, with examples like 'people analytics', where data is collected on a workers' performance and then used to make HR decisions, or through the deployment of handheld devices to track workers' activities. [23]

It is expected that algorithmic management will continue to grow in prevalence, with the main empirical studies showing that it is already 'widely present' in the traditional sectors.[24] As a result, this has led to an extensive body of labour law scholarship on algorithmic management. Focus has been placed particularly on how algorithmic management affects privacy,[25] equality[26] and data protection at work.[27]

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[21] Alexandra Mateescue and Aiha Nguyen, 'Algorithmic Management in the Workplace' [2019] Data & Society; Adams-Prassl (n 18).

[22] Mateescue and Nguyen (n 21); Wood (n 17); Jeremias Adams-Prassl and others, 'Regulating algorithmic management: A blueprint' (2023) 14 European Labour Law Journal 124.

[23] Adams-Prassl (n 18).

[24] Exact figures are difficult to establish due to the heterogenous uses of algorithmic management across different industries. A major joint ILO-EU study conducted in Italy, France, South Africa and India found that 'algorithmic management is already a reality' and 'widely present' in traditional sectors: Uma Rani and others, 'Algorithmic Management Practices in Regular Workplaces: Case Studies in Logistics and Healthcare' (JRC Publications Repository, 2024) 1 and 48. An EU study in Spain and German found between 10-20% of clerks and operators in high-technology industries, knowledge-intensive services, and public administration were subject to algorithmic management, with an even higher proportionate for teleworkers: Enrique Fernandez Macias and others, 'The Platformisation of Work' (JRC Publications Repository, 2023).

[25] Frank Hendrickx, 'Privacy, Data Protection and Measuring Employee Performance. The Triggers of Technology and Smart Work' (2018) 9 European Labour Law Journal 99.

[26] Jeremias Adams-Prassl and others, 'Directly Discriminatory Algorithms' (2023) 86 Modern Law Review 144; Raphaële Xenidis, 'Tuning EU Equality Law to Algorithmic Discrimination: Three Pathways to Resilience' (2020) 27 Maastricht Journal of European and Comparative Law 736.

[27] Katherine Kellogg and others, 'Algorithms at Work: The New Contested Terrain of Control' (2020) 14 Academy of Management Annals 366; Marta Otto, 'Workforce Analytics v Fundamental Rights Protection in the EU in the Age of Big Data Data Mining'

Limited attention, however, has been given to the impact of algorithmic management on working time. Algorithmic management affects working time in a myriad of ways, however, these mechanisms have not yet been systematically categorised. Rather, the existing research documents the working conditions in workplaces where algorithmic management is deployed, which includes examples of its impact on working time. This body of research is made up of relatively small-scale qualitative case studies (the majority being on labour platforms), quantitative surveys of workers, or systematic literature reviews of the existing studies, combined with examples taken from company websites or news outlets. Piasna's article appears to be the only attempt so far to theorise the impact of algorithmic management on the 'logic of organizing work time', however, the analysis is rooted in the gig economy which only captures part of the picture. [28]

What this chapter does is provide a descriptive theoretical framework – ie., the naming and characterizing of a phenomenon[29] – of 'algorithmic time'. To do this, it first identifies examples of algorithmic management being used to organise working time within the existing research: it reviews and then systematically categorises them (thematic synthesis) into four distinct phenomenon. By providing terminology and a framework for interpreting algorithmic time, this enables the phenomena to be

(2019) 40 Comparative Labor Law & Policy Journal 389; Orla Lynskey, 'Article 8: The Right to Data Protection' in Michal Bobek and Jeremias Adams-Prassl (eds), *The EU Charter of Fundamental Rights in the Member States* (Hart Publishing 2020).

[28] Piasna (n 4) explains how, instead of reducing the time spent at work through increased efficiency, algorithmic management results in a paradox where the time paid for completing work shrinks but time needed to be available for work expands. Whilst this is particularly true of platform work, it does not capture the heterogenous uses of algorithmic time across different industries, nor does it expand beyond a generalised narrative.

[29] As defined in Lara Varpio and others, 'The Distinctions between Theory, Theoretical Framework and Conceptual Framework' (2020) 95 Academic Medicine 989.

articulated, compared and critiqued, which is ultimately critical for it to later be regulated.

The chapter's overarching framework claims that algorithmic management is used to organise working time in four main ways, defined as (i) dynamic scheduling, (ii) algorithmic pace-rates, (iii) contested time and (iv) temporal disciplining. These four concepts are not necessarily mutually exclusive but depict four distinct uses which can then be deployed by management in tandem or alone.

The following sections will now outline each phenomenon, using examples from labour platforms and traditional workplaces, along with discussion of how algorithmic time builds upon pre-existing flexible working time practices and the potential harms involved.

(i) Dynamic Scheduling

Dynamic scheduling refers to the use of algorithmic management to determine *when* a worker works.

Of the four categories, this is the broadest concept. It covers all examples of algorithmic software being used to organise workplace schedules and shift patterns. This spans from scheduling within on-demand labour platform work, to the use of algorithmic scheduling software in traditional industries like retail and healthcare.

Through algorithmic management, scheduling can become *data-driven*. Rather than distributing shifts based on a regular standardised pattern, algorithmic software relies upon various data inputs to generate an optimal scheduling outcome.

On-demand, location-based platform work is a classic example of dynamic scheduling. Gigs are available in direct response to live customer requests, which are then matched through the platform's algorithm. Delivery platform workers, for example, must secure time-sensitive, immediate deliveries based on a hyper-flexible schedule dictated by consumer orders.[30] This spans from delivering meals, to groceries, to people through ride-hailing services.[31] Cleaning staff, babysitters, handiworkers and many other personal services can be requested via labour platform apps, which rely upon dynamic scheduling to create instantaneous, reactive schedules.[32] HYR is another location-based platform app which relies upon dynamic scheduling, but combines the labour platform economy with a form of agency work. As a temporary staffing app, it can provide traditional businesses with workers within fifteen minutes.[33] Schedules are thus 'dictated by fluctuating supply and demand'.[34]

[30] Moritz Altenried, 'On the Last Mile: Logistical Urbanism and the Transformation of Labour' (2019) 13 Work Organisation, Labour & Globalisation 114.

[31] Examples of labour platforms included Deliveroo, Instacart, and Uber, respectively.

[32] Examples of labour platforms include Helping, UrbanSitter, Your Mechanic, Airtasker, TaskRabbit, RingTwice, respectively (referred to in Pierre Bérastégui, 'Exposure to Psychosocial Risk Factors in the Gig Economy: A Systematic Review' (ETUI 2021) and EU-OSHA, *Digital Platform Work and Occupational Safety and Health: Overview of Regulation, Policies, Practices and Research* (EU Publications Office 2022).

[33] See HYR, 'Find Extra Staff in 15 Minutes' <https://www.usehyr.com/> accessed 5 October 2025.

[34] Bérastégui (n 32) 20.

Online labour platforms also rely upon dynamic scheduling,[35] with crowdwork platforms like MTurk, CloudFlower and Upwork offering real-time micro-tasks (extremely parcelled activities, often menial and monotonous)[36] to be completed instantaneously.[37]

In traditional workplace settings, algorithmic scheduling software is being 'deployed rapidly' to automatically or semi-automatically generate work schedules.[38] The systems 'draw on a variety of data to predict customer demand, make decisions about the most efficient workforce schedule and generate schedules in real time as new data becomes available'.[39] Employers define the set of factors to be considered (such as expected footfall, tasks required, staff availability, budget restraints, statutory working time limits) and the scheduling algorithm will construct the best schedule around this.[40] Algorithmic scheduling software is used in industries from hospitality and retail, to transportation and healthcare,[41] and the major software providers –

[35] Different categorisations of labour platforms exist: while the ILO divides labour platforms into location-based or online (see ILO, 'Digital Labour Platforms' <https://www.ilo.org/digital-labour-platforms> accessed 5 October 2025) Bérastégui (n 32) distinguishes between on-demand physical platforms, crowdwork and online freelance platforms.

[36] De Stefano (n 15).

[37] Alex Wood and others, 'Good Gig, Bad Gig: Autonomy and Algorithmic Control in the Global Gig Economy' (2019) 33 Work, Employment and Society 56.

[38] Javier Sánchez-Monedero and Lina Dencik, 'The Datafication of the Workplace' (DATAJUSTICE 2019) 17.

[39] Annette Bernhardt and others, 'Data and Algorithms at Work: The Case for Worker Technology Rights' (Center for Labor Research and Education 2021) 9.

[40] Gábor Kártyás, 'Less Human but More Effective?' (2024) Pázmány Law Review 67, 74. For example, Rotageek is a scheduling software provider which states that employers can choose from 'hundreds of variables including staff skills, availability, preferences, fairness and pre-defined rules', see Auto Scheduling' at <https://www.rotageek.com/solutions/rota-auto-scheduling/> accessed 5 October 2025. Lucas Kletzander and Nysret Musliu outline factors like statutory working time requirements, employee shift requests, fairness, budgets, tasks involved, and categorise these into 'hard' and 'soft' constraints in 'Solving the General Employee Scheduling Problem' (2020) 113 Computers & Operations Research 104794. For other examples of factors used, see Unruh and others (n 20); Özgür Kabak and others, 'Efficient Shift Scheduling in the Retail Sector through Two-Stage Optimization' (2008) 184 European Journal of Operational Research 76; Andreas Ernst and others, 'Staff Scheduling and Rostering: A Review of Applications, Methods and Models' (2004) 153 European Journal of Operational Research 3.

[41] Ernst and others (n 40).

Ultimate Kronos Group, Dayforce, Percolata and Rotageek – all highlight how the software is customised to the organisation deploying it.

Whilst scheduling algorithms are not new,[42] the use of algorithmic software to set schedules is highly distinctive. This is due to the sheer quantity and speed of data processing, as well as the reliance on predictive analysis to anticipate an organisation's labour needs based on data inputs like real-time customer flows captured by sensors, weather forecasts, previous sales, instore promotions and traffic.[43] Percolata, for instance, is a scheduling software provider that can set schedules to 15-minute increments to best match labour with expected customer demand[44] and Kronos, another major provider, can combine scheduling with biometric finger-print data to confirm workers clock-in according to the set schedule.[45]

Similarly, whilst dynamic scheduling in the platform economy builds upon previous models of 'on-call' or 'zero-hour' work contracts where workers are given shifts as and when, the use of algorithmic management allows for shifts to be set in real-time based on 'granular fluctuations' within the data inputs,[46] resulting in a new level of scalability and a hyper-responsiveness to manager needs'. It would previously have been untenable for a human manager to coordinate real-time shifts for vast

[42] According to Ernst and others (n 40), the origins of staff scheduling can be traced back to 1950s literature on traffic delays at toll booths in the US.

[43] Wood (n 17).

[44] Wood (n 17) 4.

[45] Madison Van Oort, 'The Emotional Labor of Surveillance: Digital Control in Fast Fashion Retail' (2019) 45 Critical Sociology 1167.

[46] Mateescue and Nguyen (n 21) 10.

numbers of employees in the way dynamic scheduling can. Although the overarching premise of optimising scheduling is not novel, dynamic scheduling represents the deployment of extensive computing power to develop previous models or mechanisms for setting time.

Significant benefits can arise from the use of dynamic scheduling. Compared to 'shambolic' scheduling practices, like pinning last-minute rotas to noticeboards, algorithmic scheduling software can be used to compute various conflicting scheduling needs in a predictable and accessible way.[47] One of the major advantages of using scheduling software is the reduction in time taken to manually determine schedules, as this can be automated in a matter of seconds.[48] Significant savings on labour costs by accurately predicting staffing needs, [49] the removal of managerial favouritism in the distribution of shifts,[50] and the use of the software to ensure compliance with working time laws are some of the additional benefits often cited. [51] Dynamic scheduling in the platform economy can also be regarded as facilitating time flexibility for workers, which some qualitative studies have emphasised workers valuing.[52]

[47] Sarah O'Connor 'When Your Boss Is an Algorithm' *Financial Times* (8 September 2016).

[48] Adrian Bridgwater, 'From Scrubs To Software, Rotageek Rotates Worker Workloads' *Forbes* (3 August 2020) <https://www.forbes.com/sites/adrianbridgwater/2020/08/03/from-scrubs-to-software-rotageek-rotates-worker-workloads/> accessed 5 October 2025.

[49] Peeyush Pandey and others, 'Staffing, Tour Scheduling, and Re-Planning in Specialty Stores with Regular and on-Call Workers' (2025) 204 Computers & Industrial Engineering 111089; Kabak and others (n 40); Kletzander and Muslui (n 40).

[50] Patrick Briône, 'My Boss the Algorithm: An Ethical Look at Algorithms in the Workplace' (ACAS 2020); Mateescue and Nguyen (n 21).

[51] Bernhardt and others (n 39).

[52] This flexibility has been appreciated by female platform workers in particular: Griesbach and others (n 15); Haley Kwan, 'Women's Solidarity, Communicative Space, the Gig Economy's Social Reproduction and Labour Process: The Case of Female Platform Drivers in China' (2022) 48 Critical Sociology 1221; Ruth Milkman and others, 'Gender, Class, and the Gig Economy: The Case of Platform-Based Food Delivery' (2021) 47 Critical Sociology 357.

However, much of literature highlights how these beneficial outcomes are dependent upon regulation or worker participation. Dynamic scheduling has been tied-up in controversies around employment status, which have been particularly dominant in the gig economy literature. Known as the 'autonomy paradox',[53] 'subordinated agency',[54] 'forced flexibility'[55] or 'flexibility myth',[56] this refers to the discrepancy between the working time sovereignty promoted by companies deploying dynamic scheduling, compared to the lived reality. Whilst it may appear that platform workers can choose when they work, and thus be characterised as independent contractors, this is often tightly controlled through subtle but manipulative mechanisms. These include low base pay rates, nudging, gamification[57] (or gamblification),[58] internal competition, information asymmetry and automated notifications.[59] Examples include a ride-hailing platform worker receiving a message claiming that there will be a bonus for completing a certain number of rides: the platform will then withhold the final ride to prevent the worker from logging off.[60] In online crowd-work, the use of monitoring techniques like screenshot surveillance and instant messaging can result in 'client colonialisation of

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[53] John Kitching and Marfuga Iskandarova, 'Freelancing and the Struggle for Work-Time Control' in Eddy Laveren and others (eds) *Frontiers in European Entrepreneurship Research* (Edward Elgar Publishing 2019) 193.

[54] Alexander Wood and Vili Lehdonvirta, 'Antagonism beyond Employment: How the "Subordinated Agency" of Labour Platforms Generates Conflict in the Remote Gig Economy' (2021) 19 Socio-Economic Review 1369.

[55] Aude Cefaliello and Cristina Inversi, 'The Impact of the Gig-Economy on Occupational Health and Safety: Just an Occupation Hazard?' in Valerio De Stefano and others (eds), *A research agenda for the gig economy and society* (Edward Elgar Publishing 2022) 36.

[56] Wood and others (n 37) 66.

[57] Alex Rosenblat and Luke Stark, 'Algorithmic Labor and Information Asymmetries: A Case Study of Uber's Drivers' (2016) 10 International Journal of Communication 3758.

[58] Veena Dubal, 'The House Always Wins: The Algorithmic Gamblification of Work' (LPE Project, 23 January 2023).

[59] Mirela Ivanova and others, 'The App as a Boss? Control and Autonomy in Application-Based Management' (Arbeit, Genzen, Fluss 2018).

[60] Dubal (n 58).

non-working time',[61] despite crowdworkers appearing to have complete scheduling autonomy. In many instances, it can be argued that these mechanisms ultimately dictate the parameters through which workers choose when and whether to work, resulting in a loss of autonomy over working time and a potential misclassification of employment status.

It should be noted, however, that the use of dynamic scheduling is not restricted to situations where the employment status of the worker is disputed. As will be discussed in the following chapters, those with standard employment relationships are also subject to dynamic scheduling – platform workers with employment status, or healthcare workers subject to algorithmic scheduling software, for example – since employment status is not strictly conditional upon regular schedules.

In addition to concerns over status misclassification, dynamic scheduling in platform work has been widely criticised for leading to risks of stress, anxiety, depression and burnout arising from the anti-social, intense and irregular hours.[62] Algorithmic scheduling software has similarly been criticised for allowing employers to 'micro-manage' individual movements on a 'minute-by-minute' basis,[63] resulting in high staff turnover[64] and workers 'missing out on the simple, joyful things in life.'[65] Studies on online and location-based platform work have shown workers undertaking long hours in order to counteract the unpredictability of available work or satisfy

[61] Kitching and Iskandarova (n 53) 191.

[62] See Bérastégui (n 32) for synthesis of the literature on platform work, particularly pages 17 - 19.

[63] Briône (n 50) 4.

[64] Van Oort (n 45).

[65] As stated by a retail worker during interviews conducted by Bernhardt and others (n 39) 5.

clients' schedules.[66] As one crowdworker described in an interview, 'I wake up, and it's always time to work because it just never ends … you never know when it's gonna get busy and when it's not.'[67] There are concerns that constant 24/7 availability will led to physical health impacts in addition to psychological harms, such as cancers, diabetes and cardiovascular disease.[68] Workers are therefore at risk of 'profoundly negative consequences'[69] from dynamic scheduling if not regulated, as suggested by the growing number of empirical studies.[70]

(ii) Algorithmic Pace-Rates

Algorithmic pace-rates refer to the use of algorithmic management to set the *pace* of a task.

Employers can determine a specific speed for completing a task, and then track if this pace is complied with using algorithmic management. This is mostly commonly achieved through handheld or wearable devices: workers carry out work whilst wearing

[66] Bérastégui (n 32) 21; Wood and others (n 37); Matthew Matthews and others, 'Precarity in Platform Work: A Study of Private-Hire Car Drivers and Food Delivery Riders' (IPS Working Paper 2022).

[67] Alex Williams and others, 'The perpetual work life of crowdworkers: how tooling practices increase fragmentation in crowdwork' (ACM on Human-Computer Interaction Conference, Glasgow 4 May 2019) 16.

[68] EU-OSHA, 'Foresight on New and Emerging Occupational Safety and Health Risks Associated with Digitalisation by 2025' (Publications Office of the EU 2018).

[69] Van Oort (n 45) 1170.

[70] Emilia Vignola and others provide a comprehensive synthesis of the existing empirical research on the health implications of algorithmic management in 'Workers' Health under Algorithmic Management: Emerging Findings and Urgent Research Questions' (2023) 20 International Journal of Environmental Research and Public Health 1239. Other empirical studies include Emma Bartel and others, 'Stressful by Design: Exploring Health Risks of Ride-Share Work' (2019) 14 Journal of Transport & Health 100571; Magnus Thorn Jensen and others, 'Computer in command: Consequences of algorithmic management for workers' (Digital Programme Foundation for Progressive Studies 2024).

these devices, which measure each movement and raise alerts if the pace is not met.[71] Warehouse work,[72] cleaning[73] and healthcare work[74] are industries best known for using algorithmic pace-rates through handheld or wearable devices.

Algorithmic pace-rates can also be seen in point-of-sale cash registers, where the transaction is digitally tracked through algorithmic software which can then flag individual workers deemed to take too long.[75] RetailNext, one software provider, lets managers receive all data on the transaction in one click, combined with video recordings of the transaction itself.[76] Platform work also features algorithmic pace-rates: micro-tasks in crowdwork have set paces to be completed, with tasks being removed if not completed in time.[77] In delivery location-based platform work, the speed of a task can be set in advance and tracked through GPS, whereby failure to meet the pace results in reduced performance rankings,[78] whilst online crowdwork platforms can track the workers' screens at random intervals, record keystrokes and take screenshots, to ensure that the task is performed at a 'satisfactory pace'.[79] A final example concerns the use of algorithmic pace-rates in consulting firms, where software like Genome

[71] Wood (n 17).

[72] Valerio De Stefano '"Negotiating the Algorithm": Automation, Artificial Intelligence and Labour Protection' (ILO Working Paper 2018).

[73] Adrián Todolí-Signes, 'Making Algorithms Safe for Workers: Occupational Risks Associated with Work Managed by Artificial Intelligence' (2021) 27 Transfer: European Review of Labour and Research 433.

[74] Pav Akhtar and Phoebe Moore, 'The Psychosocial Impacts of Technological Change in Contemporary Workplaces, and Trade Union Responses' (2016) 8 International Journal of Labour Research 101.

[75] Van Oort (n 45).

[76] Van Oort (n 45).

[77] Todolí-Signes (n 73).

[78] Todolí-Signes (n 73).

[79] Bérastégui (n 32) 32.

collects data to calculate the average duration of certain tasks and alert team leaders when these paces are not met.[80]

The use of predetermined working rates is not new, having flourished under factory production lines and Taylorism – a system which emphasised the standardisation of tasks and regulation of working pace in order to maximise efficiency. Algorithmic management is often likened to a form of 'Taylorism on steroids' because of the ability to minutely monitor and track worker movements.[81] What is extraordinary about algorithmic pace-rates, beyond traditional Taylorist methods, is the quantity, specificity and instantaneous nature of the data collection and the automated flagging of underperforming workers. Human oversight would simply not be able to compute continuous output data on each individual worker simultaneously, resulting in an extensive ability for management to ensure that workers comply with the set pace for the entirety of the shift.

The impacts of algorithmic pace-rates on workers seem largely to depend upon the how fast the pace of work is, and how strictly is it enforced. Algorithmic pace-rates can be used to ensure compliance with health and safety limits; for example, wearable devices can also track workers' paces to ensure that they do not work *above* a sustainable speed threshold, for instance.[82]

However, as with dynamic scheduling, the literature overwhelmingly indicates that existing uses of algorithmic pace-rates have concerning implications for workers.

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[80] Wood (n 17).

[81] Sarah O'Connor, 'Return of 'Taylorism' on Steroids' *Financial Times* (8 September 2016). The comparison is also made by Bérastégui (n 32); Piasna (n 4); Akhtar and Moore (n 74).

[82] Todolí-Signes (n 73); Stefania Marassi and Mária Éva Földes, 'From Healthcare to Employment: Tackling the Regulatory Challenges of in-Body Wearable Devices at Work in the European Union' (2025) 16 European Labour Law Journal 195.

Likened to a 'digital whip',[83] it has been argued that algorithmic pace-rates result in fatigue, stress, and accidents in attempting to meet the speeds required.[84] One study found that food delivery platform workers had an injury rate 16 times higher than the construction worker.[85] The 'hectic'[86] and 'rapid pace of work'[87] driven by algorithmic management can drive work overload, which can be particularly damaging to health when combined with qualitative underload (ie., monotonous, repetitive tasks), leading to exhaustion,[88] psychological distress, low productivity[89] and heighten risk of heart attacks.[90] As one warehouse worker facing algorithmic pace-rates through wearables explained 'we're aware that the tracking might be used to put pressure on us to work faster, and it might be used to sack people. But… physically we just can't do any more'.[91] The extent of physical injuries driven by algorithmic pace-rates will be discussed in more depth in Chapter 6.

(iii) Contested Time

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[83] Todolí-Signes (n 74) 435.

[84] Todolí-Signes (n 74) 435. Vignola and others (n 70); Ruben Rodriguez Elizalde, 'Techno-Stress: Damage Caused by New Emerging Risks' (2021) 10 Laws 1.

[85] Vignola and others (n 40) citing the New York City Department of Consumer and Worker Protection, 'A Minimum Pay Rate for App-Based Restaurant Delivery Workers in NYC' (NYC 2022).

[86] Bérastégui (n 32) 5.

[87] EU-OSHA (n 32) 22.

[88] EU-OSHA (n 32) 24

[89] EU-OSHA (n 68).

[90] Bérastégui (n 32) 5.

[91] Akhtar and Moore (n 74) 115.

Contested time refers to the use of algorithmic management to distinguish working time from rest time.

Extensive monitoring of workers through algorithmic management enables employers to carefully record each activity, which can then be used to make minute distinctions between what is classified as working time compared to rest time. The term 'contested time' refers specifically to the time which is contested between workers and employers over its classification as either rest time or working time. It builds upon Crain and others' concept of 'invisible work',[92] as it is time which is either unpaid or undervalued but implicit within securing or fulfilling a task set by an algorithm.[93]

The phenomenon of contested time is closely linked to both dynamic scheduling and algorithmic pace-rates. Time which exceeds the algorithmic pace-rate, or time spent waiting for shifts under dynamic scheduling, might be regarded as contested time. Hence, the upshot of setting specific algorithmic pace-rates for tasks, or using hyper-reactionary dynamic scheduling, is the resultant abundance in contested time.

There are numerous examples of contested time in labour platform work. This includes the time spent on returned gigs[94] or cancelled deliveries,[95] loading vehicles,[96]

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[92] Marion Crain and others, *Invisible Labor: Hidden Work in the Contemporary World* (University of California Press 2016).

[93] Bérastégui (n 32); Andrey Shevchuk and others, 'Always on across Time Zones: Invisible Schedules in the Online Gig Economy' (2021) 36 New Technology, Work, and Employment 94.

[94] Kotaro Hara and others, for example, found that crowdworkers on AMT returned on average 26.5 percent of gigs in 'A Data-Driven Analysis of Workers' Earnings on Amazon Mechanical Turk' [2018] Computers and Society.

[95] Uma Rani and others, 'Delivery workers, trapped in an algorithmic system' [2022] Sociologia 11.

[96] Sarah Butler, 'Amazon Delivery Drivers in UK Raise Alarm over Real-Terms Pay Cut' *The Guardian* (27 March 2022).

waiting for orders,[97] communicating with clients, [98] scrolling through gigs,[99] creating profiles or free content,[100] bidding for gigs,[101] and time spent trying to decipher the system.[102] The ride-hailing platform, Uber, for instance, categorises working time into P1 (waiting time), P2 (driving to pick up passenger) and P3 (passengers in the vehicle); much of the dispute arises around payment for P1 and P2, particularly if the worker is on a rival platform app during P1 or P2.[103] Hence, in these examples, time is not regarded as paid working time, yet its status as unpaid rest time can be contested.

Within traditional workplaces, algorithmic management can be used to identify periods of inactivity or lapses in attention among workers. Examples include the use of wearable devices to monitor and identify any 'time off task' (as labelled by the multinational company, Amazon) ,[104] including the recording of any time spent using bathroom breaks.[105] In retail, the collection of biometric finger-print data is used to detect 'time stealing' by coworkers who clock off early or late for each other.[106] Keystroke and mouse movement monitoring for office-based workers can be used to detect 'idle time' spent away from a work computer:[107] the use of this software, such

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[97] Griesbach and others (n 15).

[98] Shevchuk and others (n 93).

[99] Bérastégui (n 32).

[100] Bérastégui (n 32).

[101] Sandra Fredman and others, 'Fair Work for Platform Workers: Lessons from the EU Directive and Beyond' [2025] Industrial Law Journal dwaf018. They also provide an extensive list of the 'unpaid extra time' frequently required by workers on platforms.

[102] Griesbach and others (n 15).

[103] Louis Hyman and others, 'Platform Driving In Seattle' (Cornell University 2020).

[104] Jodi Kantor and others, 'Power and Peril: 5 Takeaways on Amazon's Employment Machine' *The New York Times* (15 June 2021) < https://www.nytimes.com/2021/06/15/us/politics/amazon-warehouse-workers.html> accessed 29 October 2025.

[105] Sánchez-Monedero and Dencik (n 38).

[106] Van Oort (n 45) 1171.

[107] Kellogg and others (n 27).

as InterGuard, increased during the Covid-19 pandemic as a way of monitoring remote workforces.[108] The fact that a 'mouse jiggler' – software which makes a computer mouse move to avoid idle time being detected – was recently added to the Cambridge dictionary denotes the prevalence of this practice.[109] By using algorithmic management to detect time in which the worker is not being productive for the company, it status as time which the individual is actually 'working' is contested.

The phenomenon of contested time is not new, however. There is a significant body of EU litigation in which employees have contested the designation of certain time as rest time by their employer.[110] This ultimately arises from the regulation on working time (to be discussed in Chapter 2) which delineates two binaries of time: working and rest time. As mutually exclusive categories, it results in contestation over where the dividing line lies.

What is unique about algorithmic management is the degree and intensity of the monitoring of time: ubiquitous monitoring allows for contestation over whether even certain *seconds* count as working time or not. The information asymmetry and invasion of privacy required to calculate contested time is arguably novel to the workplace. Whilst brief periods of inactivity would usually not be detected by traditional employers, algorithmic monitoring allows employers to make these fine distinctions for *all* workers, simultaneously and in real-time.

[108] Mohammad Hossein Jarrahi and others, 'Algorithmic Management in a Work Context' (2021) 8 Big Data & Society 1.

[109] See 'Mouse Jiggler' at <https://dictionary.cambridge.org/dictionary/english/mouse-jiggler> accessed 7 October 2025.

[110] Chapter 6 discusses the case law in depth, with key cases being Case C-303/98 *SIMAP v Conselleria de Sanidad y Consumo de la Generalidad Valenciana* [2000]ECLI:EU:C:2000:528; Case C-151/02 *Landeshauptstadt Kiel v Norbert Jaeger* [2003] ECLI:EU:C:2003:437; Case C-518/15 *Ville de Nivelles v Rudy Matzak* [2018] ECLI:EU:C:2018:82.

The use of algorithmic management to distinguish periods when workers are, or are not, working can bring advantages for workers. Wood and others' study of remote gig workers, for example, found that screenshot monitoring to detect idle time was 'often welcomed by workers' because the platform guaranteed payment for those who were working.[111]

However, contested time has largely been associated with negative impacts on workers. Where contested time is coupled with a lack of income and job security – which is a predominant feature of labour platform work – this leads to 'major work-related stressors… associated with poor mental health, burnout, depression, anxiety and physical health issues like fatigue and pain'.[112] Contested time can also lead to 'wage theft', where work which ought to be paid is instead outsourced to the worker.[113] Even the use of contested time in settings where workers *do* have job and income security can still result in significant psychosocial risks. The extensive monitoring required to distinguish working time from idle or unproductive time, notably privacy invasion, can lead to a lack of trust in the employer,[114] stress and anxiety due to the loss of autonomy,[115] and fatigue at the inability to take unscheduled breaks.[116] The rise of contested time therefore poses damaging implications if not adequately regulated.

[111] Wood and others (n 37).

[112] EU-OSHA (n 32) 25 – 26.

[113] Bernhardt and others (n 39) 16.

[114] Jensen and others (n 70) 37.

[115] EU-OSHA (n 32).

[116] Akhtar and Moore (n 74).

(iv) Temporal Disciplining

The last phenomenon refers to the use of algorithmic management to *discipline* workers through the allocation of time based on performance.

This is where, if a worker performs well, they are rewarded with a choice in which shifts to work. The inverse of this, however, means that if a worker performs poorly, they are consequently disciplined by having reduced access to their shift preferences.

The use of time in this manner is understudied[117] but has been previously been referred to as an aspect of 'flexible discipline',[118] 'algorithmic despotism',[119] or 'temporal control'.[120] This practice can occur in workplace settings which do not rely upon algorithmic management. For example, managers may give the most lucrative or sociable shifts to their favourite workers, or to workers with the highest rate of sales.[121] Through algorithmic management, however, the practice of temporal disciplining becomes much more pervasive and systematic. Since data is continuously collected on every worker, algorithmic management allows employers to institutionalise the use of performance metrics to allocate shifts in a way which is not feasible by human management.

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[117] The main studies are Alex Wood, 'Powerful Times: Flexible Discipline and Schedule Gifts at Work' (2018) 36 Work, Employment and Society 1061; Alex Wood, *Despotism on Demand: How Power Operates in the Flexible Workplace* (Cornell University Press 2020); Heiner Heiland, 'Neither Timeless, nor Placeless: Control of Food Delivery Gig Work via Place-Based Working Time Regimes' (2022) 75 Human Relations 1824.

[118] Wood (n 117 (2020)) 20.

[119] Griesbach and others (n 15) 9.

[120] Heiland (n 117) 1824.

[121] Wood (n 117 (2020)).

The starkest examples of temporal disciplining are seen on location-based platform work. On certain platforms, workers with the highest ratings are given 'early-access' to prebook their shifts (usually 1-hour slots) for the following week.[122] Shift preferences are therefore offered as an incentive for high performance, whilst workers with low performance metrics can be automatically disciplined by restricting their access to lucrative shifts or sociable hours.

Examples of temporal disciplining in traditional workplaces include the use of 'Ziosk' tablets located at dining tables in restaurants: customers can use the tablet to rate their waiter, and waiters with the lowest customer ratings may have their shifts removed.[123] In Amazon's warehouses, managers can give out 'unpaid voluntary time' to workers: those who's handheld devices have recorded the highest pace may be selected.[124] Algorithmic scheduling software, like Percolata, can also incorporate workers' productivity scores into the distribution of shifts.[125]

As the last example shows, there is an overlap between temporal disciplining and dynamic scheduling. In some respect, temporal disciplining could be regarded as a sub-category of dynamic scheduling, since schedules are distributed in response to data on worker performance. However, this thesis treats them as conceptually distinct

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[122] Examples of labour platforms known to have used this system include PedidosYa and Deliveroo (Rani and others (n 95)), Instacart (Griesbach and others (n 15)); and Foodora (Heiland (n 117) and Ivanona and others (n 59)).

[123] Mateescue and Nguyen (n 21) citing Caroline O'Donovan, 'An Invisible Rating System At Your Favorite Chain Restaurant Is Costing Your Server' (BuzzFeed News 21 June 2018) <https://www.buzzfeednews.com/article/carolineodonovan/ziosk-presto-tabletop-tablet-restaurant-rating-servers> accessed 10 July 2024.

[124] US Senate Committee on Health, Education, Labor and Pensions, 'The "Injury-Productivity Trade-off": How Amazon's Obsession with Speed Creates Uniquely Dangerous Warehouses' (Majority Staff Report, December 2024) 33.

[125] Patrick Briône, 'Mind over machines: New technology and employment relations' (ACAS 2017).

because of the unique implications and consequences of temporal disciplining, which are not found in other types of dynamic scheduling.

As Heiland has argued, scheduling is typically regarded as an allocative instrument – shifts are distributed based on what is optimal for the employer and employee. Temporal disciplining, however, turns shift allocation into a 'control regime'[126] in which 'hours are the new bonus'.[127] This subversive use of time marks a fundamental departure from the standard model of time, as workers are only guaranteed the shifts they would like *if* they can outperform their colleagues.

The implications of using time as a means of disciplining workers can be significant. It renders social lives, childcare arrangements and weekly activities conditional upon a worker's own productivity. The ability to plan a life *outside of work* becomes intrinsically tied to a workers' ability to perform *inside of work.*

The possible harms of this phenomenon on workers are discussed in more depth in Chapter 5, but many have highlighted the emotional toll of ranking systems, leading to insomnia, psychosomatic complaints, and exhaustion.[128] Akhar and Moore argue that the continual pressure to meet performance metrics set by algorithms leads to a feeling of being 'hyper-employed' and is akin to a form of psychosocial structural violence.[129] Physical injuries have occurred as workers push themselves to maintain their performance ranking in order to choose their shifts next week,[130] and the use of

[126] Heiland (n 117) 1824.

[127] Stephanie Luce and Naoki Fujita, 'Discounted Jobs: How Retailers Sell Workers Short' (Murphy Institute University of New York and Retail Action Project 2012) 14.

[128] See Vignola and others' (n 70) literature review.

[129] Akhtar and Moore (n 74).

[130] Heiland (117).

time in this manner could have discriminatory implications for female workers who, as the predominant caregivers, may suffer reduced productivity scores for attending to caregiving duties. Temporal disciplining is therefore a phenomenon which, if not properly regulated, could have harmful implications for the workforce.

Conclusion

To conclude, this chapter has demonstrated how algorithmic management can be deployed to dictate time inside and outside of work. The four categories of algorithmic time identified – dynamic scheduling, algorithmic pace-rates, contested time and temporal discipline – reflect extreme manifestations of flexible working time models, marking a significant departure from the standard 9-to-5 model of continuous stretches of working time.

These four phenomena can pose harms to workers. The use of hyper-reactionary schedules, extensive monitoring, rapid pace-rates and contestation over paid time – all governed through algorithmic software – has been likened to the 'dehumanisation' of workers.[131] Van Oort's study of dynamic scheduling in retail, for example, concluded that workers were treated as cheaply as the clothes they sell due to the lack of regard for their lives outside of work.[132]

[131] Akhtar and Moore (n 74) 101,112; Todolí-Signes (n 73) 438, 442, 449; Theo Cox and Johannes Anttila, 'Algorithmic Management and Workplace Digitalisation in Finland' (Foundation for European Progressive Studies 2024) 39; Alan Bogg, 'Escaping Labor Law's Matrix: Governance by Numbers: The Making of a Legal Model of Allegiance Book Review' (2018) 40 Comparative Labor Law & Policy Journal 477, 484. Aída Ponce Del Castillo, 'Chapter 5 Occupational Safety and Health in the EU: Back to Basics' in Bart Vanhercke and others (eds), *Social policy in the European Union: State of Play* (ETUI 2016) 151.

[132] Van Oort (n 45) 1170, citing an interviewee who stated that because the industry 'sell the clothing so cheap, there's this air of unimportance that just infiltrates everything, including the staff'.

Given the profound impact that working time has on workers' daily lives, there is a need to ensure sufficient regulatory protections exist against such possible harms. In the following chapter, the regulation available at an EU level will be examined: it will ultimately be argued that the *humanisation* of work principle found in Article 13 WTD is well poised to address these *dehumanisation* concerns.

Chapter 2

Existing EU Regulation of Algorithmic Time

Introduction

EU labour law is a highly distinctive, and still developing, field of EU law.[1] Comprised of a patchwork of legislative instruments, Court of Justice (CJEU) decisions and social partners' agreements, this area of EU law involves the careful 'coordination' of competences with distinct national labour law models.[2] The introduction of the Charter of Fundamental Rights (the Charter)[3] and the ability of workers to rely *directly* on certain EU provisions in particular has driven a burgeoning body of CJEU case law, which complements the expanding body of legislation.

As a result, EU labour law offers significant protective potential to workers across the Union. This chapter investigates the protections offered by this body of law to the specific issue of algorithmic time. Given the mounting pressure on the EU and Member States to introduce new legislation on algorithmic management,[4] investigating first what existing rules *already* govern algorithmic time is a worthwhile endeavour.

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[1] In 2012, Catherine Barnard wrote 'while there is now an identifiable body of EU law which can loosely be described as 'labour' or 'social' policy, its coverage is far from comprehensive, and it certainly does not represent a replication of national social policy on the EU stage' in *EU Employment Law* (OUP 2012) 84.

[2] Consolidated Version of The Treaty on the Functioning of the European Union [2012] OJ C326/47 (TFEU), Article 5(2).

[3] Charter of Fundamental Rights of the European Union [2016] OJ C202/02.

[4] Committee on Employment and Social Affairs, 'Draft Report with recommendations to the Commission on digitalisation, artificial intelligence and algorithmic management in the workplace – shaping the future of work' (European Parliament 2025/2080(INL)).

Six EU instruments and their related CJEU case law are examined in this chapter: the Working Time Directive (WTD),[5] Transparent and Predictable Working Conditions Directive,[6] Framework Directive on Safety and Health of Workers,[7] General Data Protection Regulation (GDPR),[8] Artificial Intelligence (AI) Act[9] and Platform Work Directive.[10] Whilst there are other EU instruments which are capable of governing specific issues within algorithmic time (and thus do feature briefly in other chapters[11]), these six instruments were chosen as those most relevant to the issue of algorithmic time.

The chapter examines each of the chosen instruments in turn to highlight their regulatory impact on algorithmic time. Running throughout the analysis of each are three overarching criticisms which limit the capacity of EU law to address algorithmic time. The first is (i) the implicit reliance on the standard model of working time (see particularly in the Working Time Directive, Transparent and Predictable Working Conditions Directive, and Platform Work Directive) to regulate algorithmic management. As a result, the focus is on *duration* of working time, not the *distribution,* which is the main issue with algorithmic time.

[5] Directive 2003/88/EC of 4 November 2003 concerning certain aspects of the organisation of working time [2003] OJ L299/9.

[6] Directive (EU) 2019/1152 of 20 June 2019 on transparent and predictable working conditions in the European Union [2019] OJ L186.

[7] Council Directive (89/391/EEC) of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work [1989] OJ L183/1.

[8] Regulation 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data [2016] OJ L 119/1.

[9] Regulation (EU) 2024/1689 of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) [2024] OJ L2024/1689.

[10] Directive (EU) 2024/2831 of 23 October 2024 on improving working conditions in platform work [2024] OJ L2024/2831.

[11] See, for example, discussion of Council Directive 2000/78/EC of 27 November 2000 establishing a general framework for equal treatment in employment and occupation [2000] OJ L303/16 in Chapter 6 and Directive (EU) 2019/1158 of 20 June 2019 on work-life balance for parents and carers [2019] OJ L188/79 in Chapter 7.

This then has a knock-on effect on other instruments, resulting in the second trend which is the (ii) use of procedural safeguards without substantive standards. Transparency is a core objective of the GDPR, Transparent and Predictable Working Conditions Directive, AI Act and Platform Work Directive, which whilst essential, is contingent upon substantive secondary legislation. The last trend is (iii) the limitations of risk assessments to address working time. While an increasingly popular tool (seen particularly in the Framework Directive on Safety and Health, GDPR, AI Act and Platform Work Directive), risk assessments struggle to detect nuanced working time harms like lost time with family.

Against the backdrop of these overarching limitations, the chapter argues that the under-researched general principle in Article 13 WTD becomes central to EU-level protection against algorithmic time. As the main provision in the WTD governing non-standard working time models, Article 13 could be able to (i) overcome some of the predominant focus on standard working time norms. This would then enable it to (ii) offer substantive guidance to augment procedural protections and (iii) guide risk management analysis in what are acceptable uses of working time, thus shaping some of the managerial discretion within the assessment.

The chapter ultimately concludes by arguing that the study of Article 13 WTD is therefore critical to addressing algorithmic time at an EU level.

<u>Worker Status</u>

Prior to examining the six EU instruments, however, opening remarks should be made regarding employment status. Many of the legislative instruments to be discussed are only applicable to those with 'worker' status. According to the CJEU's criteria, this is a person who 'performs services of some economic value for and under the direction of another person in return for which he receives remuneration'.[12]

Much has been written on the employment status of those undertaking platform work and on-demand work. As alluded in Chapter 1, the notion that workers are not bound to work at specific times – but can instead chose when to work – has led to the disapplication of employment status. The organisation of working time is closely related to the question of employment status: as Bogg notes, many of the non-standard forms of work are defined by their working time arrangements, for example, part-time workers or on-call workers.[13]

The focus of this thesis, however, does not engage substantively with this well-trodden debate. It is instead interested in the secondary question posed by Davies: even if non-standard workers do receive worker status, are the existing regulations for workers sufficient?[14] In several of the instruments, access to worker status is treated as an end-goal. However, it must be interrogated whether those *with* worker status have adequate protection arising from algorithmic time. Otherwise, as Davies notes, receiving worker status is 'not the end of the story'.[15]

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[12] Case 66/85 *Deborah Lawrie-Blum v Land Baden-Württemberg* [1986] ECLI:EU:C:1986:284, para 1.

[13] Alan Bogg, 'The Regulation of Working Time in Europe' in Alan Bogg and others (eds), *Research Handbook on EU Labour Law* (Edward Elgar 2016).

[14] ACL Davies, 'Wages and Working Time in the "Gig Economy"' (2020) 31 King's Law Journal 250.

[15] ibid 251.

To illustrate this point, the case studies relied upon in Chapters 5, 6 and 7 all concern the use of algorithmic time in settings where individuals *have* worker status. What is particularly interesting is that the four types of algorithmic time have largely developed with worker status in mind: for example, algorithmic pace-rates are a way of ensuring that employers extract the most from workers during their periods of work; monitoring contested time is a way of addressing procrastination at work; and temporal discipline is lastly a way of motivating those workers with guaranteed hours.

These developments stem from the fact that most working time regulations for workers concern the *duration* of time, not the *distribution* of time. It is this point to which this chapter now turns, by examining the main EU instrument on working time – the Working Time Directive.

Working Time Directive

Introduced in 1993, the Working Time Directive (WTD) was 'enormously controversial'.[16] The UK (unsuccessfully) challenged the lawfulness of the directive,[17] labelling the legislation an 'abuse of the treaty' and claiming to have 'drawn most of its teeth'.[18]

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[16] European Industrial Relations Review, 'EC Working Time Directive Common Position' (EIRR 1990) 235.15.

[17] Case C-84/94 *United Kingdom of Great Britain and Northern Ireland v Council of the European Union* [1996] ECLI:EU:C:1996:431.

[18] As stated by David Hunt, the then Secretary of State for Employment: Julia Lourie, 'Working Time Directive - Research Briefing, UK Parliament' (House of Commons Library 1996) 32. The Conservative government at the time was adamantly against the introduction of working time limits and argued that the EU had overstepped its competences in introducing the directive.

The controversy is reflected in the directive itself. The outcome has been a perplexing contrast of relatively weak provisions, due to the inclusion of opt-outs and derogations, alongside fiercely guarded entitlements of 'fundamental' importance in EU social law, as developed by the CJEU. [19]

Drafted over thirty years ago when employment relationships were 'more homogeneous and standardised',[20] the WTD has struggled to address the subsequent rise in flexible models of working time. This is because the WTD is built around the concept of a standardised, 9-to-5 employee with a regular schedule.[21] Whilst there have been attempts to modernise the WTD, along with multiple Interpretative Communications issued by the Commission,[22] the WTD's implicit focus on preventing overtime remains.

Algorithmic time brings these shortcomings into sharp relief. By relying upon the standard model of working time, the majority of the WTD's provisions struggle to address the ways in which algorithmic management re-organises time. The exception to this, however, is Article 13 WTD which does not concern the standard model of time but rather 'patterns' of working time. This therefore marks it out as the most promising

[19] For example, Cases C-569/16 and C-570/16 *Stadt Wuppertal v Maria Elisabeth Bauer and Volker Willmeroth v Martina Broßonn* [2018] ECLI:EU:C:2018:871 para 58, in regards to Article 7 WTD, and Case C-585/19 *Academia de Studii Economice din Bucureşti v Ministerul Educaţiei Naţionale* [2021] ECLI:EU:C:2021:210 paras 36-7, in regards to Article 3 WTD.

[20] Commission, 'Interpretative Communication on Directive 2003/ 88/ EC of the European Parliament and of the Council Concerning Certain Aspects of the Organisation of Working Time' [2017] OJ C165/1, para A.

[21] See Bogg (n 13) and Antonio Aloisi, 'Integrating the EU Twin (Green and Digital) Transition Synergies, Tensions and Pathways for the Future of Work' (JRC Working Papers 2025) for analysis of the limitations of WTD in addressing non-standard models of time.

[22] Commission (n 20); Commission, 'Interpretative Communication on Directive 2003/88/EC of the European Parliament and of the Council Concerning Certain Aspects of the Organisation of Working Time 2023/C 109/01' [2023] OJ C109/1.

provisions in within the WTD for regulating algorithmic time. These points will now be elaborated upon further.

Continuous Stretches of Working Time

The majority of the provisions in the WTD guarantee *breaks* for workers. This includes a daily rest (Article 3), break after six hours (Article 4), weekly rest (Article 5) annual rest (Article 7), as well as a cap on weekly hours (Article 6).

By guaranteeing breaks, the purpose is to prevent excessive periods of working long, continuous hours. However, for workers where algorithmic management is deployed, this is only part of the problem. As a result, several have argued that the WTD is architecturally unfit to address time on the platform economy[23] or algorithmic management more generally.[24]

For example, content review cloud-work features microtasks lasting seconds. This renders the right for a break after six hours under Article 4 more hypothetical than practical,[25] and challenges the necessity of an uninterrupted daily break of 11 hours under Article 3 if tasks are completed sporadically. Even the premise of calculating working time over a reference period under Article 16 is potentially cumbersome for microtasks.

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[23] Antonio Aloisi and others, 'An Unfinished Task? Matching the Platform Work Directive with the EU and International "Social Acquis"' (ILO Working Paper 2023); Davies (n 14) similarly questions its applicability to the gig economy.

[24] Aloisi (n 21).

[25] Davies (n 14).

These rights to rest breaks can be derogated from under Article 17 on the basis of the specific characteristics of the activity, the fact that the duration of time is unmeasurable, or that the time is determined by the worker. This again is problematic in the context of algorithmic time, which is premised on the constant measuring of time. As a senior director at UPS, the delivery courier giant, stated in defence of AI systems, 'just one minute per driver per day over the course of a year adds up to $14.5 million'.[26] Thus, regarding algorithmic time as 'not measurable' under Article 17 conflicts with one of the functions of algorithmic time, which is the meticulous measuring of time. Secondly, it would be contrary to the WTD's purpose if the 'specific characteristics' of algorithmic time – ie. the fragmentation of jobs into distinct tasks to avoid continuous labour costs[27] – was held as the reason for derogation from working time protections. The WTD's reliance on breaks, and its broad derogations, therefore limit its ability to regulate algorithmic time.

Binary distinction between working and rest time

The second assumption made by the WTD that algorithmic time challenges is the distinction between working time and rest time under Article 2. The WTD presents working time – the 'period during which the worker is working, at the employer's disposal and carrying out his activities or duties'[28] – as mutually exclusive from residual rest periods – the 'period which is not working time'.[29] Under the standard

[26] Moritz Altenried, 'On the Last Mile: Logistical Urbanism and the Transformation of Labour' (2019) 13 Work Organisation, Labour & Globalisation 114, 120.

[27] As described by Agnieszka Piasna, 'Algorithms of Time: How Algorithmic Management Changes the Temporalities of Work and Prospects for Working Time Reduction' (2023) 48 Cambridge Journal of Economics 115.

[28] WTD, Article 2(1).

[29] WTD, Article 2(2).

model of working time, the division between working and rest time is relatively uncontroversial. Significant difficulties, however, have arisen in the context of on-call work, where the CJEU has had to adjudicate on the dividing line between working time and rest time.[30]

The phenomenon of contested time reignites this debate to a new degree. To give an example of this, Instacart is a grocery shopping platform which penalises workers who turn down a gig by essentially freezing their account for four minutes to prevent them from accessing other gigs.[31] In this scenario, the CJEU's existing case law struggles because these are not constraints on free time and personal interests, but constraints on access to paid (working) time.[32] This inverts the WTD's starting assumption that regulation should be preventing overtime, not regulating involuntary free time.

Even the concept of being 'at the employer's disposal' under the Article 2(1) definition of working time is challenged by contested time, as acts such as scrolling through the platform for gigs or driving 'dead miles' on ride-hailing platforms[33] still actively generates useful data analytics for the employer. Whilst it may not appear that

[30] Chapter 6 discusses the case law in depth, with key cases being Case C-303/98 *SIMAP v Conselleria de Sanidad y Consumo de la Generalidad Valenciana* [2000]ECLI:EU:C:2000:528; Case C-151/02 *Landeshauptstadt Kiel v Norbert Jaeger* [2003] ECLI:EU:C:2003:437; Case C-518/15 *Ville de Nivelles v Rudy Matzak* [2018] ECLI:EU:C:2018:82.

[31] Kathleen Griesbach and others, 'Algorithmic Control in Platform Food Delivery Work' (2019) Socius 5.

[32] See footnote 30.

[33] James Duggan and others, 'Algorithmic Management and App-work in the Gig Economy: A Research Agenda for Employment Relations and HRM' (2020) 30 Human Resource Management Journal 114.

the worker is 'carrying out his activities or duties' under Article 2(1), the employer is still deriving a benefit from the 'datafication of labour'.[34]

Moreover, the CJEU's case law places significant importance on physical manifestations of constraints (such as a location radius), which is obsolete when dealing with online crowdwork.[35] This is particularly concerning for contested time arising in the context of homeworkers facing keystrokes tracking or in-built screen cameras[36] to identify unproductive time. If the homeworker is found to be doing leisure activities during working hours, then the CJEU's current case law would arguably struggle to respond given the emphasis on the home as the key indicator for unconstrained time. The implications of this would be significant, from the incentive for monitoring to the reversal of the (previously) implicit assumption that some working time is non-productive, so-long-as the worker is at the employers' premises. The full implications and case law behind this are discussed in more depth in Chapter 6.

Remuneration

A further challenge with the WTD, when it comes to regulating algorithmic time, is its treatment of remuneration as a separate issue to working time.

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[34] Uma Rani and others, 'Is Flexibility and Autonomy a Myth or Reality on Taxi Platforms? Comparison between Traditional and App-Based Taxi Drivers in Developing Countries' in Valerio De Stefano and others (eds), *A Research Agenda for the Gig Economy and Society* (Edward Elgar 2022) 170.

[35] Frank Hendrickx, 'Regulating Working Conditions through EU Directives – EU Employment Law Outlook and Challenges' EMPL Committee Briefing 2019).

[36] A phenomenon described in Katherine Kellogg and others, 'Algorithms at Work: The New Contested Terrain of Control' (2020) 14 Academy of Management Annals 366.

In order to largely circumvent a veto by the UK, the directive was adopted under the narrower treaty basis of protecting workers' health and safety, rather than the broader basis of working conditions.[37] This, combined with the fact that the EU lacks the competency to regulate pay under Article 153(5) TFEU, has led the CJEU to reiterate that time classified as working time for the purposes of the WTD does not need to be remunerated.[38] This is not in itself problematic as wage and working time regulation have differing objectives.[39] However, algorithmic management heightens the interdependence of payable time and working time through the phenomena of contested time and dynamic scheduling.

'Multi-apping', for instance, arises from the use of dynamic scheduling and contested time in platform work. Since gigs are unpredictable with variable pay, platform workers may use multiple apps simultaneously to maximise their income.[40] However, by doing this, the worker potentially undermines the likelihood that the contested time spent waiting for gigs is classified as working time, since the worker is working for *multiple* employers (an issue alluded to by the UK Supreme Court[41]). Yet, the distinction between working time and remunerated time fuels the need for platform workers to use multiple apps in the first place, because the classification as working time does not guarantee it as paid time.

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[37] Agnieszka Piasna, 'Regulating Uncertainty: Variable work schedules and zero-hour work in EU employment policy' (ETUI Policy Brief 2019) 3.

[38] Case C-266/14 *CCOO v Tyco Integrated Security* [2015 ECLI:EU:C:2015:578 paras 48-9; Case C-344/19 *DJ v Radiotelevizija Slovenija* [2021]ECLI:EU:C:2021:182 paras 57-58; C-909/19 *BX v Unitatea Administrativ Teritorială D* [2021] ECLI:EU:C:2021:89, paras 31-33.

[39] ACL Davies, 'Getting More than You Bargained for? Rethinking the Meaning of "work" in Employment Law' (2017) 46 Industrial law journal 477, 496.

[40] Cosmin Popan, 'The fragile 'art' of multi-apping: Resilience and snapping in the gig economy' (2023) 56 Environment and Planning A 802.

[41] *Uber BV and others v Aslam and others* [2021] UKSC 5 [2018] EWCA Civ 2748 [135].

From a health and safety perspective, it is arguably only possible to regulate a maximum working duration if those hours provide for a viable income. The CJEU has established Article 7 WTD, the right to paid annual leave, as a fundamental social right on the basis that workers must actually be able to derive the benefit of the holiday.[42] The same logic could be extended to the situation where working time is organised deliberately so that workers spend their unpaid time securing or fulfilling their working time, since otherwise they are deprived of the benefit of daily and weekly rest breaks. This is illustrated by platform workers who describe how any time spent not searching for gigs is seen as financial loss rather than free time,[43] thus nullifying the benefits of a rest period guaranteed in the WTD.

Article 13 WTD

So far, this section has illustrated how the WTD is built upon a series of assumptions, which are based on the standard model of working time. This includes the assumption that: workers will be working in continual stretches (hence the need for a break), working time is clearly distinguishable from rest time (hence the mutually exclusive categorisation), schedules will be regular (hence the reliance on weekly rests), working time is straightforward to measure in hours (hence the quantification of 48 hours per week), and remuneration is a separate issue to working time (hence the silence on pay). Whilst the CJEU has shown a willingness to creatively develop the WTD provisions –

[42] Case C-173/99 *The Queen v Secretary of State for Trade and Industry, ex parte BECTU* [2001] ECLI:EU:C:2001:356.

[43] Pierre Bérastégui, 'Exposure to Psychosocial Risk Factors in the Gig Economy: A Systematic Review' (ETUI 2021)

as mentioned previously, it has staunchly protected annual leave under Article 7 – the focus remains implicitly on the standard model of working time.

Against this backdrop, Article 13 WTD stands out the key provision which departs from this emphasis on standardised durations of working time by instead addressing 'patterns' of working time.[44] Unlike other provisions which concern the duration of time, Article 13 addresses the distribution or organisation of working time. The provision states that:

> 'Member States shall take the measures necessary to ensure that an employer who intends to organise work according to a certain pattern takes account of the general principle of adapting work to the worker, with a view, in particular, to alleviating monotonous work and work at a predetermined work-rate, depending on the type of activity, and of safety and health requirements, especially as regards breaks during working time.'[45]

The provision is therefore concerned with how work is organised and how this affects workers, rather than its length and the impact of excessive hours. As a result, Article 13 WTD has been consistently pointed to as critical to addressing alternative models of time. Aloisi, for example, argues that whilst 'current working time

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[44] Chapter 3 of the WTD, titled 'Night work – Shift work – Patterns of work', covers Articles 8 – 13. Bercusson notes that, despite the title of Chapter 3, there is 'little specific regulation of shift work. Instead there is in this Section only the general provision' of Article 13. This is because Article 12 states only that 'shift workers should have safety and health protection appropriate to the nature of their work'. This contrasts with the Commission's first draft which stated that 'the scheduling and total length of breaks for rotating shift workers… shall take account of the more demanding nature of those forms of working time': see Brian Bercusson, *European Labour Law* (Butterworths 1996) 323 – 324.

[45] Directive 2003/88/EC of 4 November 2003 concerning certain aspects of the organisation of working time [2003] OJ L299/9, Article 13.

legislation is inadequately attuned to today's world of work', new solutions 'such as revisiting the underutilised and often overlooked provision on 'patterns of work' are necessary'.[46] Kártyás similarly argues that the 'enigmatic' Article 13 may likely be 'invoked in the near future, precisely in cases triggered by digitalisation' because of its emphasis on workers' perspectives.[47]

Despite its relevance, however, the provision itself remains largely undeveloped. There is no definition of 'patterns of work' in the WTD[48] and there has not yet been a substantive CJEU decision on Article 13.[49] The task of interpreting the provision, including identifying the principle's origins, drafting history and related case law, is undertaken in the following chapter. For now though, the purpose of this section is to highlight the relevance of Article 13 against the backdrop of limited WTD provisions, in order to make the case for developing it as a key regulatory response to algorithmic time.

Having examined the WTD predominantly through the lens of the first thematic criticism of this chapter – (i) implicit reliance on standard models of time – attention now turns to examining other EU instruments. The Transparent and Predictable

[46] Aloisi (n 21) 26 -28.

[47] Gábor Kártyás, 'Less Human but More Effective?' (2024) Pázmány Law Review 67, 76 - 78

[48] Although note that aspects feature in the definition of shift work in Article 2(5) WTD: '"shift work" means any method of organising work in shifts whereby workers succeed each other at the same work stations according to a certain pattern, including a rotating pattern, and which may be continuous or discontinuous, entailing the need for workers to work at different times over a given period of days or weeks'. 'Work Pattern' has been defined in Article 2(a) of the Transparent and Predictable Working Conditions Directive (n 6) as 'means the form of organisation of the working time and its distribution according to a certain pattern determined by the employer', discussed further in Chapter 7. 'Patterns of working time', found in Recital 20 of the Framework Directive for Equal Treatment in Employment (n 11) was defined in Joined Cases C-335/11 and C-337/11 *HK Danmark, acting on behalf of Jette Ring v Dansk almennyttigt Boligselskab* [2013] ECLI:EU:C:2013:222 paras 51-55 as 'such matters as the organisation of the patterns and rhythms of work, for example in connection with a production process, and of breaks' but that the legislature did not 'appear… to limit the concept… to such elements'.

[49] See Chapter 3 for an examination of related case law.

Working Conditions Directive was designed to address some of the shortcomings of the WTD, making it the logical instrument to examine next.

Transparent and Predictable Working Conditions Directive

Implemented in August 2022, the impact of the Transparent and Predictable Working Conditions Directive is still to be determined and there has only been one CJEU ruling so far.[50] Whilst the directive has been described as a 'regulatory paradigm shift' due to its attention to non-standard work,[51] it can equally be criticised for promising more than it can deliver.

The purpose of the directive was to modernise the earlier Written Statement Directive[52] and improve upon the WTD by addressing increasing forms of non-standard employment.[53] To do this, the directive provides workers with the right to a list of information concerning the employment relationship. For workers with unpredictable schedules, this includes information about the number of guaranteed hours within a reference period and the qualified rights to refuse work assignments and request more predictable working conditions. Article 11 also requires Member States to take measures to avoid abusive uses of on-demand contracts.

[50] *BX* (n 38) which examined whether workplace training constituted working time. Case C-249/24 *RT, ED v Ineo Infracom* [2025] ECLI:EU:C:2025:202, Opinion of AG Norkus refers in passing to the Transparent and Predictable Working Conditions Directive to state that the place of work constitutes an essential element of the employment contract.

[51] Aloisi and others (n 23) 29.

[52] Council Directive 91/533/EEC of 14 October 1991 on an employer's obligation to inform employees of the conditions applicable to the contract or employment relationship [1991] OJ L288/32.

[53] Elisa Chieregato, 'A Work-Life Balance For All? Assessing the Inclusiveness of EU Directive 2019/1158' (2020) 36 International Journal of Comparative Labour Law and Industrial Relations 59, 13.

In the following section, it will be argued that the Transparent and Predictable Working Conditions Directive has the potential to address some of the challenges posed by algorithmic time, however, there are three underlying tensions within the directive that limit its ability to effectively do so. These are the directive's retained flexibility, which risks neglecting the most vulnerable; the universality of the directive, which misses the complexities of algorithmic time; and the directive's over ambitious beginning, which gives rise to disappointment. In turn, these points fall under the two thematic criticisms of this chapter: (i) implicit reliance on standard models of time, and (ii) overreliance on procedural rules. This will now be elaborated upon below.

Retained Flexibility

There is a continual tension within the directive to ensure both flexibility and predictability, as seen in Recital 6 which states that the Union aims to guarantee 'an adequate degree of transparency and predictability …, while maintaining reasonable flexibility of non-standard employment'. Bednorawicz notes that this is unfortunate as it generates a balancing exercise between the two which is not required under the directive's legal basis of Article 153(2)(b) TFEU.[54] The Commission's Explanatory Memorandum states that employers may risk 'losing some flexibility at the margin'[55] which arguably reflects the directive's retention of work which is flexible at its core, having only addressed precariousness at the fringes.

[54] Bartłomiej Bednarowicz, 'The Tale of Transparent and Predictable Working Conditions Intertwined with Work-Life Balance: Assessing the Impact of the New Social Policy Directives on Decent Working Conditions and Social Protection' (2020) 22 European Journal of Social Security 421, 424.

[55] Commission, 'Explanatory Memorandum: Proposal for a Directive on Transparent and Predictable Working Conditions in the European Union' (2017) COM(2017) 797 final 3.

For instance, whilst the directive aims to address platform work, the Commission's Expert Group have held that Article 4(2)(m), which applies to workers with 'unpredictable' schedules, does not apply to workers who freely determine the distribution of working time.[56] Interpretation then rests upon whether working time is 'freely' determined, which risks marginalising many platform workers who, as found in multiple qualitative studies,[57] do appreciate some of the flexibility offered by platform work.

Article 11 is supposed to act as the safety net in such a scenario, and is often highlighted as the most important provision for platform workers,[58] since it requires Member States to take complementary measures to prevent abuses of on-demand contracts, which could include a rebuttable presumption of employment.

However, even if Member States choose to adopt this measure, worker status is not a panacea for the working time challenges platform workers face. The directive does not address gaps left by the WTD on the distinction between working and rest time, for instance. Whilst the use of the word 'actual' working time in Article 1(3) may allude to the issue of contested time (since it implies there is an alternative type of working time), the Italian, Spanish and French translations of the directive have not

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[56] European Commission, 'Report Expert Group: Transposition of Directive (EU) 2019/1152 on Transparent and Predictable Working Conditions in the European Union' (Publications Office of the European Union 2021) 34.

[57] Particularly female platform workers: Griesbach and others (n 31); Haley Kwan, 'Women's Solidarity, Communicative Space, the Gig Economy's Social Reproduction and Labour Process: The Case of Female Platform Drivers in China' (2022) 48 Critical Sociology 1221; Ruth Milkman and others, 'Gender, Class, and the Gig Economy: The Case of Platform-Based Food Delivery' (2021) 47 Critical Sociology 357.

[58] Antonio Aloisi, 'Commoditized Workers: Case Study Research on Labour Law Issues Arising from a Set of "On-Demand/Gig Economy" Platforms' (2016) 37 Comparative Labor Law & Policy Journal 653, 15.

given significance to it.[59] Given the competency restrictions around pay, the directive also does not substantively address the issue of remuneration for working time.[60] Without this, however, it becomes difficult for the directive to fully address predictable working conditions. Some labour platforms, for example, require workers to mark their availability in time slots, but the income can vary depending on the gigs that appear within that period.[61] Hence, predictable shift allocation cannot be achieved if the same predictability cannot be guaranteed for remuneration, which remains with Member States.

Universality – default of standard employment

The second overarching challenge of the Transparent and Predictable Working Conditions Directive is that it aims to be universally applicable, capturing 200 million EU workers.[62] As a result, the broadness of the directive inevitably limits its capacity to address the nuanced challenges of algorithmic time.

In order to accommodate such a breadth of workers, the directive perceives itself from the vantage point of the standard employee facing overtime. This is evident from Article 4(2)(m) and Article 10, which focus on when the worker is 'required' to work and able to reject work, rather than addressing the contrasting challenge of

[59] Vincenzo Ferrante, 'Between Health and Salary: The Incomplete Regulation of Working Time in European Law Special Issue on Matzak' (2019) 10 European Labour Law Journal 370, 382.

[60] It does, however, require compensation for the cancellation of an assignment outside of reference period in Article 10, suggesting some limited scope for discussing payment for working time.

[61] Lauren Thompson, 'Striking a Balance: Extending Minimum Rights to U.S. Gig Economy Workers Based on E.U. Directive 2019/1153 on Transparent and Predictable Working Conditions Notes' (2021) 31 Indiana International & Comparative Law Review 225, 241.

[62] Commission Staff, 'Impact Assessment Accompanying the Proposal for a Directive on Transparent and Predictable Working Conditions' (2017) Working Document.

involuntary free time (or ‘hours’ famine’[63]). The directive’s reference to ‘crosses the threshold’ in Recital 11 further illustrates this, as does the way working time is characterised in shifts, given that reference periods are conceived as hours or days in Article 2(b). This results in the awkward funnelling of gigs into the conventional model. For example, Ivanova and others reported that platform food delivery workers classified as employees had more ‘risky’ schedules than the self-employed platform delivery workers in the same city because unwanted shifts were automatically given to employees if the guaranteed number of hours had not been met.[64] By attempting to usher working time arrangements into standard employment models, the directive is arguably a blunt tool for addressing the nuanced issues of platform work.

The Transparent and Predictable Working Conditions Directive’s default reliance on the standard employment model is also a challenge for workers in traditional retail or hospitality sectors where algorithmic scheduling software (a form of dynamic scheduling discussed in Chapter 1) is deployed. If schedules are based on real-time ‘granular fluctuations’ in expected demand,[65] then this is likely to be classified as an ‘unpredictable’ work pattern. Under Article 4(2)(m), the worker must then be informed of the guaranteed number of paid hours and remuneration for work performed in addition to those hours within a reference period, along with the minimum notice before starting work and the deadline for cancellation. This is fortified by Article 10, which provides the right for the worker to refuse an assignment under certain

[63] Cristina Inversi, ‘Exploring the Concept of Regulatory Space: Employment and Working Time Regulation in the Gig-Economy’ (PhD Thesis, University of Manchester 2018) 21.

[64] Mirela Ivanova and others, ‘The App as a Boss? Control and Autonomy in Application-Based Management’ (Arbeit, Genzen, Fluss 2018) 15.

[65] Alexandra Mateescue and Aiha Nguyen, ‘Algorithmic Management in the Workplace’ [2019] Data & Society, 10.

conditions and for compensation if the employer cancels an assignment after a reasonable deadline.

The significance of these provisions rests on the transposition in each Member State. The directive does not specify a minimum number of hours, what a 'reasonable' notice period or deadline is, nor does the directive explicitly require that remuneration should be higher for hours outside the reference hours and days (this is merely implied in Article 4(2)(m)(i)).

As a result, an employer could inform the worker of a very minimal number of guaranteed paid hours with no additional remuneration for additional hours outside of this, and still be compliant with the directive. The worker could then be regularly working significantly above these hours without the benefit of predictability or higher remuneration. In such a situation, the worker likely would fare better if they had *not* been informed in the first place, as they would be entitled to a favourable legal presumption under Article 15, which may likely be based on their actual hours worked.

Moreover, the Transparent and Predictable Working Conditions Directive does not provide for fair shift allocation; whilst the worker should be informed of 'how' their working time is established under Recital 21, the directive does not address the issue of shift allocation. For example, Article 10(2) prevents adverse consequences for rejecting an assignment under certain conditions, but it is ultimately an *ex-post* measure which does not impose obligations on the initial organisation of shifts. Where employers determine shift allocation based on customer rankings or other forms of temporal disciplining, the ability to refuse a shift captures only half the picture.

These issues are missed precisely because the Transparent and Predictable Working Conditions Directive is built from the vantage point of a standard employee, in which access to work is not an issue. Shift preferability may seem like an excessive imposition on the employers' flexibility when considered from the perspective of a standard employee, however, for workers whose work is defined by unpredictable schedules it appears a fair exchange for the employers' flexibility.

The lack of normative obligation for worker-considerate scheduling means the directive leaves it as a managerial choice for each company. Algorithmic scheduling software, for example, can placed along a 'spectrum of purely creating value for management and purely creating value for workers':[66] the directive does not regulate where on the spectrum such discretion should fall. As a result (and as discussed further in Chapter 7) this leaves Article 13 WTD as the key provision for providing normative guidance on scheduling.

Over ambitious

Ultimately, many of the Transparent and Predictable Working Conditions Directive's challenges stem from the fact that it is torn between being simply an updated version the Written Statement Directive, to being a key piece for promoting the European Pillar of Social Rights (Pillar).[67] Despite being 'much more than a follow-up' to the Written

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[66] Ethan Bernstein and others, 'How to Manage Scheduling Software Fairly' *Harvard Business Review* (2 September 2014) <https://hbr.org/2014/09/how-to-manage-scheduling-software-fairly> accessed 14 February 2023.

[67] Interinstitutional Proclamation on the European Pillar of Social Rights [2017] C 428/09.

Statement Directive,[68] the EU lacks some of the legal competences needed to deliver on the Pillar. Competency tensions were apparent in the heated debates over the 'hybrid' employment status provision which allows for Member States to define worker status in consideration of the CJEU's case law,[69] along with the limited reference to remuneration in the directive (due again to the prohibition in Article 153(5) TFEU). For instance, legitimising multiple jobs under Article 9 could lead to work intensification;[70] had the provision also addressed fair remuneration then the issue may have been approached more holistically. Similarly, although the worker has the procedural right to be informed of their working time, the directive does not offer substantive guidance on how working time should be fairly allocated.

Whilst the directive's name - 'transparent and predictable' – does not promise fairness nor decent work, the preamble's references to Article 31 Charter and the Pillar allude to more than the name can deliver. Given that the directive does not substantively engage with the employers' prerogative to allocate work, the directive's dual purpose means it starts life with its hands tied.

To conclude, the Transparent and Predictable Working Conditions Directive fills in some of the gaps in the WTD by addressing the issue of when – not how long – workers are expected to work. However, both instruments still suffer from the first thematic critique, in that they (i) implicitly rely on the standard model of time, by

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[68] Ferrante (n 59) 378.

[69] Article 1(2), as discussed in Antonio Aloisi and Nastazja Potocka-Sionek, 'De-Gigging the Labour Market? An Analysis of the "Algorithmic Management" Provisions in the Proposed Platform Work Directive' [2022] Italian Labour Law e-Journal 29, 15.

[70] Antonio Aloisi, 'Platform Work in Europe: Lessons Learned, Legal Developments and Challenges Ahead' (2022) 13 European Labour Law Journal 4.

focusing on overtime or employment status rather than tackling issues of fairness in the organisation of time. Moreover, in addressing transparency and predictability rather than other normative standards, the directive also falls foul of the second thematic critique of this chapter, the (ii) reliance on procedural rules without substantive guidance. By not addressing these points, the directive places significant weight back onto Article 13 WTD as the main regulatory provision for addressing the issues arising from algorithmic time.

Analysis now turns to examining the potential regulatory capacity of the EU's Framework Directive on Safety and Health which, whilst not focused on working time, could potentially address some of the health implications of algorithmic time.

Framework Directive on Safety and Health

Introduced in 1989, the Framework Directive on Safety and Health[71] was a major turning point in the EU's regulation of workplace health and safety.[72] The directive outlines broad principles, rather than technical standards, which can be shaped to national contexts.[73] As the 'heart' of Europe's health and safety approach,[74] the

[71] Framework Directive on Safety and Health (n 7).

[72] Aude Cefaliello and Ninon Henry, 'The Influence of the Court of Justice on EU Health and Safety Legislation: An Analysis of the Case Law (1989-2022)' (ETUI 2025).

[73] Aude Cefaliello, 'Towards an Improvement of the Legal Framework Governing Occupational Health and Safety in the European Union' (PhD Thesis, University of Glasgow 2020).

[74] Cefaliello and Henry (n 72) 5.

directive establishes an overarching framework which has subsequently been developed through 25 implementing directives (one of which is the WTD).[75]

This section highlights how the Framework Directive on Safety and Health offers significant potential in addressing the harms arising from algorithmic time, however, it is held back by its ambiguous coverage of psychosocial risks and its reliance on risk assessments which are limited in the context of working time. The section goes on to argue that the development of the humanisation principle, found in Article 6(2)(f) of the Framework Directive on Safety and Health and Article 13 WTD, could assist in overcoming these limitations.

The Framework Directive on Safety and Health is largely divided into the employers' obligations (Section II) and the workers' obligations (Section III). The main clauses, Articles 5 and 6, impose a duty on employers to 'ensure the safety and health of workers in every aspect related to the work' on the basis of nine 'general principles of prevention'. This includes the principle of 'adapting work to the individual' under Article 6(2)(f), which is virtually identical to Article 13 WTD.

Physical harms arising from algorithmic time are therefore likely regulated by the Framework Directive on Safety and Health. Whilst Article 5 does not impose strict liability on employers for physical injuries,[76] it does require employers to exercise 'all

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[75] Victor Martinez Garzon and Monika Makay, 'Health and Safety at Work' (European Parliament Factsheets 2025) <https://www.europarl.europa.eu/factsheets/en/sheet/56/health-and-safety-at-work> accessed 12 October 2025.

[76] Case C-127/05 *Commission v United Kingdom of Great Britain and Northern Ireland* [2007] ECLI:EU:C:2007:338.

due care'[77] with regards to 'all risks'.[78] In instances where excessively fast algorithmic pace-rates result in foreseeable physical harm, for example, this would likely be caught under Article 5. This point is discussed in more depth in Chapter 6, where Amazon's use of algorithmic pace-rates in the United States has led to numerous allegations of health and safety violations.

The extent to which the duty protects against detrimental *mental* health impacts arising from algorithmic time is more disputable. The debate predominantly rests upon the 'highly political' issue of psychosocial risks,[79] which are 'those aspects of work design and the organisation and management of work, and their social and environmental contexts, which have the potential for causing psychological, social or physical harm'.[80] The question is whether an employer's responsibility ought to extend to these harms under the Framework Directive on Safety and Health.

The CJEU recently remarked in passing that, under Articles 5(1) and 6, 'employers are obliged to … prevent all risks… which includes certain psychosocial risks, such as stress or burnout'.[81] These comments strike a major turning point over persistent uncertainty as to the directive's scope. Former interpretative guidance by the Commission stated that whilst Article 5 should include mental health, its coverage of psychosocial risks was 'considerably uncertain' without a specific implementing

[77] Framework Directive on Safety and Health, Article 5(4).

[78] Case C-49/00 *Commission of the European Communities v Italian Republic* [2001] ECLI:EU:C:2001:611 paras 12-13.

[79] Anne Helbo Jespersen and others, 'The Wicked Character of Psychosocial Risks: Implications for Regulation' (2016) 6 Nordic Journal of Working Life Studies 23, 25.

[80] Tom Cox and others, 'Research on Work-Related Stress' (Official Publications of the European Communities 2000) 14.

[81] *Radiotelevizija* (n 38) para 62.

measure.[82] There is very limited discussion of mental health in any implementing directive, the main example being the reference to 'problems of mental stress' in the Display Screen Equipment Directive,[83] and despite psychosocial risks having been identified as a key area for further action, there has been no consensus over the form of action. [84]

Notably, however, the general principle of 'adapting work to the individual' in Article 6(2)(f) Framework Directive on Safety and Health has been highlighted as the key principle to endorse psychosocial risk prevention.[85] This could then provide an avenue for protecting against potential harms like anxiety, stress, boredom, isolation, and loss of autonomy resulting from dynamic scheduling or contested time, for example. Without the inclusion of psychosocial risks within the health and safety regime, it would otherwise be difficult to mitigate against the impacts of algorithmic time. This is because the harms caused by working time organisation are rarely physical, but usually intangible, like cancelled plans, disrupted social lives, missed family events. Developing the potential of humanisation of work principle is therefore critical if these unconventional harms are to be addressed.

[82] Commission Staff, 'Ex-Post Evaluation of the European Union Occupational Safety and Health Directives (REFIT Evaluation)' (2017) SWD(2017) 10 final 6. The Briefing requested by the European Parliament EMPL Committee also called for clarity over whether Article 5(1) included psychosocial risks: David Cabrelli and Richard Graveling, 'Briefing Requested by the EMPL Committee: Health and Safety in the Workplace of the Future' (European Parliament 2019).

[83] Council Directive 90/270/EEC of 29 May 1990 on the minimum safety and health requirements for work with display screen equipment [1990] OJ L156/14, Article 3(1). As highlighted in Aude Cefaliello, 'Psychosocial Risks in Europe: National Examples as Inspiration for a Future Directive' (ETUI 2022), who also points to the Autonomous Framework Agreements on Stress (2004), and Harassment (2006) as other sources of (non-legislative) psychosocial risk protection.

[84] Stavroula Leka, 'Peer Review on "Legislation and Practical Management of Psychosocial Risks at Work": A Critical Evaluation of the EU Policy Context' (Publications Office of the EU 2019).

[85] Stavroula Leka and others, 'Evaluation of Policy and Practice to Promote Mental Health in the Workplace in Europe' (Publications Office of the EU 2014) 47. Similar remarks were made in Leka (n 84), as well as at an ILO level in reference to Convention 155, Article 5(b): ILO, 'Workplace Stress: A Collective Challenge' (ILO 2016)11.

The uncertainty over the Framework Directive on Safety and Health's coverage of psychosocial risks is an issue which ties into the second limitation in the directive's ability to regulate algorithmic time. Risk assessments are the core regulatory technique promoted by the Framework Directive on Safety and Health for ensuring safe and healthy workplaces. Whilst vital, risk assessments are not necessarily appropriate for regulating the psychosocial risks associated with algorithmic time. There are four predominant reasons for this.

First, there is a perception that psychosocial risks are an 'advanced subset' of occupational health and safety issues.[86] This implies that measures taken to address psychosocial risks are desirable rather than indispensable, meaning that hard-fought labour rights may need to be re-couched as necessary for health. For instance, the CJEU has held previously held that that provisions to prioritise Sundays as a day of rest could not be regarded as health measures,[87] despite the wellbeing benefits that may be derived from shared time off as a community. Following this, an employer could argue that they would not need to mitigate against the risks of dynamic scheduling leading to a worker consistently working without weekends off because it is not a health and safety concern. Moreover, given that the duty to ensure health and safety can be qualified to 'only so far as is reasonably practicable',[88] it runs the risk of inviting an economic analysis of rights previously fought for.

[86] Leka (n 84) 29.

[87] *UK v Council* (n 17).

[88] *Commission v UK* (n 76) para 1.

Second, the structure of risk assessments do not lend themselves to psychosocial risks. Risk mitigation tends to take a 'linear', 'one-time' approach and often focuses on high-level,[89] not 'novel', 'low-level', risks associated with mental health.[90] The corresponding actions to mitigate such risks are also premised within the confines of occupational health and safety law, with examples like personal protection equipment or safety warnings. Harms associated with algorithmic time, however, will likely be ongoing (for instance, the inability to plan time outside of work) and unknown (teleworking and platform crowdwork, for instance, are relatively under-researched). Actions to address these harms will likely need to expand beyond health and safety to other areas of labour law (such as ensuring remuneration for contested time or rules around temporal disciplining). The architectural set up of a risk assessment therefore makes it challenging to fully regulate algorithmic time.

Third, risk assessments tend to induce a preventive litigation mindset, in which the employer focuses on the risks which could lead to liability in court. This therefore places significant pressure on the remedies in national courts around psychosocial harms and heightens the issue of proving causation. If national remedies are dependent upon a medically diagnosed condition, for example, then this potentially leaves considerable leeway for an opportunistic employer to only address psychosocial risks which result in chronic, long-term diagnoses. Calculating remedies for inconsiderate dynamic scheduling – like regularly missing childcare responsibilities – seem unlikely to meet this threshold. The fact that psychosocial risks have been described as a 'wicked

[89] Aude Cefaliello and others, 'Making Algorithmic Management Safe and Healthy for Workers: Addressing Psychosocial Risks in New Legal Provisions' [2023] European Labour Law Journal 10.

[90] ACL Davies and Lisa Rodgers, 'Towards a More Effective Health and Safety Regime for UK Workplaces Post COVID-19' [2023] Industrial Law Journal 34, 14.

problem' without clear causation further complicates this challenge.[91] For example, unpredictable dynamic scheduling may lead to a breakdown of social contact which then worsens an individual's susceptibility to depression, which goes untreated due to a poor public health system. Given the individuality of health, where some workers may be more vulnerable than others, making comparisons between workers' responses to a psychosocial risk is complex and potentially fraught.

A final challenge with the use of risk assessments to address algorithmic time is that it ultimately does not set a normative standard for how working time should be organised. Instead, the employer holds significant discretion in determining what should or should not constitute a risk requiring mitigation. This ties into the points above, as an employer could regard certain harms arising from algorithmic time as an advance subset of issues which to not reach the level of risk necessary for action.

Against this background, there remains a need for regulatory standards on the organisation of time, which is why Article 13 WTD holds such significance. In developing the humanisation principle found in Article 13 WTD (and Article 6(2)(d) Framework Directive on Safety and Health), it could augment some of the limitations around risk assessments for algorithmic time, namely by guiding the employers' discretion, framing humanised schedules as a principle rather than an advanced aspiration and by offering some clarity over the humanisation principle's relationship with psychosocial risks (these points will be developed further in subsequent chapters).

[91] Jespersen and others (n 79).

In sum, this section has drawn predominantly on the third thematic critique of this chapter – the (iii) limitations of using risk assessments to address the risks (notably psychosocial risks) of algorithmic time. Analysis will now turn to a different area of EU law – data protection – which, despite its contrasting focus, still shares similar critique.

General Data Protection Regulation (GDPR)

The GDPR[92] is not designed exclusively to govern employment, but rather data processing in all contexts. However, the GDPR has gained particular significance within the employment context because there is no requirement to prove employment status before accessing the data protection rights. Since algorithmic time invariably involves the processing of personal data, the GDPR is therefore an important EU instrument to examine.

In terms of the protections that the GDPR offers against the use of algorithmic time, these can be divided into two broad categories. The first category refers to procedural rights, such as transparency obligations and human involvement, which achieve the net effect of levelling the playing field by placing individuals back into a similar position as traditional employees. Whilst these procedural limits are an essential first step, they do not challenge the employers' prerogative to determine working time. Such individual data rights are therefore contingent upon secondary provisions in employment law, reflecting the thematic criticism made throughout this chapter concerning the (ii) use of procedural rules.

[92] GDPR (n 8).

The second category of GDPR provisions are those which may substantively address the employer's prerogative over the use of algorithmic time, such as the requirement for 'fair' data processing, a lawful basis, consultation and a data protection impact assessment. However, these rights make limited in-roads into the employers' prerogative because they largely depend upon a worker-protective interpretation which may stretch beyond a data processing viewpoint, and ultimately suffer from the same thematic concerns raised in relation to (iii) the limitations of risk assessments in addressing working time.

These two categories – procedural and substantive provisions – will now be expanded upon using examples of algorithmic time. As with the previous sections, it is argued that Article 13 WTD remains the key regulatory provision which could strengthen these weaknesses within the GDPR.

Procedural limits on use of algorithmic management

The principle of transparency (Article 5(1)(a)), the right to be informed (Articles 12 - 15) and the qualified right to human intervention (Article 22) are important GDPR provisions in governing the procedural use of algorithmic time. However, they are often limited in practice and do not address substantive working time decisions.

For example, workers could rely on Articles 12-15 to request information on how working time decisions, such as automated schedules and algorithmic pace-rates, are determined. With greater clarity on how decisions are made, this would reduce the

contested time spent understanding the system. One platform worker for Postmates, for instance, kept spreadsheets of prices for each gig to help decipher the remuneration system.[93] Improved transparency would also enable individuals to pinpoint specific objections to working time decisions, which may increase the chances of them being resolved.

However, the practicality of the GDPR transparency provisions has been questioned. For instance, it is disputed whether the 'right to an explanation' is included (which may limit a lay persons' ability to comprehend the system),[94] and the lack of collective rights has been criticised since individual resources are limited and harms may not be known without wider data.[95] Although Article 16 does allow for rectification (for example, if inaccurate data suggests an individual was on a break when they were in fact working), there is doubt over whether the provision incorporates a right to have the decision remade.[96]

Even if workers do receive clear information, this is only the first stage. Once workers know how decisions on working time are reached, the next step is to then challenge the use of algorithmic time based on substantive norms. To make full use of the transparency obligations offered by the GDPR, they often need to be used in conjunction with further protective provisions. In such an instance, Article 13 WTD is

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[93] Griesbach and others (n 31).

[94] Marta Otto, 'Workforce Analytics v Fundamental Rights Protection in the EU in the Age of Big Data Data Mining' (2019) 40 Comparative Labor Law & Policy Journal 389.

[95] Jeremias Adams-Prassl and others, 'Regulating algorithmic management: A blueprint' (2023) 14 European Labour Law Journal 124.

[96] ibid.

therefore critical in providing normative guidance on how working time can be organised (this possibility will be demonstrated further in Chapter 6).

Similar criticisms can be levelled at Article 22, which requires human involvement in solely automated decisions which have legal or similarly significant affects. Whilst Article 22 is one of the most notable GDPR provisions, it may have limited impact in the context of algorithmic time. This is because working time allocation, for example through algorithmic scheduling software, may not reach the threshold of 'similarly significant affects' and the amount of human involvement needed to qualify as 'solely' automated may also be disputed.[97] Rulings across Member States are unclear: whilst the Dutch Data Protection Authority held that deactivation of an Uber account in response to a fraud alert did not reach the threshold, an Italian court found that decisions which affected platform workers' chances of making income did reach the threshold.[98] Time worked is closely linked to income received, so working time decisions may be sufficient if the Italian court's line of reasoning persists.

Another challenge workers face is relying on the cumulative impact of automated decisions: an algorithmic pace-rate may not seem significant in isolation, but if a worker must reach repeated speeds every minute, this has a greater impact. Given that Article 22 refers to 'a' decision, this may prove difficult. It could even be argued that involving a human decision-maker could heighten the repercussions of the

[97] These points are discussed in depth in Chapter 7 with related literature and case law. The main CJEU case on Article 22 – Case C-634/21 *OQ v Land Hessen, intervener SCHUFA Holding* [2023] ECLI:EU:C:2023:957 – ultimately offers limited guidance on both points. For discussion, see Adams-Prassl and others (n 96); Asymina Aza, 'Scores as Decisions? Article 22 GDPR and the Judgment of the CJEU in SCHUFA Holding (Scoring) in the Labour Context' (2024) 53 Industrial Law Journal 840; Reuben Binns and Michael Veale, 'Is That Your Final Decision? Multi-Stage Profiling, Selective Effects, and Article 22 of the GDPR' (2021) 11 International Data Privacy Law 319.

[98] Sebastião Barros Vale and Gabriela Zanfir-Fortuna, 'Automated Decision-Making Under the GDPR: Practical Cases from Courts and Data Protection Authorities' (Future of Privacy Forum 2022).

decision:[99] for example, if a workers' account is frozen whilst the dispute over shift allocation is resolved, they may lose income. Moreover, as Binns and Veale highlight, the baseline for determining 'significant' largely rests on expectations:[100] in a working time context, decisions which result in the 'predominantly male' issue of overtime[101] may be considered more significant than decisions which affect female working time norms like denial of leave for childcare.

Even if the threshold was reached, an employer could rely on the exceptions outlined in Article 22(2), most notably that algorithmic decisions over working time may be necessary for the performance of the employment contract.[102] More broadly, the general utility of human intervention in the context of working time can be questioned. Whilst a human manager, unlike an algorithm, can show sympathy towards workers who miss shifts for personal reasons, the GDPR does not guarantee that this will be the case. Since Article 22 does not regulate the substantive decision, the provision is of limited use where the human decision-maker reaches the same decision. Thus, similarly to the transparency provisions, Article 22 requires conjunctive legislation to be fully effective.

These points thus reassert the importance of Article 13 WTD in augmenting the procedural rights. Knowing how a working time decision is reached or securing human involvement will be of most benefit if it can be relied upon in conjunction with Article

[99] Reuben Binns and Michael Veale (n 97).

[100] Reuben Binns and Michael Veale (n 98).

[101] Bogg (n 13) 285.

[102] This point is analysed in depth in Chapter 7.

13's substantive guidance on the distribution of time (as will be demonstrated in Chapters 6 and 7).

Substantive limits on the employers' prerogative

Compared to the procedural limits discussed above, there are some GDPR provisions which govern the decision itself.

An individual could firstly argue that the employer had no legal basis for processing the data used to manage working time under Article 6. However, this seems unlikely to succeed: whilst consent should not be treated as a valid legal basis within an employment relationship,[103] the performance of a contract could be relied upon and the employer's legitimate interests in the 'smooth operation of a business' will almost always be sufficient.[104]

Alternatively, the individual could rely on Article 5 (principles of data processing) to challenge substantive working time decisions. Most of the principles are procedural in nature, for example that data processing must be collected only for legitimate purposes (Article 5(1)(b)) and limited to what is necessary (Article 5(1)(c)). This means that the use of data processing for algorithmic time is not itself in dispute, but the extent of the data used is. By contrast, the principle that data processing must be done 'fairly' under Article 5(1)(a) could be relied upon to substantively shape the

[103] European Data Protection Board, 'Guidelines 05/2020 on Consent under Regulation 2016/679 Version 1.1' (4 May 2020) 9.

[104] Adams-Prassl (n 96) 11. This is interrogated in more depth in Chapter 6, which examines how Article 6(1)(f) could be interpreted in conjunction with Article 13.

employer's prerogative. Data protection authorities appear to be increasingly relying on the principle of fairness, with initial interpretations suggesting the 'principle is generous enough to potentially include imbalances of power and other dimensions'.[105] A Norwegian Data Authority decision, for instance, held that the use of students' school contexts to predict their grades was unfair profiling since it did not correspond to the students reasonable expectations that the grades would reflect their academic achievement.[106] Extending this reasoning, it could be argued that the use of data processing to deploy temporal disciplining is not fair, since workers would expect shifts to be allocated based primarily on their availability, not data on their performance. This resonates with the UK Information Commissioner's guidance, which states that fairness means personal data is handled 'in ways that people would reasonably expect'.[107]

However, the body formerly charged with issuing guidance on EU data protection, the Article 29 Working Party, tended to associate the fairness principle with transparency or lawfulness,[108] which is reflected in recital 38 GDPR, and Malgieri's analysis of fairness across the Member States suggests that it relates to a 'bona fide' balancing of data use between the data subject and controllers.[109] Whilst there have been academic calls for the interpretation of 'fairly' to be given a substantive rather

[105] Barros Vale and Zanfir-Fortuna (n 99) 14.

[106] ibid.

[107] ICO, 'Guidance on AI and Data Protection' (ICO 2022) < https://ico.org.uk/for-organisations/uk-gdpr-guidance-and-resources/artificial-intelligence/guidance-on-ai-and-data-protection/> accessed 13 October 2025.

[108] Gianclaudio Malgieri, 'The Concept of Fairness in the GDPR: A Linguistic and Contextual Interpretation' (ACM Conference, New York, January 2020). The Article 29 Working Party was established by Directive 95/46/EC to provide guidance on data protection: this directive was replaced by the GDPR, which replaced the Working Party with the European Data Protection Board.

[109] Malgieri (n 108).

than procedural meaning,[110] and the European Data Protection Board's discussion of fairness as having an 'umbrella function' does lean towards a wider substantive interpretation,[111] it will ultimately depend upon a CJEU decision for clarity. Hence, for now, it seems that workers who want to successfully invoke fairness in relation to algorithmic time are reliant upon a decision-making body that adopts a substantive, worker-protective interpretation of data protection rules.

Alternatively, Article 35 GDPR could offer some support in tackling harmful algorithmic time practices, as it requires the data controller to carry out an impact assessment where the data processing carries a high risk to the rights and freedoms of natural persons. According to the Article 29 Working Party Guidelines, which were subsequently endorsed by the European Data Protection Board, the systematic monitoring of employees would qualify as high risk and therefore require an impact assessment.[112]

It could thus be argued that algorithmic time results in various harms to the rights and freedoms of workers and that employers must take measures to address these risks under Article 35(7)(d) GDPR. This could be furthered by the possible involvement of trade unions within the risk assessment process under Article 35(9), which states that data controllers should seek the views of data subjects and their representatives where appropriate.

[110] Malgieri (n 109); Andreas Häuselmann and Bart Custers, 'Substantive Fairness in the GDPR: Fairness Elements for Article 5.1a GDPR' (2024) 52 Computer Law & Security Review 105942.

[111] European Data Protection Board, 'Guidelines 03/2022 on Deceptive design patterns in social media platform interfaces: how to recognise and avoid them Version 2.0' (14 February 2023) 11. This is discussed in more depth in Chapter 7.

[112] Article 29 Working Party, 'Guidelines on Data Protection Impact Assessment (DPIA) and determining whether processing is "likely to result in a high risk" for the purposes of Regulation 2016/679' (WP 248 rev.01 4 October 2017). Note that the Platform Work Directive clarifies that Article 35 applies to platform work.

However, the likely impact of Article 35 has been criticised for several reasons, from ambiguity, to the data controller not fully understanding the implications of algorithmic management within an employment context, to a more cynical critique of self-assessments lacking integrity.[113] Whilst worker involvement prior to the deployment of algorithmic management, particularly in the design stage under Article 25, could be vital in preventing working time harms *ex ante*, the GDPR in its current form does not mandate this involvement. Moreover, as discussed in the context of the Framework Directive on Safety and Health, there are fundamental flaws with using risk assessments to address working time issues, namely the intangible nature of the harms and the discretion given to employers in determining which risks to address.

Resource to Article 13 WTD could, however, overcome some of these limitations. Article 35 GDPR ultimately requires an anchoring norm: there must be an identification of the right or freedom at risk, yet there is limited guidance on which rights or freedoms can be evoked. This is where the humanisation principle in Article 13 WTD could come in, as anchoring norm of which the processing of personal data should not infringe.

Lastly, in light of some of the GDPR's shortfalls in regulating employment contexts, Article 88 was introduced to allow Member States to adopt 'suitable and specific' measures for data processing within the workplace. However, as Lynsky highlights, Article 88 is caught awkwardly between being a harmonising regulation yet

[113] For further discussion, see Adams-Prassl and others (n 95).

acting as a directive by inviting more specific rules to be adopted.[114] Given that Abraha's comprehensive review of Article 88 does not suggest widespread use of it,[115] it is still to be seen whether Member States will fully utilise this measure.

In summation, the GDPR is important in regulating *how* decisions on algorithmic time are reached, however, it has limited impact on the substantive use of algorithmic time. It thus falls foul of two overarching thematic concerns of this chapter – (ii) reliance on procedural rights and (iii) the limitations of risk assessments – which prevent it from having a normative influence on algorithmic time. As a result, Article 13 WTD remains as a critical provision for regulating algorithmic time by augmenting the data protection provisions. Precisely how Article 13 can be used to overcome some of the GDPR's limits is analysed in subsequent chapters.

Artificial Intelligence Act

As with the GDPR, the Artificial Intelligence (AI) Act[116] is not designed for the employment context specifically. However, it does regulate the use of AI within the sector, and is therefore pertinent to the use of algorithmic time.

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[114] Orla Lynskey, 'Article 8: The Right to Data Protection' in Michal Bobek and Jeremias Adams-Prassl (eds), *The EU Charter of Fundamental Rights in the Member States* (Hart Publishing 2020).

[115] Halefom Abraha, 'A Pragmatic Compromise? The Role of Article 88 GDPR in Upholding Privacy in the Workplace' (2022) 12 International Data Privacy Law 276.

[116] AI Act (n 9).

Agreed in June 2024, the AI Act provides uniform legal rules to promote 'human-centric' and 'trustworthy' AI systems.[117] To achieve this, the AI Act adopts a 'risk-based approach' which categorises AI systems[118] into different risk levels and outlines restrictions for each category.[119] Most of the Act's provisions relate to two categories of AI systems: those which are either 'prohibited' or 'high-risk'.[120]

In terms of regulating algorithmic time, the following analysis argues that the AI Act does not significantly enhance the existing protections against algorithmic time. As will be seen, the focus is on risk assessments, which continues the third (iii) thematic criticism raised in other instruments. This thus reinforces the importance of Article 13 WTD as a critical provision governing algorithmic time.

The most substantial protections offered by the AI Act depend upon whether the use of algorithmic time can be classified under the 'high-risk' AI systems category (since it seems unlikely that algorithmic time would be regarded as 'prohibited'[121]).

Annex III outlines instances when AI systems used in the employment context are regarded as high-risk. It is not clear whether AI systems used to make decisions on

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[117] Recitals 1 and 8.

[118] Defined broadly in Article 3(1) as, *inter alia,* a machine-based system that operates with varying levels of autonomy.

[119] Recital 26.

[120] Referring to the Commission's draft, Aislinn Kelly-Lyth explains that beyond these two categories, the Act 'has little bite': 'The AI Act and Algorithmic Management' [2021] Comparative Labor Law & Policy Journal Dispatches No. 39, 3.

[121] Of the listed prohibited AI systems, Article 5(1)(f) relates specifically to the workplace – the use of AI systems to infer the emotions of someone at work – but this is not relevant to algorithmic time.

working time would qualify.[122] The definition includes, *inter alia,* AI decisions which affect the 'terms' of work-related relationships or the allocation of 'tasks based on individual behaviour'.[123] It could be argued that temporal disciplining involves the allocation of gigs based on individual performance, or that dynamic scheduling concerns essential terms of when a worker will work, and therefore falls within this category. This is caveated, however, by Article 6(3) which excludes AI systems which do not pose a 'significant risk' to health, safety and fundamental rights and fulfil one of the listed conditions. There is therefore scope to argue that algorithmic scheduling software, for instance, does not reach the threshold of harm and that, since the system fulfils the condition of improving the 'previously completed human activity' of manual scheduling, it falls outside of the high-risk categorisation. Hence, whether algorithmic time reaches the threshold of high-risk is the first hurdle within the AI Act.

Supposing that the use of algorithmic time *is* classified as a high-risk AI system, it must then comply with the requirements under Chapter 3 of the Act. This includes undertaking a 'continuous' risk management to identify the risks of the system and implement mitigation measures, record-keeping duties, information provision, human oversight, accuracy guarantees, and undertaking a quality management system, which documents the strategy for compliance with the AI Act.[124]

[122] As yet there has been no CJEU case law on the AI Act. There are two preliminary references pending, but neither relate to the employment context specifically: Case C-806/24 *YETTEL BULGARIA EAD v FB* (consumer rights) and Case C-159/25 *B.Ż, V. sp. z o.o. v T. SA, Ł.W.* (assignment of a court judge).

[123] This criterion was narrowed since the Commission's draft which simply included decisions on the allocation of tasks.

[124] This is the conformity assessment required for AI systems in the employment context under Article 43(2), which does not provide for the involvement of a notified body but is instead referred to as a conformity assessment procedure based on internal control under Annex VI.

The key regulatory device used, therefore, is reliance on risk assessments to prevent harms caused by AI systems at work. This thus bears the same concerns as raised in the earlier sections on the Framework Directive on Safety and Health and the GDPR, which is that risk assessments are ill-suited to address algorithmic time. By adopting a 'risk-based', not a 'rights-based' approach,[125] the question becomes what are acceptable levels of risks, rather than what are acceptable standards for organising working time. It creates a narrow focus on preventing generic risks and harms, rather than setting expectations around the fair use of AI systems to organise working time. This is why the general principle in Article 13 is of heightened importance, as there first needs to be a normative guiding principle in order to *then* evaluate if the AI system risks infringing this.

In addition to these general concerns, there has been sustained criticism around the use of risk assessments for AI systems within the labour law community.[126] The AI Act adopts the product safety approach of the 1980s which,[127] whilst it avoids the need for cumbersome legislation, many have argued is inappropriate for workplace AI. This is because, unlike physical harms associated with traditional products, AI systems give rise to intangible harms (like discrimination) which are constantly evolving (since this is inherent within machine-learning).[128] Pre-emptively certifying that the AI system is

[125] Zahra Yusifli, 'The "Bouncing Ball" Effect of the EU Artificial Intelligence Act on Employment Relations' (2024) 1 Journal of AI Law and Regulation 228, 228.

[126] Jeremias Adams-Prassl refers to how the draft AI Act was subject to 'trenchant criticism' in 'Regulating Algorithms at Work: Lessons for a "European Approach to Artificial Intelligence"' (2022) 13 European Labour Law Journal 30, 49.

[127] Known as the 'New Legislative Framework', as discussed in Adams-Prassl (n 126) and Michael Veale and Frederik Zuiderveen Borgesius, 'Demystifying the Draft EU Artificial Intelligence Act — Analysing the Good, the Bad, and the Unclear Elements of the Proposed Approach' (2021) 22 Computer Law Review International 97.

[128] Adam-Prassl (n 126).

a safe product for the market is therefore more complex and 'value-laden'[129] than traditional product safety.

This is closely related to the fact that, under the AI Act, most of the risk assessment obligations fall on the AI system provider, not deployer.[130] In the employment context, the employer will usually be the deployer.[131] This means that, not only does the employer face limited obligations under the AI Act,[132] the risks are assessed by AI designers who are not necessarily versed or best placed to determine the ongoing risks in an employment context. The fact that compliance with the risk assessment is largely self-regulatory could further undermine the potential effectiveness of the regime, by reducing it to a form of 'rubber stamp'.[133]

So far, the criticisms examined have argued that the risk-based approach of the AI Act is unlikely to offer a sufficient level of protection for workers. However, some criticisms have gone further to argue that the AI Act could *worsen* the current situation for workers. Since the AI Act is an EU regulation introduced to harmonise the internal market,[134] it acts as a regulatory ceiling not a floor which potentially threatens to override specific protective measures taken to address AI at work.[135] In the context of

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[129] Veale and Borgesius (n 127) 105.

[130] Kelly-Lyth (n 120).

[131] Yusifli (n 125); Kelly-Lyth (n 120). Note that the employer could become a provider if they modify the system substantially: Valerio De Stefano and Mathias Wouters, 'AI and Digital Tools in Workplace Management and Evaluation' (European Parliament 2022).

[132] Kelly-Lyth (n 120).

[133] Kelly-Lyth (n 120) 7; Adams-Prassl (n 126) also argues the conformity assessments are unlikely to be applied in any stringent way. Similar concerns are raised in Aude Cefaliello and Miriam Kullmann, 'Offering False Security: How the Draft Artificial Intelligence Act Undermines Fundamental Workers Rights' (2022) 13 European Labour Law Journal 542.

[134] Under Article 114 TFEU.

[135] Kelly-Lyth (n 120); De Stefano and Wouters (n 131); Veale and Borgesius (n 127).

algorithmic time, for example, this could mean that national laws which restrict algorithmic scheduling software are struck down as obstacles to free movement.

Given that the AI Act will not apply until August 2026,[136] it is still too premature to determine if these concerns will materialise. What this brief overview has sought to achieve, however, is to highlight the implications of the AI Act on algorithmic time and ultimately underscore the continued importance of Article 13 WTD. Due to the reliance on risk assessments to govern AI systems, there is a need for a normative guiding principle on working time. This would enable providers to ask whether the AI system is at high-risk of infringing the humanisation principle, rather than mitigating risks in the abstract.

Attention now lastly turns to the Platform Work Directive, which significantly fortifies the AI Act, but only in the specific context of platform work.

Platform Work Directive

Whilst algorithmic time is not limited to labour platforms, these platforms are dependent upon algorithmic time. It is therefore pertinent to examine how Platform Work Directive[137] may affect the use of algorithmic time on labour platforms.

[136] The Act will apply in stages, see Art 113.

[137] Platform Work Directive (n 10).

The Platform Work Directive has been regarded as 'innovative' and 'ground-breaking',[138] yet equally criticised for failing to 'alter the structural precarity of platform work' itself.[139] Finalised in 2024, the directive adopts two main strategies. It firstly introduces a rebuttable presumption of employment for platform workers,[140] and secondly provides an array of 'digital rights' – such as transparency, information, human involvement, and impact assessments – which apply regardless of status.[141]

In the following analysis, it will ultimately be argued that whilst the Platform Work Directive can be praised in many respects, it was a missed opportunity to address the *working time* issues specific to platforms. As a result, the three key thematic criticisms levelled at other instruments ((i) reliance on standard employee working time norms, (ii) procedural obligations without substantive conditions, and (iii) inadequate risk assessments) persist, rendering Article 13 WTD of continued importance.

Unresolved working time issues

All four types of algorithmic time are apparent in platform work. The 'on-demand' nature of location-based platform work is emblematic of dynamic scheduling, and contested time, from waiting or scrolling for gigs, is rife in platform work.[142] Examples

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[138] Silvia Rainone and Antonio Aloisi, 'The EU Platform Work Directive: What's New, What's Missing, What's Next?' (ETUI Policy Brief 2024) 8.

[139] Sandra Fredman and others, 'Fair Work for Platform Workers: Lessons from the EU Directive and Beyond' [2025] Industrial Law Journal dwaf018, 4.

[140] Article 5, supported by Articles 4 and 6.

[141] Notably in Chapter III on Algorithmic Management; Fredman and others (n 139) 3.

[142] Fredman and others (n 139) 17 list examples of the 'unpaid extra time' common on platforms.

of temporal disciplining and algorithmic pace-rates can also be found in platform work, as outlined in Chapter 1.

Despite the specific working time issues posed by platforms, however, the Platform Work Directive does not directly address them. Instead, it relies upon the rebuttable presumption of employment as the key regulatory solution which, in terms of EU-level working time protections, would then result in the applicability of the WTD and Transparent and Predictable Working Conditions Directive. As outlined earlier, however, these instruments are geared towards the standard employee model rendering them ill-equipped to addressed platform work. It requires the shoehorning of 'just-in-time'[143] platform work into the WTD's '9-to-5' model. The main provision within the WTD which departs from the standard model of time is Article 13, which means that much of the regulatory protection offered by the Platform Work Directive rests upon this single provision.

The fact that the Platform Work Directive leaves working time issues unresolved is apparent in the instrument itself. As part of the Commission's Impact Assessment, it acknowledged that it 'was not possible to meaningfully quantify' the impact that worker status would have on working time since 'actual working times depend on the real-time demand for services, supply of workers, and other factors'.[144] As featured in the Transparent and Predictable Working Conditions Directive, the term 'actual' working time alludes to contested time but does not elaborate further. The

[143] Valerio De Stefano, 'The Rise of the "Just-in-Time Workforce": On-Demand Work, Crowd Work and Labour Protection in the "Gig-Economy"' [2015] 37 Comparative Labour Law & Policy Journal 471.

[144] Commission, 'Explanatory Memorandum for Proposal for a Directive on Improving Working Conditions in Platform Work' COM(2021) 762 final 13.

Commission also acknowledged that the WTD's distinction between working time and rest time is based on physical location: whilst reference is made in Recital 10 to the CJEU's more recent decisions that 'stand-by' time covers restrictions on workers' freedom, the Commission did not indicate how the directive might overcome this binary challenge in the context of platform work.[145] This issue is apparent in Article 7(1)(c), which prevents personal data being collected while the person is 'not offering or performing platform work'. Without clarifying what counts as working time, however, the provision could be difficult to enforce.[146]

Closely related to this is the fact that the EU does not have the competency to regulate pay for working time, which is one of the driving issues behind contested time, as discussed before. Fredman and others argue that this, however, ought not to have prevented the directive from addressing the issue as it could have used the same competency arguments relied upon for the Adequate Minimum Wages Directive.[147] This again is potentially an area where Article 13 WTD could assist, by addressing instances where working time is not adapted to the worker but geared towards avoiding payment for working time.

Finally, the use of dynamic scheduling by platforms risks rendering the rebuttable presumption of employment a circular tool. Recital 6 refers to individuals 'enjoying some flexibility in the organisation of working time' yet, at the same time, facing the challenges of being misclassified as self-employed. As Rosin points out, the

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[145] Commission (n 144) 5.

[146] Michael Veale and others, 'Fortifying the Algorithmic Management Provisions in the Proposed Platform Work Directive' [2022] 14 European Labour Law Journal 308, referring to the earlier draft Article 6(5).

[147] Fredman and others (n 139).

apparent ability to choose 'whether and when to work' is a cornerstone of platform work and, whilst this flexibility is often severely restricted by platforms in reality,[148] is critical to employment status.[149] By not addressing scheduling within the instrument, the directive is arguably a missed opportunity to clarify the interplay between working time and worker status in the context of platform work. Instead, the omission means that Article 13 WTD remains as the key protective provision where the rebuttable presumption does apply, thus reasserting the importance of developing its potential in light of the growth of platform work.

Strengthening procedural GDPR rights (but not substantive outcomes)

In addition to the rebuttable presumption, the Platform Work Directive has been praised for strengthening many of the GDPR rights for platform workers.[150] This includes new prohibitions on processing specific types of personal data,[151] stronger transparency, explanation and worker involvement rights,[152] and lastly greater human oversight in automated decision-making.[153] This overcomes issues like the GDPR's reliance on 'highly individualised data protections rights' by ensuring that platforms make the information available to workers' representatives in specific circumstances,[154] and

[148] Annika Rosin, 'The Right of a Platform Worker to Decide Whether and When to Work: An Obstacle to Their Employee Status?' (2022) 13 European Labour Law Journal 530.

[149] In *Yodel*, for example, the CJEU's main case on algorithmic management, the courier driver's self-employed status was likely to be genuine in light of the great deal of latitude he held, which included the fact that he had an absolute right not to accept the tasks assigned to him: Case C-692/19 *B v Yodel Delivery Network* [2020] ECLI:EU:C:2020:288.

[150] Rainone and Aloisi (n 138).

[151] Article 7.

[152] Article 9, see Rainone and Aloisi (n 138).

[153] Article 10 and 11.

[154] Aislinn Kelly-Lyth and Jeremias Adams-Prassl, 'The EU's Proposed Platform Work Directive' (*Verfassungsblog*, 14 December 2021) <https://verfassungsblog.de/work-directive/> accessed 13 October 2025, under article 9(4).

reduces the threshold for human involvement from ‘solely’ automated decisions in the GDPR to decisions ‘supported’ by automated systems.[155]

In the context of algorithmic time, this would enable workers to gain a better understanding of the factors taken into account when time is distributed by the platform. For example, under Article 9(1)(b)(iii), workers should be informed of the main parameters that automated systems use to distributed time including the ways in which the workers’ behaviour influences the decision. One of the reported challenges with temporal disciplining in platform work is that workers do not know which performance factors are used to set their shifts:[156] these rights would address this information asymmetry.

However, as with the GDPR, these rights ultimately do not substantively address working time decisions. Fredman and others note that while digital rights provide ‘procedural fairness’, they do ‘little to alleviate income insecurity or job instability’.[157] This is true of working time distribution, as the procedural rights are then dependent upon subsequent substantive norms. In such an instance, Article 13 WTD could provide the guiding principle to be relied upon by platform workers *after* accessing the Platform Work Directive rights.

Overreliance on Risk Assessments

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[155] Halefom Abraha and others, ‘Finetuning the EU’s Platform Work Directive’ (*Oxford Human Rights Blog*, 17 May 2022) <https://blogs.law.ox.ac.uk/business-law-blog/blog/2022/05/finetuning-eus-platform-work-directive> accessed 10 March 2023, in reference to the Commission’s draft.

[156] Ivanova and others (n 64), discussed further in Chapter 5.

[157] Fredman and others (n 139) 4.

One avenue workers could use to substantively challenge working time practices is through the risk assessments introduced by the Platform Work Directive. Article 8 builds upon the impact assessment required under Article 35 GDPR by clarifying that automated monitoring or decision-making on platforms met the threshold for conducting a GDPR impact assessment and that platforms should seek the views of platform workers and their representatives when carrying it out.

In addition, Article 12 builds upon the risk assessment in the Framework Directive on Safety and Health by stating that platforms should evaluate the risks of the automated systems on workers' health and safety, including the 'psychosocial' risks, and states that automated or supporting systems cannot be used 'in a manner that puts undue pressure' on workers. This significantly advances the existing *social acquis* since, as discussed earlier, psychosocial risks remain a disputed area of health and safety law.[158] This is fortified by the reference to 'stress and anxiety' in Recital 50, which are terms absent from other health and safety instruments. The Platform Work Directive therefore appears to elevate the protection for platforms workers to a *higher* level than that of ordinary workers.[159]

In the context of algorithmic time, this could potentially lead to practices like temporal disciplining being prohibited on platforms for placing 'undue pressure' on

[158] The full impact of the provision, as argued by Valerio De Stefano, may depend upon a on a broad reading of 'automated systems' to capture all potential harms: 'The EU Commission's Proposal for a Directive on Platform Work: An Overview' (2022) 15 Italian Labour Law e-Journal 1.

[159] The provision has been criticised for not covering self-employed platform workers despite facing similar risks: Antonio Aloisi and Nastazja Potocka-Sionek, 'De-Gigging the Labour Market? An Analysis of the "algorithmic Management" Provisions in the Proposed Platform Work Directive' (2022) 15 Italian Labour Law e-Journal 29, in reference to the earlier draft.

workers by allocating shifts based on performance. Similarly, there is scope to argue that the use of contested time gives rise to stress and anxiety over the lack of genuine (ie., uncontested) rest time. Ultimately, however, determining what is 'undue' pressure requires some form of benchmark. This, again, is why Article 13 WTD is critical, as it provides the general principle governing what permissible working time distribution is, which can be used to examine undue, stressful or anxiety-inducing practices.

More generally, whilst the Platform Work Directive's fortification of the impact assessment under the GDPR and the risk assessment under the Framework Directive on Safety and Health is welcome, the overarching critiques discussed earlier remain. The onus is ultimately on the *platform* to evaluate the risks and adopt 'appropriate preventive and protective measures',[160] rather than creating external standards to be met. The difficulties of using risk assessments to address the intangible harms resulting from working time distribution persist. Similarly, the GDPR impact assessment relies upon the identification of a fundamental right or principle being breached, which is why Article 13 WTD remains vital as a general standard to point to. This is underscored by the references in Recital 50 of the Platform Work Directive to algorithmic management 'raising the pace' of work and the limited learning and influence over tasks, which are deeply reminiscent of Article 13's reference to monotonous work and predetermined work-rates. Drawing Article 13 WTD into the assessment of what is at risk within platform work could therefore significantly enhance the existing assessment tools provided in the Platform Work Directive.

[160] Article 12(1)(c).

To summarise, there many elements to the Platform Work Directive which could significantly improve the position of platform workers/users in the EU. However, the directive is arguably a missed opportunity to address some of the specific issues of *working time* on platforms. By relying on the standardised model of employment, procedural rights and risk assessments, the directive does not go significantly beyond the protection offered by Article 13 WTD.

Conclusion

This chapter has outlined the patchwork of existing EU-level regulation on algorithmic time, examining the six most pertinent instruments. Three overarching critiques were made of the existing regime: (i) the focus on the standard model of time, (ii) the reliance on procedural rather than substantive norms, and (iii) the limitations of risk assessments in the context of working time.

In light of these critiques, it was argued that Article 13 WTD is one of the most promising EU-level provisions for addressing algorithmic time. In contrast to the other WTD provisions, which focus on the duration of time, Article 13 governs the distribution and organisation of time. Its potential for augmenting the existing regime – by governing non-standard models of time, providing substantive guidance to support procedural rights, and anchoring risk assessments around objective standards – therefore deserves further investigation.

It is this investigation which the next two chapters take up. The following chapter outlines the genealogy of the humanisation of work principle found in Article

13 WTD, tracing its origins, drafting, and meaning. The subsequent chapter then examines the status of Article 13 WTD within the EU’s patchwork of existing regulation. Together, these inquires will establish the extent to which Article 13 WTD can overcome the limitations discussed here, by asserting that algorithmic time be adapted to workers’ needs.

Chapter 3

Interpreting the Humanisation of Work Principle

Introduction

Little is known about the intended meaning of Article 13 of the Working Time Directive. Despite being critical to the EU's regulation of non-standard models of time, reactions to the general principle of adapting work to the worker range from it 'lacks substance'[1] to it being a 'concrete source of normative guidance'.[2]

This chapter addresses this ambiguity by defining the precise scope, substance, and nature of the 'humanisation of work'[3] principle found in Article 13. It draws on a century of drafting materials and other sources to distil an interpretive framework for the principle. It finds that, at its core, the principle aims to ensure that workers are not treated as machines, embodying the 'humanisation of work' movement which began in the 1920s and peaked in the 1970s.[4]

The chapter consists of three parts. Part I outlines the 'humanisation of work' movement, in order to provide the social context behind the principle. To best comprehend the meaning of the humanisation principle, it must be understood as part of a counter-movement to scientific management and machine-driven work.

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[1] Jeffrey Kenner, 'Regulating Working Time – Beyond Subordination' in Stephen Weatherill (ed), *Better Regulation* (Hart Publishing 2007) 201.

[2] Alan Bogg, 'Of Holidays, Work and Humanisation: A Missed Opportunity?' (2009) 34 European Law Review 738, 752.

[3] As labelled by Brian Bercusson, *European Labour Law* (Butterworths 1996) 332.

[4] Whilst the principle had been referred to as the 'humanisation of work' principle by Bercusson (n 3), and then Bogg (n 2), the origins and link between the humanisation movement and principle had not been evidenced.

Part II then outlines the legislative history of the humanisation principle. Found in several high-profile ILO and EU instruments, not just the Working Time Directive, the principle has a rich history with varying strands of interpretations and debates. The chapter divides discussion of principle's evolution into five key timeframes: 1920-1950s, 1960-1970s, 1980s, 1990s-2010s, 2017+. The purpose of this section is to demonstrate how the humanisation of work *movement* has been translated into a legal *principle*.

The final Part III then consolidates the social and legal history into an interpretative framework for applying the humanisation of work principle today. It argues that the scope of the principle applies to the employer's prerogative of *work organisation*. The substantive duty requires the organisation of work to be adapted to the *human needs* of workers (divided into physical, psychosocial, and specific needs). To discharge the duty, there must be some form of *worker input* into the design of work. The section lastly highlights how, when applied to working time organisation, the humanisation principle becomes particularly controversial due to the implications of adapting time to human needs.

Ultimately, the chapter demonstrates that concern over dehumanising work is nothing new: it has existed since the advent of modern labour law, with the long-standing humanisation principle as a defining feature of the debate. This therefore marks it out as offering significant potential for addressing algorithmic time.

Part I: Social Context – The Humanisation of Work Movement

'Adapting work to the worker' was the catchphrase of a major political and social movement, which originated in the 1920s and peaked in the 1970s.[5] This section outlines the origins, aims, and strands of the movement in order to provide the social context behind the principle. In doing so, it lays the groundwork for analysing the legislative evolution of the principle in Part II and developing the interpretative framework in Part III of this chapter.

The 'humanisation of work' movement arose over concern that workers were treated as machines and therefore 'dehumanised'. It began with two rival theories over how to organise work: scientific management and the human relations approach (of which the humanisation of work movement was the 'conceptual offspring').[6]

Scientific management, developed by Frederick Taylor, claimed that workers' efficiency could be increased through the division of tasks, careful time keeping and strict managerial control. It aimed to standardize work processes and treat workers as components of a well-oiled machine.[7] By contrast, the human relations approach argued that human relationships, autonomy, and motivation were the most important factors in productivity.

The human relations approach built upon a series of experiments to 'humanise' working conditions. The first, best-known experiments of the early 20th century

[5] Luigi Montuschi refers to the principle as a 'banner' for the movement in 'Health and Safety Provision in Italy: The Impact of the EEC Framework Directive' (1990) 6 International Journal of Comparative Labour Law and Industrial Relations 146, 155.

[6] David Guest and others, 'Humanizing Work in the Digital Age: Lessons from Socio-Technical Systems and Quality of Working Life Initiatives' (2022) 75 Human Relations 1461, 1476.

[7] For an overview, see Frederick Taylor, *The Principles of Scientific Management* (Dover Publications 1910).

included the Tavistock study, which found that the most productive Scottish mines allowed worker autonomy over any new technology introduced,[8] and Elton Mayo's 'Hawthorne Effect' study which highlighted the impact that human relationships had on productivity in an electric telephone factory in Chicago.[9] These studies began to suggest an alternative to scientific management, which was the predominant approach to organising work at the time, by placing greater emphasis on managerial relationships rather than the fragmentated, timed, and repetitive division of tasks.

By the 1960s and 1970s, this early movement had 'triggered' hundreds of industry-led experiments to humanise the workplace.[10] The most influential of these was conducted by Volvo, the Swedish car manufacturer. Volvo's CEO at the time described how 'people don't want to be subservient to machines' because it makes them feel 'lost, unimportant.., merely a replaceable cog'.[11] In response to worker discontent in the 1960s, Volvo experimented with the production line and factory layout. Workers were encouraged to take autonomy over how their jobs were organised. They could decide to swap jobs, rotate positions and re-organise the factory floor to facilitate social contact and group work. Volvo claimed that the experiments increased worker productivity and satisfaction: rather than being 'chained' to the

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[8] Guest and others (n 6).

[9] R Walton, 'From Hawthorne to Topeka and Kalmar' in Eugine Cass and Frederick Zimmer (eds) *Man and Work in Society* (Van Nostrand 1975); ATM Wilson, 'Quality of Working Life: Comments on Recent Publications in English' (1977) 10 IFAC Proceedings 1; J Carpentier, 'Organizational Techniques and the Humanization of Work' (1975) 40 Ekistics, Work and Leisure 11; T Fraser, 'Human Stress, Work and Job Satisfaction: A critical approach' (ILO 1983); Stuart Timperley and D Ondrack, *The Humanisation of Work* (Armstrong 1982).

[10] Guest and others (n 6) 1462; Yves Delamotte and Kenneth Walker, 'Humanization of Work and the Quality of Working Life – Trends and Issues' (1976) 6 International Journal of Sociology 8 provide data on the number of experiments.

[11] Pehr Gyllenhammar, 'How Volvo adapts work to people' (1977) 55(2) Harvard Business Review 102, 102 -3.

assembly line under scientific management, workers were empowered to 'organise their jobs in more human ways'.[12]

Much has been said to critique the validity of these studies and there is debate over whether the initiatives were supported by, or simply thrust upon, working people.[13] What is clear, however, is that by 1970s, the humanisation of work movement was in full swing: scientific management had fallen out of favour as the predominant approach for organising work.

Governments, international bodies, industry and trade unions produced reports, organised conferences and funded research projects on initiatives to humanise the workplace. They called for an end to 'soulless'[14] work in which man was 'fitted to the machine'.[15] The aim was to 'make work more human'[16] by removing 'those patterns of work which tend to dehumanise the worker'[17] and giving workers 'an active voice in the decisions in the workplace'.[18]

The ILO produced lengthy publications, set up a programme specifically on humanising work[19] and issued resolutions calling for the 'promotion of the quality of

[12] Gyllenhammar (n 11) 106.

[13] Delamotte and Walker (n 10); Geert Hofstede, 'Humanisation of Work - the Role of Values in a Third Industrial Revolution' in Stuart R Timperley and DA Ondrack (eds), *The Humanisation of work* (Armstrong 1982).

[14] John Houck, 'When Work Is Soulless' (1974) 36 The Review of Politics 458.

[15] ILO Director-General 'Technology for Freedom: Man in His Environment. Director-General's Report to the ILO Conference, Part 1' (International Labour Office 1972) 35.

[16] ILO Director-General, 'Making Work More Human: Working Conditions and Environment' (ILO 1975).

[17] Commission, 'Reform of the Organisation of Work (Humanisation of Work) (Communication) COM (76) 253, 1.

[18] James O'Toole and others, 'Work in America: Report of a Special Task Force to the Secretary of Health, Education and Welfare' (US Office of Education, 1972) 149.

[19] Known as the International Programme for the Improvement of Working Conditions and Environment (PIACT), established by ILO Resolution concerning the Working Environment (ILC 59th Session, 1974).

working life' (which was an alternative term for the humanisation of work).[20] The ILO Director-General at the time argued that workers were not content to be 'slave[s]' to technology and referred to the movement as a 'radically new approach' to 'abate the revolt against work as a dull monotony'.[21] The ILO issued a statement recognising that workers have 'increasingly demanded that their work satisfy their human aims and needs'.[22]

At a European level, the Commission considered the movement a 'logical extension' of the basic concept that labour is not a commodity.[23] The Council issued a resolution calling for a 'working environment tailored to the needs of man and his legitimate aspirations'.[24] The Commission argued that, by changing the pattern of 'monotonous repetitive tasks' and 'giving workers the opportunity to participate', it would result in 'more meaningful and satisfying jobs'.[25]

Across the Atlantic, the US Senate set up hearings on the humanisation of work and published two major publications on the issue: Worker Alienation[26] and Work in America.[27] Opening the hearings, Ted Kennedy explained that it was no longer possible to 'to see the man behind the machine' and that for millions, work was a form of 'robot-

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[20] ILO Resolution 1974 (n 19); ILO Resolution on Working Conditions and Environment (ILC 61st Session, 21 June 1976).

[21] ILO Director-General (n 16) 33 and (n 15) 34-35.

[22] ILO, 'Information note on the activities of the International Labour Organisation concerning the humanisation of conditions of work' (ILO No. 32 Geneva, 1975) 1.

[23] Commission (n 17) 3. The ILO also explicitly linked the humanisation of work movement to the ILO's Constitution, which states that labour is not a commodity and that occupations should bring 'satisfaction': ILO (n 22) 1.

[24] Council Resolution of 29 June 1978 on an action programme of the European Communities on safety and health at work [1978] OJ C165/1, 2.

[25] Commission (n 17) 8, 2.

[26] O'Toole and others (n 18).

[27] US Senate, 'Worker Alienation: Hearings before the Subcommittee on Employment, Manpower, and Poverty of the Committee on Labor and Public Welfare' (92nd Congress, 25 July 1972).

like monotony', 'confinement and frustration'.[28] He stated that 'making the assembly line more human and humane is a large and difficult task, but it is at the heart of anything we mean by social justice in America'.[29]

International trade union conferences were also held on the humanisation movement[30] and there was even a NATO summit.[31] National governments across Europe set up research hubs and issued policy papers on the movement– from the German 'Humanisierung des Arbeitsleben', to the Scandiavian 'Arbetsmiljö', the French 'Amelioration des Conditions de Travail', the Spanish 'Humanizacion del trabajo', or the Anglophone 'Quality of Working Life'.[32] The USSR was also engaged in research on the humanisation of work.[33]

There was inevitably divergence across States and institutions as to the scope of the humanisation of work movement. One commentator claimed that trying to define the concept was 'like trying to pick up a jellyfish… and has about as much sense'.[34] At first glance, the humanisation of work movement appeared to encompass any action to improve (and therefore humanise) working conditions, from health and safety, to wages, to social security. However, as Guest and others note, a closer look at the

[28] US Senate (n 27) 8.

[29] US Senate (n 27) 79.

[30] Reference is made to multiple trade union conferences during the 1970s, including the World Federation of Trade Unions and European Central Trade Union organisations in ILO, 'Report IV (2) Occupational Health Services (ILC 71st Session, 1985).

[31] Guest and others (n 6).

[32] Wilson (n 9) 1.

[33] The US Senates' 'Worker Alienation' (n 27) 84 notably references a study at Leningrad University which made 'major contributions to the investigation of work satisfaction in a socialist society', noting that 'the study is more than the usual recitation of Marxist rhetoric about worker alienation'.

[34] L Szamuely, 'Industrial Democracy in Western Europe: Effects and Contradictions' (1978) 21 Acta Oeconomica 341, 341. Szamuely states that industrial democracy, humanisation of work and quality of working life were all used as equivalents or synonymous.

movement reveals that it was concerned predominantly with 'work' (i.e., the activity of producing a good) as opposed to 'employment' (i.e., the terms and conditions of work).[35] This was largely because the standard employment relationship dominated during the 1970s, so the focus instead turned to the substance of jobs: the design of tasks, the monotony of the factory line, and the lack of participation.[36]

The movement was multidisciplinary, with philosophers, sociologists, business scholars, anthropologists, legal practitioners and others enthralled in different debates – from the philosophical meaning of 'worker alienation' and its roots in Karl Marx's writing,[37] to measuring the productivity gains of 'humanising' methods.[38] The movement also tied into the 'basic needs' philosophy of the 1970s, which attempted to articulate the core needs of all people and regarded 'satisfying work … as a basic human need, essential to identity, self-respect and order in human life.'[39]

Central to the humanisation movement, as acknowledged by the ILO Director-General, was the 'need for workers to participate in decisions concerning the conditions in which they perform their work'.[40] It was argued that, by involving workers, it prevented them from being treated as machines without decision-making power and helped ensure meaningful work. The Commission pointed to strategies such as job

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[35] Guest and others (n 6).

[36] Guest and others (n 6).

[37] See Karl Marx's writing on workers' estrangement from their species-life in *Economic and Philosophic Manuscripts of 1844* (Progress Publishers 1959), as well as remarks on 'individuals burdened by th[e] drudgery' of the machine-driven work in *Capital Volume 1* (Progress Publishers 1887) 284.

[38] For an overview of the debates, see Wilson (n 9).

[39] Guest and others (n 6) 1466.

[40] ILO Director-General (n 16) 74.

rotation, industrial democracy, job enrichment, enlargement, and autonomous working groups to achieve meaningful work.[41]

The phrase 'adapting work to the worker' underpinned the humanisation movement. Industries which had introduced 'humanising' measures documented it in publications titled 'Adapting Jobs to the People: Experiments at Alcan'[42] or 'How Volvo Adapts Work to its People'.[43] The Commission, in its seminal document on the humanisation of work, defined the term humanisation as 'simply the objective of the "adjusting of the work situation to the worker"'.[44] The ILO Director-General referred to the movement as 'adapting the material environment of work, equipment, machinery and job content to human possibilities',[45] and an ILO resolution called for a legislative instrument aimed at 'adapting work to the human being'.[46] Contemporary academic literature stated that the movement sought to 'adapt the working environment to the physical and mental capacities of working men and women… by making it less hostile and more human'.[47]

Other key terms which were ubiquitous in the literature and reports on the humanisation of work movement included: patterns of work, monotony, pace, assembly line, human needs, meaningful work, alienation, job design, job rotation, participation, democratisation, and satisfaction. As will be seen in Part II, these terms

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[41] Commission (n 17); similarly strategies are described in the ILO (n 22) and US Senate (n 27).

[42] Jean Champagne, 'Adapting Jobs to People: Experiments at Alcan' (1973) 96 Monthly Labor Review 1.

[43] Gyllenhammar (n 11).

[44] Commission (n 17) 2.

[45] ILO Director-General (n 16) 74.

[46] ILO Resolution (n 20) 337.

[47] Jean de Givry, 'The ILO and the Quality of Working Life A New International Programme: PIACT' (1978) 117 International Labour Review, 265-6.

became embedded into the legislative instruments that contained the humanisation principle.

Within the humanisation movement, there were two further strands of focus – both of which are significant for the legislative history of the principle outlined in Part II. One strand of the movement acknowledged that there were *specific* groups of workers for whom the 'adaptation of their work is particularly important: women, young people and older workers …. disabled persons'.[48] The emphasis was on ensuring that adaptations to work organisation were not just aimed at the general workforce, but also tailored to the special needs of 'more vulnerable categories of workers'.[49]

Of particular concern were the specific needs of certain age groups. The ILO Director-General claimed that there was 'growing attention being given to the problem of adapting jobs to suit ageing workers', for whom the repetitive, dexterous factory tasks were particularly dehumanising.[50] There was also a consensus that young people had the strongest reactions to monotonous work: they rejected the 'over-organised industrial units' which treated them as incapable of making their own choices[51] and were 'increasingly reluctant to bow to the Taylorist system of work'.[52] Young and old workers were therefore in heightened need of work adaptations.

Another major strand of the humanisation movement was the 'growing contribution of ergonomics' and its role in adapting workplace equipment or machinery

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[48] ILO, 'Report V (1) Occupational Health Services' (ILC 70th session, 1984) 14.

[49] Commission (n 17) 12 and Annex 1-2. This strand of the movement as also extensively discussed in Work in America (n 27) xi and 149, as well as in de Givry (n 47) 262.

[50] ILO Director-General (n 16) 48.

[51] Gyllenhammar (n 11) 103.

[52] ILO Director-General (n 16) 49.

to rectify or anticipate accidents or illness.[53] There was ambiguity over the scope of ergonomics and its precise meaning within the movement – in some instances, ergonomics was referred to as 'the principle that the working environment should be adapted to humans and not the other way around',[54] whereas in other cases, ergonomics is referred to as one aspect of adapting work to the worker.[55] There was also significant debate over the concept of ergonomics and how far it stretched. Much of the dispute rested on whether ergonomics applied exclusively to machinery and equipment, or extended more broadly to issues of work organisation, content and psychosocial risks. For instance, some States consistently argued that ergonomics should be 'interpreted in a very wide sense',[56] with references to 'conceptual ergonomics'[57] and the

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[53] ILO Director-General (n 16) 25-26. Other examples of ergonomics being referred to as part of the humanisation movement include ILO (n 22); ILO Occupational Health Services Recommendation No. 171 (1985) para 21.

[54] ILO, 'General Survey concerning the Occupational Safety and Health Convention, Recommendation and Protocol' (Report III Part B, 98th Session, 2009) 4. Other instances include: ILO, 'International Programme for the Improvement of Working Conditions and Environment (PIACT)' (Governing Body, GB.200/PPA/10/S, 1976) 10; ILO, *Improving Working Conditions and Environment: An International Programme* (ILO 1984) 18.

[55]For instance, the Commission (n 17) 2 defined the whole humanisation movement as 'the adjusting of the work situation to the worker' and the ILO's first definition of occupational health was 'to summarise: the adaptation of work to man and of each man to his job': Joint ILO/WHO Committee on Industrial Hygiene, 'First Report' (JECIH/I/10, 1950) 2. Similarly, the Council discussed ergonomics in the 'design, construction and utilization of the plant and machinery' as one aspect of humanising the workplace in Council Resolution (n 24) 3. The ILO also stated that its 'activities concerning job satisfaction or humanisation of work have been grouped … into four basic areas: improved working conditions, work organisation, ergonomics and the working environment, and participation of workers in decisions within undertakings': ILO (n 22) 1; this was further reflected in an ILO resolution which referred to the humanisation movement as concerning 'safety and health, hours of work, organisation of work, job content and ergonomics': ILO Resolution Concerning Future Action of the International Labour Organisation in the Field of Working Conditions and Environment (24 June 1975); a final example includes an ILO report which referred to ergonomics as concerned with the design or adaptation of machinery or tools, in comparison to the adaptation of work organisation or job content which 'goes farther' than ergonomics and addresses tedious work, the participation of workers, and greater job satisfaction (107). The report also acknowledged the 'overlap' between ergonomics and the organisation of work (18), and referred to the 'adaptation of work… through ergonomics and improvements in the organisation of work' (119): ILO (n 54 (1984)).

[56] Argued by Germany during the drafting of ILO Convention 161 in ILO 'Report V (2) Occupational Health Services' (ILC 70th Session 1984) 50. In the same report, Spain similarly stated that 'as far as ergonomics are concerned the role of adviser is neither specifically nor exclusively that of the occupational health services' (29). The ILO also interpretated ergonomics in a wide sense by stating that issues of work pace, hours, job fragmentation and monotony all 'forms part of ergonomics' to ensure that 'the way in which work is organised are all adapted to the workers': ILO (n 48) 14. The ILO explained that the scope of ergonomics has 'been gradually broadened' from immediate physical or medical dangers to addressing the 'needs and limitations of men': ILO (n 22) 3. Wilson (n 9) also acknowledged that the remit of ergonomics broadened during the humanisation movement.

[57] ILO (n 54 (1976)) 10; ILO Director-General (n 16) 24. In the drafting of Convention 161 and Recommendation 171, the ILO referred to conceptual ergonomics as an effort to 'adapt work to man … not only to prevent accidents and physical and mental fatigue but also to foster a sense of satisfaction and well-being at work through the proper adaptation of work and the establishment of a satisfactory working environment': ILO (n 56 (Report V (1) 1984)) 27-28.

application of ergonomics to psychosocial issues and work organisation.[58] By contrast, employers groups cautioned against the interpretation of ergonomics 'in the broad sense' for going 'far beyond' the remit of workplace instruments,[59] and other drafters focused narrowly on the role of adaptations for the 'elimination of failures due to the human factor'.[60]

Despite this ambiguity over the scope, however, the role of ergonomics as an integral part of humanising the workplace was evident[61] and, as will be discussed in Part II, became particularly prominent during the 1980s.

To conclude, this section has provided an overview of the humanisation of work movement. What began as a countermovement to scientific management, based on industry experiments to 'humanise' working conditions, then dominated the discourse around work in the 1970s. The movement was characterised by distinct terminology – adaptations, patterns, monotony – and held different strands, notably a focus on ergonomics and adapting work to *specific* workers.

Despite the fervour of the humanisation movement in the 1960s and 70s, most commentators claim that it dissipated by the 1980s, due to the oil crisis, unemployment

[58] For examples, see: ILO, 'Record of Proceedings' (ILC 3rd Session, 1959) 718; ILO, 'Report VII (a)(2) Safety and Health and the Working Environment' (ILC 66th Session, 1980) 7; ILO, 'Report VII(b) Amendment of the List of Occupational Diseases Appended to the Employment Injury Benefits Convention' (ILO 1980) 74; ILO (n 22) 3.

[59] ILO (n 58 ('Report VII(b)' 1980)) 22.

[60] ILC, 'Report VI (1) Organisation of Occupational Health Services in Places of Employment' (ILC 42nd Session, 1958) 14. Other examples of a narrower focus of ergonomics include the European Economic and Social Committee's discussion of ergonomic principles and psychosocial factors as separate in the drafting of the Display Screen Directive in 'Opinion on the Proposal for a Council Directive Concerning the Minimum Safety and Health Requirements for Work with Visual Display Units' [1988] OJ C318/13. The ILO similarly separated out the application of ergonomics principles to installations and work processes from issues of 'mental stress due to the pace and monotony of work, and promotion of the quality of working life… including job design… content and… work organisation' in ILO Resolution (n 19).

[61] For instance, in ILO Recommendation 171 (n 53) para 21, it states that 'with a view to promoting the adaptation of work to the workers', occupational health services should advise on health, hygiene and ergonomics and engage with workers as well as employers, which highlights ergonomics as an integral part of the humanisation movement.

and rise in neoliberal economic policies.[62] However, the legacy of the movement remained steadfast in its legal form as the principle of 'adapting work to the worker'. This will now be examined in Part II, which maps the development of the humanisation *principle* alongside the humanisation *movement.* It will ultimately demonstrate how the terminology, strands of interpretation, and aims of the movement became embedded into legislation.

Part II: Legal Context - The Legislative History of the Humanisation of Work Principle

Whilst the humanisation of movement is well recognised as a multi-disciplinary, political movement, little attention has been given to it as a legal movement. There appears to be no account of the principle of 'adapting work to the worker' as a long-standing legal principle. This is despite the fact that the principle has become engrained in much of the ILO and EU's core instruments on worker health and safety – from ILO Convention 155[63] to its more recent iteration in the European Pillar of Social Rights.[64]

This section outlines the legislative history of the principle, mapping the iterations of the principle against the humanisation of work movement. To date, the humanisation principle can be found in seven ILO conventions and recommendations,[65] five EU directives and one EU proclamation.[66] Nearly all the

[62] Gerry Rodgers and others, *The International Labour Organization and the Quest for Social Justice, 1919-2009* (ILO 2009).

[63] ILO Occupational Safety and Health Convention No.155 (1981).

[64] Interinstitutional Proclamation on the European Pillar of Social Rights [2017] C 428/09, Principle 10(b).

[65] These 7 instruments are: ILO Recommendation 171 (n 53) art 8(e) and art 21; ILO Occupational Health Services Convention No. 161 (1985), art 1(a)(ii) and art 5(g); ILO Hygiene (Commerce and Offices) Recommendation No.120 (1964) para 59; ILO Night Work Convention No.171 (1990), art 10; ILO Safety and Health in Agriculture Recommendation No. 192 (2001) art 6; ILO Convention 155 (n 63), art 5(b); ILO Occupational Health Services Recommendation No. 112 (1959), para (1)(b) and para 8(b), (f).

[66] These instruments are: Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work [1989] OJ L183/1, art 6(2)(d); Directive 2003/88/EC of 4 November 2003 concerning certain aspects of the organisation of working time [2003] OJ L299/9, art 13; Council Directive 90/270/EEC of 29 May 1990 on the minimum safety and health requirements for work with display screen equipment [1990] OJ L 156, Annex

instruments relate to occupational health and safety and include the humanisation principle as one of the core guiding principles.

Starting chronologically, the section begins with some of the oldest references to the principle and concludes with the most recent.[67] It divides the history of the principle into five key phases – the 1920-50s, 1960-70s, 1980s, 1990s-2010s and 2017 onwards. The legislative history shows that the humanisation principle was a malleable concept, with varying emphasis and strands of interpretation over time. This section ultimately sheds new light on the intended meaning of this under-researched principle, which is necessary for the development of an interpretative framework in Part III of this chapter.

1920s - 50s: Human Relations vs. Scientific Management

The humanisation of work movement was still in its infancy during the 1950s. As discussed, there was a clear tussle between scientific management and the human relations approach to organising work. This manifested itself in legislative instruments as two competing principles: adapting the *worker* to work vs. adapting *work* to the worker.

The first major iterations of the humanisation principle appear in the Joint ILO/WHO Committee Reports[68] and ILO Recommendation No.112 on Occupational

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para 3(b); Council Directive 2000/79/EC of 27 November 2000 concerning the European Agreement on the Organisation of Working Time of Mobile Workers in Civil Aviation [2000] OJ L 302, clause 6; Council Directive 2014/112/EU of 19 December 2014 implementing the European Agreement concerning certain aspects of the organisation of working time in inland waterway transport [2014] OJ L367/86, para 16; European Pillar (n 64), principle 10(b); arguably Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work [1994] OJ L 216, Annex para II(9).

[67] This comes with the inevitable caveat that some instruments or reports may have been missed, despite the thorough research investigation conducted already.

[68] Joint Committee (n 55); Joint ILO/WHO Committee on Occupational Health, 'Second Report' (No. 66, 1953); Joint ILO/WHO Committee on Occupational Health, 'Third Report' (No. 135, 1957).

Health Services,[69] which were likely inspired by earlier French legislation.[70] The Joint Committee, in its first report, summarised occupational health as aimed at 'the adaptation of work to man and of each man to his job.'[71] Several years later, Recommendation 112 outlined the role of occupational health services as including the 'adaptation of the work to the workers and their assignment to jobs for which they are suited'.[72] It further listed the functions of health services as including 'advice … on the best possible adaptation of the job to the worker' (Paragraph 8(b)) and the 'surveillance of the adaptation of jobs to workers, in particular handicapped workers' (Paragraph 8(f)).

An examination of the drafting materials and reports highlights the early influence of the humanisation of work movement. The Joint Committee stressed that the 'the planning of work tasks and patterns of industrial organisation which do not run counter to human emotional needs' was vital for 'happiness' and criticised the impact that the 'fragmentation' and 'specialisation' of work had on workers' pride and mental health.[73] During the International Labour Conference (ILC) proceedings, the French delegation stated that men should not become 'slaves of technical process and machines' and that work methods should 'enabl[e] workers to adapt themselves in the best way to their work', considering the issues of 'fatigue, weariness and indifference

[69] Recommendation 112 (n 65).

[70] LOI n° 46-2195 du 11 octobre 1946 relative à l'organisation des services médicaux du travail, which discussed the role of occupational physicians in adapting work to disabled workers, and is referenced in Joint ILO/WHO Committee, 'Training in Occupational Medicine of Doctors and Auxiliary Medical Personnel' (ILO 1st Session, 1950) 4 and Laurent Vogel, 'Prevention at the Workplace: An Initial Review of How the 1989 Community Framework Directive Is Being Implemented' (ETUI 1994).

[71] Joint Committee (n 55) 2.

[72] Recommendation 112 (n 65) paragraph 1(b).

[73] Joint Committee (n 68 (1953)) 11.

on the part of the worker'.[74] Both the ILC Report and the Joint Committee highlighted the importance of occupational health professionals' advice on 'fatigue, monotony, rhythm of work and rest pauses'[75] and the promotion of 'mental health and human relations'.[76] The language used and the concerns over Taylorist work organisation were deeply reminiscent of the humanisation movement.

Equally, however, the influence of scientific management as an opposing theory was also apparent, most starkly through the inclusion of the inverted principle of the 'adaptation … of each man to his job' in the Joint Committee's definition of occupational health and safety.[77] References to the 'assignment to jobs for which they are suited' in Recommendation 112[78] resonates with Frederick Taylor's claim that a 'man who is well suited to his job will thrive'.[79] The tasking of occupational health services with being 'thoroughly familiar with the jobs and with the muscular effort, sensory co-ordination and psychological and physiological aptitudes involved'[80] is equally reflective of the contemporaneous studies on vocational psychophysiology which examined 'how a man can be adapted to work' by researching the psychophysical structure of man in order to reduce industrial fatigue and increase output.[81]

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[74] ILC, 'Record of Proceedings: Thirty-Third Session' (1950) 92.

[75] Joint Committee (n 68 (1957)) 7.

[76] ILC Report (n 60 (1958)) 31; Joint Committee (n 68 (1957)) 8.

[77] Joint Committee (n 55) 2.

[78] Recommendation 112 (n 65) para 1(b).

[79] Taylor (n 7) 37.

[80] ILC Report (n 60 (1958)) 14.

[81] Leon Walther, 'Some Experiments in Vocational Psychophysiology' (1926) 14 International Labour Review 55, 56.

There is limited European literature on the principle during the 1950s, but the general direction appeared to be close alignment with the ILO's approach. The European Coal and Steel Community released a document on safety in coalmines which discusses 'adaptation to work at the colliery' that called for adherence to the 'ILO Model Code'.[82] In 1962, the Commission issued a recommendation which endorsed Recommendation 112 and stated that the principle of adapting work to the worker benefited both the worker and employer through increased trust and productivity, which mimics the sentiments of the ILO and the human relations approach.[83]

The 1950s were therefore marked by two alternative principles – adapting work to the worker and adapting the worker to work. Whilst the duality of principles might appear contradictory, it likely reflected the prevailing view that economic progress led to social progress. The ILO's focus during this period had been on simultaneously securing productivity and improving working conditions,[84] so the parallel existence of the two principles is unsurprising in context. It was also reflective of the lack of agreement over which approach – human relations or scientific management – was most effective. This dual approach, however, changed decisively in the following decades.

[82] European Coal and Steel Community, 'Report on the Conference on Safety in Coalmines' (No. S 360/57 1957) 6. The report refers to ensuring the adaptation to their jobs prevents 'any over-taxing of their capacity or psychological reaction', 'deterioration in working climate of the mine' due to strenuous piece rates, and the 'adaptation of the newcomers to their new living and working conditions' on pages 116, 125, 104, respectively.

[83] Commission, 'Empfehlung der Kommission an die Mitgliedstaaten betreffend die betriebsärztlichen Dienste in den Arbeitsstätten' (Amtsblatt der Europäischen Gemeinschaften 1962) 2181/62, para 14. There was no official English translation.

[84] Rodgers and others (n 62) 97.

1960s and 1970s: Humanisation of Work Movement

The 1960s and 1970s marked the heyday of the humanisation of work movement, and this is reflected in the legislative history of the principle. There was a firm rejection of scientific management and the principle of adapting the worker to work. Instead, the period was characterised by ILO and EU resolutions calling for a rethinking of the workplace and articulating broad visions for reorganising work. The concern was not just occupational health and safety, but the 'working environment' more generally. This change reflected a wider shift in the European Community's view on economic progress: it was felt that social progress would not inevitably follow on from economic growth, but rather needed to be developed and addressed separately.[85]

During this period, the Council issued a resolution calling for a social action programme for workers aimed at 'the humanization of their living and working conditions' through the 'gradual elimination of physical and psychological stress' by 'increasing job satisfaction' and 'a reform of the organisation of work'.[86]

The ILO's many resolutions during the 1970s adopted a similar tone. They called for labour standards which would address 'work causing harmful stress and dehumanising work,' promote industrial democracy, and were aimed at 'controlling hazards, improving the working environment and adapting work to the human being'.[87] The ergonomic strand of the humanisation movement also featured in these discussions. The ILO emphasised the 'progressive shift of emphasis from corrective

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[85] Aude Cefaliello, 'Towards an Improvement of the Legal Framework Governing Occupational Health and Safety in the European Union' (PhD thesis, University of Glasgow 2020).

[86] Council Resolution of 21 January 1974 concerning social action programme [1974] OJ C13/1, 3.

[87] ILO (n 20 (1976)) 337.

ergonomics to conceptual ergonomics', which it claimed was broader than strict occupational health and safety, and concerned issues of stress, workload, pace and comfort at work.[88]

These resolutions calling for the humanisation of work were of major significance because, as will be seen, they formed the basis for the EU and ILO legislation on health and safety which was developed during the next decade.

In addition to the resolutions, there was one legislative instrument during this timeframe which included the humanisation principle: ILO Recommendation 120 on Office Hygiene.[89] Paragraph 59 requires that 'work methods should as far as possible be adapted to the requirements of hygiene and to the physical and mental health and comfort of workers'. During the drafting process, the influence of the humanisation of work principle was clear: reference was made to the 'recent trend towards greater adjustment of the man to his work' aimed at creating 'more favourable conditions for each worker'.[90] Driven by a concern over the mechanisation and commercialisation of office tasks, Paragraph 60 of the Recommendation states that the pace of mechanised tasks should not 'produce harmful effects on workers' such as physical and mental fatigue, mirroring the concern over the pace of the production line seen in the humanisation literature. Under Paragraph 61, the Recommendation states that 'work breaks… systems of work distribution or rotation of jobs' should be used to limit any harmful effects, which again deploys quintessential techniques of the humanisation movement.

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[88] PIACT (n 54 (1976)) 10.

[89] Recommendation 120 (n 65).

[90] ILO, 'Record of Proceedings: Hygiene in Commerce and Offices' (48th Session 1964) 397.

This Recommendation became the first in a line of occupational health and safety instruments to contain the principle, as will be seen in the following years.

1980s: Formalisation of Occupational Health and Safety

The 1980s was a notable decade because it marked the beginning of a divergence between the social history of the humanisation movement and the legislative history of the principle. Whilst most regarded the humanisation of work *movement* as dissipating by the 1980s, the legislative agenda set in the 1970s (at the height of the movement) was subsequently implemented. The 1980s therefore amounted to the most important decade for the humanisation of work *principle*, despite being largely irrelevant for the social movement.

During this period, the humanisation principle became formalised in several major legislative instruments. There were three ILO and one EU instruments on occupational health and safety which designated the humanisation of work as a guiding principle. This section analyses each instrument in turn to discuss the connection of the provisions to the humanisation of work movement. It highlights how iterations of the principle became more constrained, arguably due to the change in political outlook during the 1980s, and the emphasis on different strands of the movement, notably ergonomics.

At the EU level, the most significant development was the inclusion of the humanisation principle in the Framework Directive on Safety and Health.[91] As

[91] Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work [1989] OJ L183/1.

discussed in Chapter 2, this directive was designed as the 'mother' directive which laid down general principles and guidelines for all subsequent occupational health instruments. Article 6 stated that employers should follow the general principles of prevention at all times, which included the principle of:

> '(2)(d) adapting the work to the individual, especially as regards the design of workplaces, the choice of work equipment and the choice of working and production methods, with a view, in particular, to alleviating monotonous work and work at a predetermined work-rate and to reducing their effect on health.'

Whilst there was no definition of the 'adapting work to the individual' provided in the Framework Directive on Safety and Health or the drafting materials, the surrounding terms and early drafts clearly linked it to the humanisation of work movement. For instance, the words 'monotonous' work and 'predetermined work-rate' are hallmarks of the humanisation movement, which focused on the dull, rapid, and soulless nature of factory lines. The Commission's first draft similarly underscored the influence of the humanisation movement: it contained the principle of 'adapting work to the man' which was elaborated upon as requiring employers to consider 'ergonomic principles', permit 'workers to organize their work in accordance with their capabilities', avoid 'monotonous… repetitive activities' and a work rate 'governed by a machine or conveyor belt'.[92] The direct reference to factory life, through the 'machine or conveyor belt', indicates that the provision was drafted with the movement in mind, and the idea of allowing workers to organise their own work in accordance with their capabilities is highly reflective of Volvo's foundational humanising experiments. The

[92] Commission, 'Proposal for a Council Directive on the introduction of measures to encourage improvements in the safety and health of workers at the workplace' COM(88) 73 final, 3-4.

draft also required worker and employer 'cooperation' over the impact of new technology on workers' 'physical and psychosocial wellbeing',[93] which again reflects the humanisation movement's focus on human emotional needs and worker autonomy over new technologies.

The European Economic and Social Committee proposed extending the Commission's draft to include protection against the risk of 'excessive physical nervous and mental strain caused by heavy work, shift work, night work, fixed posture, monotonous and unvaried work processes, pressure of deadlines, high-speed work, working time and work organization.'[94] The European Parliament similarly expanded upon the provision by stating that, where adaptation 'is not feasible', measures such as 'special breaks', 'maximum … hours' and 'rota arrangements' could be used.[95] Both revised drafts therefore continued to incorporate concepts from the humanisation movement – for instance, the 'pressure of deadlines' and 'unvaried work processes' is a challenge to the Taylorist approach, and the measures suggested by the European Parliament (notably rota arrangements) are techniques taken directly from the humanisation experiments. Hence, Article 6(2)(d) itself and the drafts behind it are emblematic of the humanisation movement due to the focus on work design, monotony, and pace. This is ultimately not surprising, given that the instrument was initiated by the resolutions of the 1970s calling for the humanisation of work.

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[93] ibid 3.

[94] Economic and Social Committee, 'Opinion on the proposal for a Council Directive on the introduction of measures to encourage improvements in the safety and health of workers at the workplace' [1988] C175/22, 23.

[95] European Parliament, 'Legislative Resolution Embodying the Opinion of the European Parliament on the Proposal for a Directive on the Introduction of Measures to Encourage Improvements in the Safety and Health of Workers at the Workplace' [1988] OJ C 326/78, 77.

The Court of Justice (CJEU) is yet to interpret Article 6(2)(d), and there has so far only been one explicit reference to the provision. The Advocate General in *Commission v UK* stated that the principle of adapting work to the worker 'appears to give priority to protecting the individual worker rather than financial enterprise'.[96] This remark, whilst limited, does support the drafting materials, which ultimately emphasise the need to make the man-machine relationship more humane.

Turning now to the international level, the ILO also adopted its major framework instruments on occupational health and safety during the 1980s. The humanisation principle featured in three of the four instruments: Convention 155 on Occupational Health and Safety, Convention 161 on Occupational Health Services and the accompanying Recommendation 171 on Occupational Health Services.[97]

Focusing first on Convention 155, the instrument requires States to develop a national policy on occupational health and safety and sets out principles which should govern the policy. One of the guiding principles, found in Article 5(b), requires that national policy take account of the:

> 'adaptation of machinery, equipment, working time, organisation of work and work processes to the physical and mental capacities of the workers'.

The drafting materials and reports behind this provision demonstrate the influence of the humanisation movement. Drafters highlighted the issues of 'poorly

[96] Case C-127/05 *Commission v United Kingdom* [2007] ECLI:EU:C:2007:72 Opinion of AG Mengozzi, para 4649.

[97] Full references are found in footnote 65.

designed work',[98] 'monotony, emotional stress',[99] 'the worker being an extended part of the machine',[100] 'arduous' work[101] and the mental strain and stress resulting from 'fragmented, repetitive tasks';[102] all of which are emblematic of the humanisation movement's focus on workers being treated as a machine. Jean de Givry, the 'brainchild' behind the ILO's programme on humanisation (PIACT),[103] described the humanisation movement as aimed to 'adapt the working environment to the physical and mental capacities of working men and women' in order to improve the environment to make it 'less hostile and more human',[104] which is the same language used in Article 5(b). It is also reflective of the ILC's report on Convention 155, which acknowledged that the Convention was a result of the resolutions issued in the 1970s which pushed the 'fairly new development in occupational protection policy, namely the desire to make work more human' and 'less hostile'.[105] Similarly, the ILO Director-General at the time referred to how the humanisation experiments conducted by Volvo resulted in the pace of factory line work being 'adjusted to the capabilities of the average worker', which is almost identical to the language in Article 5(b).[106]

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[98] ILO, 'Report VII(b) Amendment of the List of Occupational Diseases Appended to the Employment Injury Benefits Convention' (ILO 1980) 74.

[99] As stated by Poland in ILO (n 58) 35.

[100] As stated by the worker's adviser, Vice-Chairman of the Committee of Safety and Health in ILO, 'Record of Proceedings' (ILC 67th Session, 1981) 30/3.

[101] ILO (n 100) 25/13.

[102] ILO (n 98) 21.

[103] Rodgers and others (n 62) 100.

[104] de Givry (n 47) 266.

[105] ILC, 'Report VII(a)(1) Safety and Health and the Working Environment' (ILC 66th Session, 1980) 2.

[106] ILO Director-General (n 16) 55.

There was push back during the drafting of the provision, particularly its inclusion of working time: employers group argued that it 'enlarged the scope and aims of the instrument too much' and was better suited to industrial relations not occupational health and safety.[107] This tied into the overarching debate of Convention 155, which was whether to include 'wellbeing' in the definition of health. The Convention ultimately omitted the term wellbeing, which may arguably be why the humanisation principle in Article 5(b) appears more muted, since it only refers to adaptation to workers' physical and mental capacities rather than a wider, more ambitious remit which includes social and emotional needs. Denmark, for instance, suggested replacing 'capacities' with 'needs', but the employers' group pushed against this.[108]

Nevertheless, Convention 155 is of particular importance due to its status in international labour law. In 2022, the Convention was elevated to a Fundamental Convention at Work, which means that all ILO Members, by virtue of their membership, endorse and undertake to work towards the Convention's objectives, even if they have not ratified it.[109] Hence, the inclusion of the humanisation principle, as found in Article 5(b), is significant due to its wide-reaching influence.

In addition to Convention 155, two other instruments were introduced shortly after – Convention 161 and Recommendation 171 – which also included the humanisation principle. The instruments sought to update the previous Recommendation 112 on Occupational Health Services. The debate running through

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[107] ILO, 'Report VI (1) Safety and Health and the Working Environment' (ILC 67th Session, 1981) 18.

[108] ILO 'Report IV (2) Occupational Health Services' (ILC 71st Session, 1985) 16.

[109] ILO Declaration on Fundamental Principles and Rights at Work and its Follow-up (ILC 86th Session 1998, amended at ILC 110th Session 2022).

the drafting of Convention 161 and Recommendation 171 was whether to retain the 'traditional concept of *médecine du travail*' (aimed at preventive medical action) or to reimagine occupational health services through a broader, multidisciplinary approach (aimed at considering 'psychosocial [aspects] so as to secure the best adaptation of the occupational environment to human aptitudes').[110]

Critical to ensuring this modernisation push was the principle of 'adapting work to the worker', which was an amendment proposed by the Nordic governments and workers' members with the intent to 'broaden [the] scope' of occupational health services.[111] The principle was included in Article 1(a)(ii) Convention 161, which defined occupational health services as responsible for 'the adaptation of work to the capabilities of workers in the light of their state of physical and mental health', with the function under Article 5(g) of 'promoting the adaptation of work to the worker'.

In the drafting reports, the Office referred to conceptual ergonomics as a 'multidisciplinary effort to adapt work to the man … not only to prevent accidents and … fatigue, but also to foster a sense of satisfaction and well-being at work'.[112] The Office also discussed how the impacts of piece-rate pay on workers, productivity bonuses, isolation, overcrowding, clientele interactions and human relations which led to stress could be reduced through the 'adaptation of work to the man'.[113] The legacy of the humanisation movement was clear, with considerable discussion of the inclusion

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[110] ILO (n 108) 12.

[111] ILO, 'Report IV(1) Occupational Health Services' (ILC 71st Session, 1985) 12.

[112] ILO, 'Report V(I) Occupational Health Services' (ILC 70th Session, 1984) 27–28.

[113] ibid 29.

of psychosocial risks during the drafting period by Panama and the Nordic countries.[114] The principle also featured in Recommendation 171 under Article 8(e) which required occupational health services to collaborate in job analysis ‘with a view to securing a better adaptation of work to the workers’ and in Article 21 which outlined the advisory role of the services on health, hygiene and ergonomics in ‘promoting the adaptation of work to the workers’.

The modernisation move was not without critics: during the drafting proceedings, the US employers members suggested Convention 161 and Recommendation 171 were using occupational health and safety as a ‘Trojan horse’ for worker issues unrelated to health.[115] The inclusion of a role for social partners in Article 8 Convention 161 and Paragraph 33 Recommendation 171 was particularly contested.[116] For others, ‘adapting work to the worker’ simply was unclear, with Bangladesh and Pakistan arguing that the principle made no sense.[117] In a curious response, the Office explained that ‘adding more detail to the provision would not clarify it either’.[118]

The extent to which occupational health services were in fact modernised by the instruments can be disputed. The Office commentary referred to ‘the importance

[114] ILO (n 108); ILO, ‘Report V(2) Occupational Health Services' (ILC 70th Session,1984).

[115] ILO, ‘Record of Proceedings' (ILC 71st Session, 28th Sitting, 1985) 35/7.

[116] Most notably in ILO (n 115).

[117] Bangladesh in ILO (n 108) 16 stated that the provision was impractical and should therefore be amended for skills to be adapted to the work rather than for work to be adapted to the capabilities of individual workers; Pakistan in ILO (n 56 (1984)) 55 stated the provision would be difficult to implement, and called it 'impractical' in ILO, ‘Report VII (a)(2) Safety and Health and the Working Environment: 66th Session' (International Labour Conference, 1980), 27.

[118] ILO (n 108) 17.

that will be assumed in the future by the psychosocial and mental health aspects', suggesting that the existing instruments had not yet fully encapsulated them.[119] Regardless, the humanisation principle was seen as critical towards the push for a wider approach to wellbeing at work.

To conclude this section, the 1980s was an important decade for introducing the principle of adapting work to the worker as a guiding principle in both EU and ILO occupational health and safety frameworks. Whilst the four instruments featured slightly different variations of the principle, some more constrained than others, the influence of the humanisation movement was clear. This influence then continued into the next decades through a string of implementing instruments, as will now be examined.

1990s - 2010s: Follow-on Iterations

During the 1990s, the humanisation principle featured seven occupational health and safety instruments which sought to further the EU and ILO framework instruments introduced in the 1980s. This section will briefly outline these instruments and the drafting materials behind them, to underscore the continued legacy of the humanisation movement. Whilst the iterations of the humanisation principle during this period are slightly varied, they remain closely aligned to the interpretations of the principle in the framework instruments.

[119] ILO (n 108) 12.

The most notable implementing directive to include the humanisation principle at an EU level was Article 13 Working Time Directive, which is the focus of this thesis. As outlined in Chapter 2, the provision states that measures shall be taken to ensure that 'an employer who intends to organise work according to a certain pattern takes account of the general principle of adapting work to the worker, with a view, in particular, to alleviating monotonous work and work at a predetermined work-rate… and of safety and health requirements'.

The wording of the provision is almost identical to Article 6(2)(d) Framework Directive on Safety and Health, indicating that it has been taken directly from the 'mother' directive. This is corroborated by the drafting materials behind the WTD, which do not offer significant insight into the meaning of the principle.

Records show that there was no inclusion of the principle of 'adapting work to the worker' in earlier drafts. Instead, the first draft (Article 11) simply stated that employers should take account of 'health and safety requirements' when changing patterns of work.[120] The Commission's explanatory memorandum focused on the increasing 'dissociation of individual working time and operating hours' and the need to address the 'biological costs' of changing rhythms, since 'the body cannot adapt completely to such working hours'.[121] The European Economic and Social Committee then suggested widening the article to all patterns of working time (not just *changes* in

[120] Commission, 'Proposal for a Council Directive on Certain Aspects of the Organization of Working Time' (Explanatory Memorandum) COM (90) 317 final.

[121] ibid 5, 15.

patterns),[122] whilst the European Parliament and Committee on Women's Rights regarded the article as concerning night work.[123] It was not until the last-minute Council negotiations that the principle of adapting work to the worker appeared in the text.[124]

Given the 'highly contentious' council negotiations,[125] it perhaps seems surprising that the humanisation principle was inserted. The framing of Article 13 is noteworthy firstly in that it does not include reference to the other 'principles of prevention' in Article 6 Framework Directive on Safety and Health, indicating that the humanisation principle had been selected for its specific meaning. Secondly, the provision references 'safety and health requirements' as a *separate* consideration from the humanisation principle, which further indicates a unique meaning of the humanisation principle.[126]

There is limited CJEU case-law on Article 13 Working Time Directive, which therefore heightens the reliance on drafting materials for insight into the meaning of the provision. References to the principle appear in *Coca-Cola v LB and RB* where the CJEU linked Article 13 to patterns of night work but did not elaborate further,[127] and in *UK v Council,* where both the CJEU and the Advocate General's Opinion linked

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[122] European Economic and Social Committee, 'Opinion on the proposal for a Council Directive concerning certain aspects of the organization of working time' [1991] C60/26.

[123] European Parliament, 'Decision on the common position established by the Council with a view to the adoption of a Directive concerning certain aspects of the organization of working time' [1993] OJ C315/125, 127; Committee on Women's Rights, 'Opinion of the Committee on Women's Rights' [1991] Document A 3-0378/90.

[124] European Industrial Relations Review 222 (1993) 2.

[125] European Industrial Relations Review 220 (1993) 2.

[126] Bogg (n 2) suggests occupational health and safety is a subset of the humanisation principle in Article 13.

[127] Joined Cases C-257/21 and C-258/21 *Coca-Cola European Partners Deutschland GmbH v LB and RG* [2022] ECLI:EU:C:2022:529, para 48.

Article 13 to Recital 4 of the WTD preamble, which states that the improvement of workers' health should not be subordinated to purely economic considerations.[128] The remarks in *UK v Council* resonate with the Advocate General' interpretation of Article 6(2)(d) Framework Directive on Safety and Health in *Commission v UK,* discussed above, which again suggests that Article 13 was taken directly from the Framework Directive on Safety and Health.

In addition to the WTD, the humanisation principle features in two other EU working time instruments. Paragraph 16 of the Working Time Waterway Agreement contains an exact replica of Article 13,[129] and the humanisation principle was also included verbatim in the Working Time Aviation Agreement, under Clause 6 which states that:

> 'Necessary measures will be taken to ensure that an employer, who intends to organise work according to a certain pattern, takes account of the general principle of adapting work to the worker'.[130]

A looser iteration of the humanisation principle can also be found in the Display Screen Equipment Directive which requires in Paragraph 3 of the Annex that display screen equipment must be 'adaptable to the operator's level of

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[128] Case C-84/94 *United Kingdom of Great Britain and Northern Ireland v Council of the European Union* [1996] ECLI:EU:C:1996:431 paras 28-29 state that the WTD is not necessarily conceived as an instrument of employment policy, otherwise Recital 5 (now 4) would require economic considerations to be taken into account, and that this approach was supported by other provisions such as the principle of adapting work to the worker. Similarly, Opinion of AG Léger, paras 94–95, stated that the WTD is not an instrument for combating under-employment because, 'on the contrary' the preamble emphasises that health should not be 'subordinated to purely economic considerations' and that this 'protective purpose transpires, in particular, from the 15th recital which emphasises … the organisation of work according to a certain pattern must take account of the general principle of adapting work to the worker.'

[129] Council Directive 2014/112/EU of 19 December 2014 implementing the European Agreement concerning certain aspects of the organisation of working time in inland waterway transport [2014] OJ L367/86, para 16.

[130] Council Directive 2000/79/EC of 27 November 2000 concerning the European Agreement on the Organisation of Working Time of Mobile Workers in Civil Aviation [2000] OJ L302, Clause 6.

knowledge or experience' and information must be displayed 'at a pace which are adapted to the operators'.[131] The drafting materials allude more firmly to the humanisation movement, with concerns over 'excessive mental strain and fatigue',[132] 'psychosocial factors',[133] 'monotonous procedures',[134] 'stress and ergonomic problems… and an unbalanced workload',[135] as well as the 'adaptation … of computer programmes to the intellectual characteristics' of workers[136] – all of which suggest a concern for worker wellbeing beyond physical health. The initial draft also included Paragraph 9, titled the 'Organisation of Work', which called for varied tasks, a mixture of work and regular breaks,[137] which are highly reminiscent of the job rotation and enrichment strategies of the humanisation movement.

Similarly, the Young Workers Directive contained remnants of the humanisation principle. Paragraph II of the Annex contains a list of the specific risks to young people caused by 'processes and work' which includes 'work the pace of which is determined by machinery and involving payment by results.'[138]

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[131] Council Directive 90/270/EEC of 29 May 1990 on the minimum safety and health requirements for work with display screen equipment [1990] OJ L 156, Annex para 3(b).

[132] European Parliament, 'Decision on the on the common position drawn up by the Council with a view to the adoption of a directive on the minimum safety and health requirements for work with display screen equipment' [1990] OJ C113/75.

[133] Commission, 'Proposal for a Council Directive Concerning the Minimum Safety and Health Requirements for Work with Visual Display Units' COM (88) 77 Final, 9.

[134] European Economic and Social Committee, 'Opinion on the Proposal for a Council Directive Concerning the Minimum Safety and Health Requirements for Work with Visual Display Units' [1988] OJ C318/13, 35.

[135] European Parliament, 'Opinion on the Proposal from the Commission to the Council for a Directive on the Minimum Health and Safety Requirements for Work with Visual Display Units' [1988] OJ C12/92, 102.

[136] European Economic and Social Committee (n 134) 35.

[137] European Parliament (n 135) 102.

[138] Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work [1994] OJ L 216, Annex para II(9).

In terms of ILO instruments during this era, Convention 171 on Night Work evokes the humanisation principle in Article 10 by stating that:

> 'Before introducing work schedules requiring the services of night workers, the employer shall consult the workers' representatives concerned on the details of such schedules and the forms of organisation of night work that are best adapted to the establishment and its personnel as well as on the occupational health measures and social services which are required.'[139]

This provision is noteworthy in that it predates Article 13 WTD but takes on a similar structure: the obligation applies *before* schedules are organised and requires consideration of adapting work to workers and the enterprise *in addition to* consideration of occupational health and social measures.

Recommendation 192 on Health and Safety in Agriculture also contains fragments of the humanisation movement, as Article 6 states that measures should be taken to ensure the 'adaptation of technology, machinery and equipment, including personal protective equipment, taking into account local conditions in user countries and, in particular, ergonomic implications and the effect of climate'.[140]

Hence, during this period, it was relatively straightforward to trace the various iterations of the humanisation principle back to the overarching framework instruments on occupational health and safety. This changed in 2017 with the advent of the European Pillar of Social Rights, which took the principle in a different direction.

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[139] Convention 171 (n 65).

[140] Recommendation 192 (n 65).

2017 Onwards: Individual Adaptations

After a hiatus in EU legislation on working conditions, the next major iteration of the humanisation principle was found in the European Pillar of Social Rights (the Pillar). The Pillar is notable for embracing a strand of the humanisation movement that, whilst not central, has always existed in discussions of the movement: the adaptation of work to *specific* workers. This section analyses this development, and explains how the Pillar has further influenced subsequent legislation containing the humanisation principle.

In 2017, the Pillar was introduced as a political commitment to 'raise the profile of social policy' within the EU.[141] It has become an important instrument for steering the EU's approach to social policy since the 2008 financial crash and the austerity measures that followed. The Pillar lists a set of principles that should guide Union action in the single market, including an iteration of the humanisation principle. Principle 10, headed 'Healthy, safe and well-adapted work environment', states that:

> 'Workers have the right to a working environment adapted to their professional needs and which enables them to prolong their participation in the labour market'.

The drafting materials behind the Pillar show the influence of the humanisation principle, albeit with a focus on the *specific* adaptation strand. The Commission's accompanying explanation to the Pillar referred explicitly to Principle 10 as a 'key measure', since it 'goes beyond the existing social acquis' and introduces 'two inter-

[141] Sacha Garben, 'The European Pillar of Social Rights: An Assessment of Its Meaning and Significance' (2019) 21 Cambridge Yearbook of European Legal Studies 101, 101.

related rights'.[142] The Commission argued that it firstly afforded workers the right to a working environment adapted to their specific occupational circumstances, which de Schutter has suggested extends the equality right to reasonable accommodation for disabled workers to all workers.[143] The Commission further argued that it introduces a secondary 'principle of active ageing' which requires adaptations of the working environment to older workers, for instance through better lighting or flexible hours.[144] This is reflective of the European Social Partners' Autonomous Agreement on Active Ageing which encourages the implementation of 'adaptable work organisation over the life course'.[145] It also tied in with more recent discussions at the World Assembly on Ageing,[146] WHO,[147] International Commission on Occupational Health[148] and ILO for adaptations for an ageing workforce.[149]

This facet of the humanisation of work movement –adaptations for *specific* workers– has been part of legislative history of the principle since the beginning, from Recommendation 112 in the 1950s[150] to the humanisation literature in the 1960s and

[142] Commission Staff, 'Communication from the Commission to the European Parliament, the Council, the European and Social Committee and the Committee of the Regions Establishing a European Pillar of Social Rights' (Working Document) SWD (2017) 201 final, 65, 39, 42.

[143] Olivier de Schutter, 'The European Pillar of Social Rights and the Role of The European Social Charter in the EU Legal Order' (Council of Europe 2018) 40.

[144] This was also discussed in Commission, 'Launching a Consultation on a European Pillar of Social Rights' (Communication) COM (2016) 127 Final.

[145] European Social Partners' Autonomous Framework Agreement on Active Ageing and an Inter-Generational Approach [8 March 2017] 7.

[146] Benjamin Alli, 'Fundamental Principles of Occupational Health and Safety' (ILO 2008) 8.

[147] Jorma Rantanen and Igor Fedotov, 'Standards, Principles and Approaches in Occupational Health Services' (ILO 2002) 23.

[148] Jorma Rantanen, 'The Principles of Occupational Health' in Tee Guidotti (ed), *Global Occupational Health* (OUP 2011); Jorma Rantanen, 'Global Strategy on Occupational Health for All' (WHO 1995); Rantanen and Fedotov (n 147).

[149] ILO (n 108) 12; ILO Director-General (n 16) 48.

[150] Recommendation 112 (n 65) Paragraph 8(e) requires the 'adaptation of jobs to workers, in particular handicapped workers'.

1970s (as discussed in Part I). The Pillar, however, brings this facet into the foreground.[151]

Since the introduction of the Pillar, the humanisation principle as requiring adaptations for specific, individual needs has started to feature more frequently in EU instruments on worker rights. Examples include the Commission's proposed Traineeship Directive which requires 'workplaces, training, digital tools, office and work equipment to be adapted to individual needs'[152] or the European Parliament Resolution on Digital Work which recalls the 'the right of all workers …. to professional development adapted to their individual needs'.[153] This suggests a resurgence of the principle with a stronger focus on adaptations for specific individuals rather than adaptations for a generic workforce.

To conclude, this section has analysed the legal history of the long-standing humanisation principle. It demonstrated that, whilst the principle of adapting work to the worker was only tentatively developing in the 1950s, it came to the fore in the 1970s and was then formalised as a guiding principle for workers' health and safety in the 1980s. After several follow-on iterations of the principle, it has since had a recent resurgence with a focus of adaptations for specific workers. Uniting all timeframes, however, was the underlying influence of the humanisation movement, captured by a

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[151] Possible reasons for this could be found in the parallels between the rise in the specific needs strand, which is focused predominantly on *individual* needs, and the rise of individualisation or the 'humanisation' of supranational law during the same period (see, for example, Theodor Meron, *The Humanization of International Law* (Hague Academy of International Law 2006); Anne Peters and Tom Sparks, *The Individual in International Law* (OUP 2024)). This discussion, however, is outside the scope of the thesis.

[152] Commission, 'Proposal for a Directive of the European Parliament and of the Council on Improving and Enforcing Working Conditions of Trainees and Combating Regular Employment Relationships Disguised as Traineeships' COM (2024) 132 final, Principle 24.

[153] European Parliament Resolution of 5 July 2022 on Mental Health in the Digital World of Work (2021/2098(INI).

concern over monotonous, strenuous, and repetitive patterns of work driven by scientific management and machine-led work.

Building on this legislative history, and the social context outlined in Part I, the chapter will now consolidate this research to demarcate the core obligations of the humanisation principle.

Part III: Interpretative Framework for the Humanisation of Work Principle

Commentators, from ILO officials to academics, have remarked that the humanisation movement is 'difficult to translate'[154] and 'usually not amendable to legislative treatment' though 'just as real'.[155]

This is because the essence of the humanisation movement – that workers should not be treated as machines – is challenging to encapsulate into a legal duty. Even determining which area of labour law the principle comes under has proved difficult; for instance, whether it falls under occupational health and safety or is more aligned to issues of dignity, equality and industrial relations.

This section addresses this by pinpointing the scope, substance, and nature of the principle of 'adapting work to the worker'. The interpretative framework draws upon the research outlined in Part I and II: the aim is to distil the meaning from the historical materials in a way which most accurately reflects the principle's development, terminology, and stands of interpretation used across the decades. It will

[154] Neal Herrick, 'Government Approaches to the Humanization of Work' (1973) 96 Monthly Labor Review 52, 53.

[155] ILC (n 105) 24.

be argued that the scope of the principle applies specifically to *work organisation,* that the substantive duty is to adapt work to *human needs* (divided into physical, psychosocial and specific), and that discharging the duty requires *worker input.*

Scope of Application

Turning first to the scope, it is clear that the principle is concerned with the 'the prerogative of work design',[156] also known as 'work organisation'. It looks specifically at the 'nature and content' of the job,[157] as opposed to 'employment' issues such as wages, status, pensions and others.[158] It applies to the employer's choice in how to organise work, from the working methods used, to working time, supervision, design of workplaces and equipment used.

This is evident from the framing of the iterations of the principle in the various instruments. Article 6(2)(d) Framework Directive on Safety and Health states that the principle applies 'to the design of workplaces, the choice of work equipment and the choice of working and production methods', and Article 5(b) Convention 155 applies the principle to 'machinery, equipment, working time, organisation of work and work processes'. Both of these high-profile instruments identify the scope of the humanisation principle as applying specifically to work organisation or design, rather than the remit of employment issues.[159] More recently, this scope is reflected in the

[156] Houck (n 14) 460.

[157] O'Toole and others (n 18) 4.

[158] Guest and others (n 6), as discussed above.

[159] Montuschi (n 5) 155 highlights how Article 6(2)(d) Framework Directive on Health arose from movement in which 'trade unions and rank-and-file organisations claimed the right to discuss the organisation of work with the employer', thus confirming the focus on work organisation.

Pillar which applies the principle to the 'working environment',[160] and the draft Traineeship Recommendation, which requires that 'workplaces, training, digital tools, office and work equipment' adapted to individual needs.[161]

The humanisation principle is therefore significant in that it limits the employer's prerogative to organise work. Labour law typically affords employers substantial leeway to choose how to organise work, subject to certain fundamental rights, for instance, that workers should be entitled to working time limits, the duty of care and a safe workplace. These rights aside, however, employers generally have the 'right to manage': they are free to determine which tasks workers do, how they should do them, and how much effort should be expended.[162] The principle of adapting work to the worker is therefore critical in shaping the employer's prerogative in this area.[163]

Substantive Meaning of the Principle

Turning now to the substantive duty, the principle can be synthesised as requiring employers to consider human needs – be it physical, psychosocial or specific – when organising work.

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[160] Pillar (n 64) Principle 10(b).

[161] Commission (n 152) Principle 24.

[162] Subject to industrial relations, see John Storey, 'Workplace Collective Bargaining and Managerial Prerogatives' (1976) 7 Industrial Relations Journal 40, 40-41.

[163] This is reflected in Bercusson's (n 3) 332 statement that, in the context of Article 13, the humanisation principle is significant because 'the upshot is that the organisation of working time is no longer the exclusive managerial prerogative of the employer, but is a process of mutual accommodation'.

The term ‘human needs’ appears broad, yet it is frequently used in connection to the humanisation principle. It was relied upon in the 1950s by the Joint ILO/WHO Committee, who discussed the planning of tasks around ‘human emotional needs’[164] and the ‘reorganisation of general work process to fit human needs’.[165] In the 1970s, the ILO summarised the principle as ‘taking the human needs and characteristics of workers into account’,[166] the Ford Foundation considered the humanising strategies as ‘focus[ed] on human needs at the workplace’,[167] and the ILO Director-General described it as ‘adjusting the technological environment, work schedules and working methods to human needs’.[168]

Other related phrasing included adapting work to the ‘social and psychological needs of the worker’;[169] ‘adapting work and the work environment to their individual needs’;[170] adapting work to the ‘needs and potential’ of workers;[171] and making work ‘more compatible with the needs and expectations of workers’.[172] In the 1990s, the lead academic authority on the humanisation principle in Article 13 WTD, Brian Bercusson, also framed the principle as requiring the adaptation of work patterns to ‘suit [the worker’s] needs’, subject to the justifiable needs of the employer.[173] Since Bercusson’s

[164] Joint Committee (n 62 (1953)) 11.

[165] Joint Committee (n 62 (1953)) 12.

[166] ILO (n 22) 1.

[167] US Senate (n 27) 131.

[168] ILO Director-General (n 15) 36.

[169] ILO Director-General (n 15) 37.

[170] Rantanen (n 148 (1995)) 16.

[171] ILO Resolution 1975 (n 55).

[172] ILO (n 54 (1984)) 21.

[173] Bercusson (XX) 332.

work, academics have continued to rely on the term 'human needs' in relation to Article 13 WTD.[174]

Digging deeper into the drafting materials and historical literature, the reference to 'human needs' can then be broken down into three aspects: physical, psychosocial and specific needs of workers.

The duty, first, clearly entails work to be adapted to the physical needs of workers. This is evident from the numerous iterations of the principle which explicitly refer to the obligation to adapt work to the physical capabilities, abilities or aptitude of the worker.[175] Examples of adaptations taken from the drafting materials and instruments include rotating night shift patterns to minimise the 'biological costs' on the body, [176] or additional breaks where the pace of work is predetermined to prevent excessive physical nervous strain.[177]

The obligation to adapt work to the physical needs of workers is also evidenced by the many references to 'ergonomics' in the drafting materials, seen at the ILO, EU and national level.[178] Whilst there is disagreement over the meaning of ergonomics, as

[174] Bogg (n 2) 746; Alan Bogg and Michael Ford, 'Article 31' in Steve Peers and others (eds), *The EU Charter of Fundamental Rights: A Commentary* (Hart Publishing 2021) 910; Gábor Kártyás, 'Less Human but More Effective?' (2024) Pázmány Law Review 67, 76; Catherine Barnard, *EU Employment Law* (OUP 2012) 555; Jeffrey Kenner, 'Regulating Working Time – Beyond Subordination' in Stephen Weatherill (ed), *Better Regulation* (Hart Publishing 2007) 201.

[175] See, for example, Convention 155 (n 63) Article 5(b); Recommendation 112 (n 65) Article 1(b); The Joint ILO/WHO Committee (n 53) 2 referred to the 'placing and maintenance of the worker in an occupational environment adapted to his physiological … equipment'; Recommendation 120 (n 65) para 59; ILO Resolution 1974 (n 19) refers to the 'adaptation of installations and work processes to the physical and mental aptitudes of the worker'; Council Resolution 1978 (n 24) refers to 'physical… adjustment'; Convention 161 (n 65) Article 1(a)(ii).

[176] Commission (n 120) 13.

[177] European Economic and Social Committee, 'Opinion on Proposal for a Council Directive on the Introduction of Measures to Encourage Improvements in the Safety and Health of Workers at the Workplace' [1988] OJ C 175/09.

[178] For all the references, see Part I of this chapter.

discussed earlier, there is common agreement that, at its most rudimental, ergonomics includes adaptations for physical needs, such as the provision of personal protective equipment,[179] sufficient lighting or physical space.[180] These adaptations address the toll that organising work in a particular way may take on the human body.

However, the humanisation principle captures more than a requirement to adapt work to the physical needs of a worker. It includes a broader obligation to adapt work to the psychological needs of workers. This derived from the references in various instruments to adapting work to the worker's mental health, capacity and capabilities.[181] Examples in the drafting materials and instruments include adaptations to prevent 'stress';[182] 'over-taxing of their capacity or psychological reaction';[183] 'excessive… workload';[184] 'monotony';[185] and 'excessive mental strain and fatigue'.[186]

This obligation to adapt work to the worker then extends further than just preventing poor mental health. This is clear from the discussions of the humanisation

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[179] ILO Recommendation 192 (n 65) para 6.

[180] EU Display Screen Directive (n 66) Annex Art 2(b).

[181] See, for example, Convention 155, Article 5(b); Recommendation 112, Art 1(b); Convention 161, Article 1(a)(ii); Recommendation 120, para 59; The Joint ILO/WHO Committee referred to the 'placing and maintenance of the worker in an occupational environment adapted to his… psychological equipment'(n 53) 2; ILO Resolution 1974 (n 19) refers to the 'adaptation of installations and work processes to the physical and mental aptitudes of the worker'; Council Resolution 1978 (n 24) refers to 'mental adjustment'.

[182] ILO Resolution 1974 (n 19).

[183] Commission (n 82) 116.

[184] ILO (n 58) 34.

[185] Framework Directive on Safety and Health, Article 6(2)(d); Working Time Directive, Article 13.

[186] European Parliament (n 132).

movement as providing 'work satisfaction',[187] 'self-worth',[188] 'social satisfaction', [189] 'pride'[190] and 'creativity'.[191] It stems from the concern over worker 'alienation', 'dissatisfaction' and 'soulless' work, which the humanisation movement sought to address.[192] This broader obligation to consider the creative and social needs of workers goes to the crux of *humanising* work: it is what distinguishes workers as people, rather than as machines on the production line. In the language of today, it might be that 'psychosocial needs' best reflects the previous terms of human emotional needs or satisfying work of the past. It is this humanising aspect of the organisation of work that starts to depart most notably from traditional occupational health and safety concerns.

In addition to considering physical and psychosocial needs, the requirement to adapt work to 'human needs' lastly encompasses the *specific* needs of individuals. This facet of the humanisation principle is one which, as discussed, has grown in dominance since the 1990s. It recognises that 'not all workers have equal work ability, health status, or competence' and thus 'may need adaptation of work, working methods, or work environment… to their special needs'. [193] Whilst the 1950s iterations of this strand focused on the 'special need[s] … of women, young persons or handicapped

[187] See, for example, the proposed US bill on the humanisation movement, which stated that 'it is in the national interest to encourage the humanization of working conditions and the work itself so as to increase worker job satisfaction': US Senate (n 27) 3.

[188] US Senate (n 27) 9.

[189] ILO (n 54 (1984)) 21.

[190] Joint Committee (n 62 (1953)) 11.

[191] Commission (n 17) 8.

[192] These terms were ubiquitous during the humanisation movement, see US Senate (n 27) for an example.

[193] This definition is from the former President of the International Commission on Occupational Health and former Chairman during the Convention 161 drafting process, who refers to 'adapting work to the worker' as the 'adaptation principle': Rantanen (n 148 (2011)) 8. The UK government similarly described the adaptation principle as the 'variety of groups of workers… that may require reasonable adjustments to their work or to the workplace' in Department of Work and Pensions, 'International Comparison of Occupational Health Systems and Provisions' (Research Report no 993, 2021) 90.

persons',[194] this has since extended more broadly, with vulnerable or specific risk groups now typically identified as women, migrant workers, ageing workers, workers with disabilities, young workers, and pregnant workers.[195] The most prominent, recent example of this strand concerns adaptations of work organisation for older workers, advanced in particular by the Pillar, and promotes adaptations to working time, task allocation and lighting systems.[196]

Having identified the human needs addressed by the humanisation principle – physical, psychosocial and specific – this section now turns to examining the nature of the duty imposed on the employer.

Nature of the Duty

As the Commission stated in its core guidance on the humanisation of work, humanising the organisation of work 'implies, by definition, a genuine participation of the employees'.[197] In order to carry out the duty of adapting work to human needs, there must be some form of worker input into the organisation of work.

Bercusson underscores this obligation in his analysis of the principle, arguing that the principle must implicitly involve a duty to consult or engage with workers, otherwise the employer would be unable to discern how to adapt work to the worker.[198]

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[194] ILO, 'Record of Proceedings' (ILC 43rd Session, 1959) 718.

[195] Directorate General for Internal Policies, 'Occupational Health and Safety Risks for the Most Vulnerable Workers' (European Parliament 2011).

[196] Examples taken from the Autonomous Active Ageing Agreement (n 145) and Commission Staff (n 142).

[197] Commission (n 17) 8.

[198] Bercusson (n 3) 325.

Particularly when considering how to make work satisfying, meaningful and adapted to the social needs of workers, it would be challenging to ascertain what those needs are without asking the workers themselves.

The importance of worker involvement has been continually stressed in the humanisation of work literature, to the extent that 'industrial democracy' was often regarded as a synonym for,[199] or as a sister concept to, [200] the movement. The role of worker input in the organisation of work was central to the founding humanisation of work experiments, from the early human relations experiments of the 1920s to Volvo's seminal humanisation strategy in the 1970s, which argued that giving workers agency over the organisation of work resulted in more meaningful work than using scientific management.[201] The Commission,[202] ILO[203] and US[204] all emphasised the role of worker input in the organisation of work: there was a recognition by industry that 'whatever is done about worker alienation or job dissatisfaction, it should be done with the participation of the workers involved'.[205] This element of the humanisation movement was particularly prominent during the drafting of Convention 161 and

[199] Examples include Szamuely (n 34); the former CEO of Volvo argued that Volvo conjured up the image of industrial democracy for many business people: Gyllenhammar (n 11) 102; Fraser (n 9) 24, under a heading 'Humanisation of work', cites reference to Dr Lloyd-Davies writing in 1954, which stated that 'while men can be conditioned, at least for a time, to meaningless work, work that has no creative element is soul destroying and unworthy… the prime requirement of an industrial democracy is that the work itself should be worthy of the dignity of a human being'.

[200] Examples include ILO Resolution (n 20); ILO (n 54 (1976)); Guest and others (n 6); Delamotte and Walker (n 10); Wilson (n 9). The Commission (n 17) 10 stated that 'the trend towards "humanisation" cannot be looked at in isolation. Coinciding as it does with the general movement towards industrial democracy, the problems involved should be seen in the context of the wider social, economic and political climate'.

[201] Guest and others (n 6).

[202] Commission (n 17) 8.

[203] ILO (n 22); ILO Director-General (n 16); ILO Resolution 1974 (n 19).

[204] US Senate (n 27); O'Toole and others (n 18).

[205] As argued by the Ford Foundation during the US Senate (n 27) 133 hearings on the humanisation of work, stating 'many have moved from the "scientific management" of Frederick Taylor to the humanism of Abe Maslow. That is to the good. But I think that without the participation of the worker himself… changes could well turn into another management consultants' hoola hoop… The worker is the subject of the decisions. The least one can do is consult him'.

Recommendation 171, which tied improvements in the working environment to worker engagement.[206]

Participation is therefore an important facet of the humanisation principle. By involving workers in the organisation of work, employers are then able to demonstrate that the duty to adapt work to the human needs of workers has been considered. Many of the instruments frame the principle as requiring employers or States to 'take account' of the humanisation principle.[207] In order to discharge this duty, evidence of worker participation would likely be needed. Tell-tale signs of the humanisation principle having *not* been followed would be circumstances where workers have no input into how the organisation of work content affects their human needs.

The requirement for employers to 'take account' of the humanisation principle also indicates that the principle can be balanced against other interests. It is therefore not an absolute right but a principle, to be weighed against the employers' interests in organising work to a particular pattern. In an EU context, this would likely entail a formula based on the CJEU's typical approach to principles, which firstly assesses whether there has been an infringement of the principle, and then examines whether the infringement can be justified by pursing a legitimate aim in a manner which is proportionate (based on suitability and necessity).[208] This would thus enable the

[206] For example, during the drafting process it was stated by the Finish Chairman, Jorma Rantanen that 'the quality of working life appears to have high priority in the view of both workers and managers, for instance, in most Western European countries. Consequently, self-determination, co-determination and participation are highly relevant concepts in the field of occupational health, too': ILC, 'Record of Proceedings: 70th Session, Thirtieth Sitting' (1984) 43/2.

[207] Most notably, WTD, Article 13; Convention 155, Article 5(b). Other examples include the Aviation Working Time Directive, Clause 6; Waterways Working Time Directive, Paragraph 16; Display Screen Directive, Annex para 3(b).

[208] Evidence of this approach comes from numerous cases and legislation. Examples include Council Directive 2000/78/EC of 27 November 2000 establishing a general framework for equal treatment in employment and occupation [2000] OJ L303/16, Article 2(b)(i) which states that indirect discrimination does not occur if it is 'objectively justified by a legitimate aim and the means of achieving that aim are appropriate and necessary'. In case law, the CJEU in *Fedesa* defined the proportionality principle as

employer to consider adapting work to the human needs of workers through participation, but retain the ability to justify the denial of certain adaptations based on legitimate and proportionate business needs. The functioning of this proportionality test in practice is elaborated upon further in 'application' chapters of this thesis.

In summation, the humanisation of work principle arose from concern over scientific management and the 'dehumanising' implications that organising work in such a manner can have.[209] The requirement to 'adapt work to the worker' was offered as a counter-principle, which encroached upon the employer's prerogative to choose which management style or work processes to use. The principle requires consideration of human needs – be it physical, psychosocial or specific – when organising work. As emphasised throughout the humanisation movement, the way to adapt work to these human needs is through the participation and input of workers. It would then be on the employer to demonstrate that the duty to adapt work to the worker had been fulfilled, subject to proportionate infringements which pursue the justified, legitimate interests of the employer.

Having outlined the scope, substance and nature of the humanisation principle, this section lastly examines the implications of applying the principle specifically on

involving measures that 'are appropriate and necessary in order to achieve the objectives legitimately pursued'. In *Viking*, the CJEU examined whether the infringement of the principle of freedom of establishment was 'suitable for ensuring the achievement of the objective pursued and does not go beyond what is necessary to attain that objective'. In *Bilka,* the infringement of the principle of equal pay had to be 'objectively justified, and the means chosen for achieving the objective correspond to a real need, are appropriate, and are necessary', and in *Gebhard,* the test was defined as the measures 'must be suitable for securing the attainment of the objective which they pursue; and they must not go beyond what is necessary in order to attain it': Case C-331/88 *The Queen v Minister of Agriculture, Fisheries and Food and Secretary of State for Health, ex parte: Fedesa and others* [1990] ECLI:EU:C:1990:391, para 13; Case C-438/05 *International Transport Workers' Federation and Finnish Seamen's Union v Viking Line ABP and OÜ Viking Line Eesti* [2007] ECLI:EU:C:2007:772, para 18; Case 170/84 *Bilka - Kaufhaus GmbH v Karin Weber von Hartz* [1986] ECLI:EU:C:1986:204 para 37; Case C-55/94 *Reinhard Gebhard v Consiglio dell'Ordine degli Avvocati e Procuratori di Milano* [1995] ECLI:EU:C:1995:41, para 37. Bogg (n 2) also applies a similar framework to the application of Article 13 WTD.

[209] This phrase used in multiple humanisation sources, see: Delamotte and Walker (n 10) 9; Commission (n 17) 1; ILC (n 105) 2.

the organisation of working time. Whilst the organisation of time falls within the employer's prerogative to manage – which the humanisation principle governs – it has been more controversial than other types of work design, such as work equipment or task order. Given that working time is the object of Article 13 WTD, which is the focus of this thesis, the last section therefore elaborates further on the issue.

Application to Working Time

There has been consistent pushback against working time being included within the scope of the humanisation principle. The UK argued that working time had 'no place' within the humanisation principle during the drafting of Article 5(b) Convention 155, although it was ultimately narrowly adopted. [210]

There are two reasons why the application of the humanisation principle to working time is controversial. First, the requirement to adapt working time to the worker requires the employer to consider human needs *outside of work*. Second, by governing the organisation of working time, the humanisation principle may in turn affect the employment status of a worker, since status is closely tied to working time regimes. Both these issues broaden the implications of the humanisation principle and will now be examined in turn.

First, the employer's prerogative to organise patterns of working time – such as schedules, shift patterns, break periods, task duration – falls under the scope of 'work organisation' within the humanisation of work principle. This is evident from

[210] ILO, 'Report VI(2) Safety and Health and the Working Environment' (ILC 67th Session, 1981) 22.

discussion of the principle during the drafting periods. In the 1970s, one of the problems that the humanisation movement sought to address was the use of shift work and the rapid pace resulting from new technologies. There was a concern that 'many workers cannot endure shift work because of its social and physiological implications'[211] and its impact on 'family and social life'.[212] In response, the ILO emphasised the principle of 'adapting work schedules to social needs'[213] and stressed that the 'traditional shift-work rotation schedules could be re-examined and adapted to the needs not only of the undertaking but also of the individual worker and of society in general'.[214] The ILO Director-General argued that the uniform, unchanging schedule left 'hardly any room for individual choice' and that 'certain flexibility in the organisation of work time would reduce the feeling of being a slave to work and would allow other aspirations and needs to be met'.[215] An ILO resolution on the humanisation of work similarly stated that the objectives should include ensuring workers have 'free time for rest and leisure' which was a 'question of hours of work and their adaptation to an improved pattern for life outside work'.[216]

These formulations of the principle – adapting working time to worker preferences, social needs and leisure time – are supported by academic interpretations

[211] ILO (n 100) 30/3.

[212] Robert Tchobanian, 'Trade Unions and the Humanisation of Work' (1975) 111 International Labour Review 3, 200.

[213] ILO (n 22) 1.

[214] ILO Director-General (n 15) 40.

[215] ILO Director-General (n 16) 33.

[216] ILC Resolution of 1974 referred to in ILO Director-General (n 16) 3.

of the humanisation principle in Article 13 WTD. Bogg,[217] Bercusson[218] and Supiot[219] have argued that Article 13 requires the adaptation of working time to other types of time, such as community, social and family time. Bogg has argued that the principle requires workers to have autonomy over their work schedule, unless there are imperative business reasons against it,[220] whilst Bercusson has underscored the participation of workers in determining their working time.[221]

National transpositions of Article 13 WTD also reflect the wide-ranging scope of the humanisation principle. The German transposition of Article 13 requires employers to 'take into account reliable ergonomic knowledge about the humane design of work'.[222] As one leading German commentary explained, 'the humane design of work means that personal influences take precedence over the requirements of technology, machines, competitive pressure and costs',[223] making it deeply reminiscent of the humanisation movement. German literature on the principle discusses the 'adaptation [of shifts] tailored to the employees needs' and evaluates the impact of shift patterns on work ability, sleep quality, quality of life, and social life.[224] The

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[217] Bogg (n 2); Bogg and Ford (n 174); Alan Bogg, 'Escaping Labor Law's Matrix: Governance by Numbers: The Making of a Legal Model of Allegiance Book Review' (2018) 40 Comparative Labor Law & Policy Journal 477.

[218] Bercusson (n 3), Brian Bercusson, *Working Time in Britain: Towards a European Model - Part I: The European Union Directive* (Institute of Employment Rights 1994).

[219] Alain Supiot, *Beyond Employment: Changes in Work and the Future of Labour Law in Europe* (OUP 2001) Chp 3.

[220] Bogg (n 2).

[221] Bercusson (n 3).

[222] Betriebsverfassungsgesetz § 90 Abs. 2; Arbeitszeitgesetz § 90 Abs 4 -9.

[223] Landmann/Rohmer, *Gewerbeordnung* (München: C.H.Beck 2021) ArbZG Section 6, paras 4-9 [translated into English].

[224] Michael Köhler and others, 'Partizipatives betriebliches Gesundheitsmanagement – Evaluation einer an Mitarbeiterbedürfnissen ausgerichteten Schichtmodellanpassung' (2020) 74 *Zeitschrift für Arbeitswissenschaft* 284, 285. Peter Angerer and Raluca Petru also list recommendations of humane design for night shifts under § 2 ArbZG, which includes avoiding permanent night shifts, minimising morning shifts in a row, and a maximum of three night shifts in a row in 'Schichtarbeit in der modernen Industriegesellschaft und gesundheitliche Folgen' (2010) 14(2) *Somnologie - Schlafforschung und Schlafmedizin* 88.

transposition also captures the requirement for worker participation: the 'great potential' of the humane design principle is the 'focus on voluntariness' and participation, since those workers who can choose how to organise their work will 'do it happier, more effectively and without disruptions'.[225]

Hence, the application of the humanisation principle to working time is more controversial than other aspects of work design, since it entails consideration of how working time affects other types of time, like social or family time. Employers are required to be conscious of workers' private lives and the implications that schedules, shifts or working pace have on their human needs, like the need for community, family and social life. This is significant, as rather than organising time solely in the interests of employers, the humanisation principle requires the 'better adaptation of working time to individual preferences and the needs of special groups of workers', as an ILO report outlined.[226]

The second reason why the inclusion of working time within the humanisation principle is contentious is due to its implications on worker status. The organisation of working time is closely related to the question of employment status, as discussed in Chapter 2. Non-standard work is often characterised by its flexible or irregular working time regime; for instance, on-demand or causal shift work are defined by their working time arrangements.[227] By contrast, standard workers with full employment rights are usually characterised by the regular, predictable organisation of working time. This

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[225] Landmann/Rohmer (n 223) paras 4-9, 287.

[226] ILO (n 54 (1976)) 11.

[227] As discussed in Alan Bogg, 'The Regulation of Working Time in Europe' in Alan Bogg, Cathryn Costello and ACL Davies (eds), *Research Handbook on EU Labour Law* (Edward Elgar 2016).

close connection between employment status and working time has implications for the humanisation principle, which traditionally governs issues of work (i.e., job content or tasks), not employment status. If the organisation of working time becomes integral to questions of employment status, then it widens the scope of application of the humanisation principle.

This issue has become starker post-1970s with the rise in non-standard employment. The humanisation principle creates a crossroad between the two areas (working time and employment status) as it requires that the human needs of workers and their participation be considered when organising working time. Rather than adopting non-standard regimes aimed solely at the employer's interests (typically to reduce labour costs), it could be the case that flexible types of working contracts which fail to consider social needs through worker input run contrary to the humanisation principle. This could be the case, for instance, where workers prefer to have regular working time regimes (hence resembling a standard employment relationship) and the employer is unable to provide a legitimate and proportionate justification against adapting the working time regime to the worker's needs.

These two factors – the adaptation of working time to human needs and preferences, and the potential knock-on effects on employment status – are why the inclusion of working time within the humanisation principle has been a sticking point in several drafting procedures. This is ultimately why Article 13 WTD has such potential significance, as it explicitly incorporates the humanisation principle into the issue of working time.

Conclusion

'For a long time, the worker's task was to merely … serve the machine… then steps were undertaken to try to adapt work to human physiological and psychological standards'.[228] Written by the ILO in the 1970s, this phrase encapsulates the essence and context behind the humanisation principle. Concerned with the monotony of factory work and scientific management, new techniques were experimented with to improve worker participation and satisfaction with work. 'Assembly line work is under attack',[229] was the explanation at the time, with workers seeking to develop 'their creative capacities' and 'find personal satisfaction and fulfilment in their job'.[230]

Whilst a contemporary newspaper clipping labelled the movement as 'absurd'[231] and, as raised in a US Senate hearing, some worried that it would end in gimmicks requiring employees to sing every morning,[232] the legacy of the movement remain steadfast in numerous international and European legislative instrument. The obligation to 'adapt work to the worker' has been enshrined as an obligation on employers in instruments dating from the 1950s to recent EU resolutions.

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[228] ILO (n 48) 13 -14.

[229] ILO (n 54 (1976)) 12

[230] ILO Director-General (n 16) 46.

[231] Suzanna Lessard argued that 'there's a pretence, a hypocrisy in avowing that this work should be made 'meaningful '. Even more absurd is to apply such words to reform on an assembly line. The issue isn't personal fulfilment, it's simply making the common job tolerable, directing the genius of technology at least as much towards the comfort and sanity as workers as towards productivity' in 'What Do People Do All Day' *Washington Monthly* (March 1972).

[232] US Senate (n 27) 22.

Despite its prevalence, many have acknowledged that adapting work to the worker is a 'rather vague concept'[233] and its meaning is one which has evolved over time, with emphasis ranging from ergonomics to adaptations for ageing workers.

However, by drawing upon the drafting materials and literature, this chapter has pinpointed the scope, substance and nature of the humanisation principle. In terms of scope, the principle applies to the employers' prerogative of work design (i.e, how tasks, time and the workplace are organised). When organising work, the substantive duty requires that it be adapted to the human needs of workers through participation. 'Human needs' has three prongs: physical, psychosocial and specific needs. It is consideration of the social, creative needs of workers that goes to the essence of *humanising* work. The nature of the duty then requires that workers have some input into the design of work, in order to raise these human needs. It is for the employer to 'take account' of the possible adaptations: whilst consideration of the principle is mandatory, it can ultimately be balanced against the legitimate and proportionate interests of the employer.

This chapter has therefore established the substance of the principle in Article 13, having in the previous chapters set the scene for why the provision is important. The following chapter continues to develop Article 13, however, instead of looking at the *substance* of the principle, it turns to examine its *status*. Attention is thus shifted from the words 'adapting work to the worker' in Article 13, to those which precede it: 'the general principle of'.

[233] Landmann/Rohmer (n 223), citing a German Federal Labour Court in relation to the German transposition of the principle.

Chapter 4

Article 13 as a General Principle of EU Law

Introduction

Article 13 of the Working Time Directive contains the ‘general principle’ of adapting work to the worker. The term ‘general principle’ could be a simple turn of phrase, of which the drafters attached little significance. In quite stark contrast, however, it could equate Article 13 to a general principle of EU law, elevating it to the status of primary EU law.

This chapter argues that the latter interpretation is more convincing. Having highlighted the historical significance of the ‘humanisation of work’ principle in the previous chapter, it is argued that there is sufficient scope for regarding the long-standing principle as a general principle of EU law.

Structured in two parts, the chapter first discusses the implications of such a finding. Compared to regular directive provisions, general principles have much wider ramifications in litigation and policymaking. The role of Article 13 would therefore be fundamentally transformed if regarded as a general principle.

The second part of the chapter evidences the humanisation principle as a general principle of EU law. Two avenues for reaching this conclusion are available: either Article 13 is regarded as a general principle on its own accord, or as a specific expression of the right to a healthy, safe and dignified workplace (building from the

Mangold[1]*-Kücükdeveci*[2] line of cases). The two routes, however, are loosely defined and therefore capable of being jointly fulfilled.

Relying on case law, it will ultimately be shown that both avenues are satisfied, indicating that the term 'general principle' in Article 13 is an intentional, not cavalier, turn of phrase. This could then have significant implications for how algorithmic time is regulated, as seen in the subsequent chapters.

Implications of Article 13 as a General Principle

If Article 13 is regarded as a general principle of EU law, it will play a very different role in policymaking and litigation (both in national courts and the CJEU) than if it is merely an ordinary provision in a directive.

As an ordinary directive provision, the uses of Article 13 are constrained by how it is transposed in national law and whether the dispute is against a private or public body. Should Article 13 not have been transposed (or incorrectly transposed), then a claim could be made for state liability, provided that it is considered a

[1] Case C-144/04 *Werner Mangold v Rüdiger Helm* [2005] ECLI:EU:C:2005:709.

[2] Case C-555/07 *Seda Kücükdeveci v Swedex GmbH & Co KG* [2010] ECLI:EU:C:2010:21.

sufficiently serious breach with a causal link to the damage.[3] Alternatively, a complaint could be made to the Commission, which may then bring implementation proceedings.[4]

If the national dispute is between a public employer and an individual, then the directive provision can be relied upon directly, provided that the provision is deemed sufficiently precise, clear and unconditional.[5] As will be discussed in more detail, this is debatable given the scope of interpretation for 'adapting work to the worker'.[6] Article 13 cannot be relied upon between two private parties,[7] although national courts are obliged to interpret national law in compatibility with the directive as far as possible,[8] which can be quite a forceful obligation.[9] A national rule in breach of Article 13 could

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[3] State liability was established in Joined Cases C-6/90 and C-9/90 *Andrea Francovich and others v Italian Republic* [1991] ECLI:EU:C:1991:428 and Joined Cases C-46/93 and C-48/93 *Brasserie du Pêcheur SA v Bundesrepublik Deutschland and The Queen v Secretary of State for Transport, ex parte: Factortame Ltd* [1996] ECLI:EU:C:1996:79. Non-implementation of the WTD would be a sufficiently serious breach (see Joined Cases C-178/94 *Erich Dillenkofer and others v Bundesrepublik Deutschland* [1996] ECLI:EU:C:1996:375). Liability for the non-implementation of Article 13 or the incorrect interpretation would depend on the facts; the UK was liable for pursuing its own interpretation of the directive without providing support for the interpretation in Case C-5/94 *Queen v Ministry of Agriculture, Fisheries and Food, ex parte: Hedley Lomas (Ireland) Ltd* [1996] ECLI:EU:C:1996:205.

[4] Under Articles 258-260 Consolidated Version of The Treaty on the Functioning of the European Union [2012] OJ C326/47 (TFEU).

[5] Case 41-74 *Yvonne van Duyn v Home Office* [1974] ECLI:EU:C:1974:133, building on the criteria in Case 26-62 *NV Algemene Transport- en Expeditie Onderneming van Gend & Loos v Netherlands Inland Revenue Administration* [1963] ECLI:EU:C:1963:1. Subject to the fact that the 'full application of directive is not in fact secured', either because it has not been implemented or implemented in a way which 'does not achieve the result sought by it': Case C-62/00 *Marks & Spencer plc v Commissioners of Customs & Excise* [2002] ECLI:EU:C:2002:435, para 27.

[6] For instance, the UK High Court found that Article 6(2) of Council Directive (89/391/EEC) of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work [1989] OJ L183/1, which contains the general principle of adapting work to the individual, was not unconditional and sufficiently precise to impose directly enforceable rights in *Sayers v Cambridgeshire County Council* [2007] IRLR 29; whereas Daniel Bennett argued that it is sufficiently precise and unconditional for direct effect in *Munkman on Employer's Liability* (16th edn, LexisNexis 2013); Kay Wheat by comparison argues that it is not directly enforceable in '"Stress" Claims and Workplace Standards and the European Framework Directive on Health and Safety at Work' [2006] International Journal of Mental Health and Capacity Law 53.

[7] Authorities for this include Case C-91/92 *Paola Faccini Dori v Recreb Srl* [1994] ECLI:EU:C:1994:292 and Case 152/84 *M H Marshall v Southampton and South-West Hampshire Area Health Authority* [1986] ECLI:EU:C:1986:84.

[8] Case C-106/89 *Marleasing SA v La Comercial Internacional de Alimentacion SA* [1990] ECLI:EU:C:1990:395, para 8;

[9] For instance, in *Dominguez,* the CJEU urged the national court to reconsider interpreting the provision in compliance with the directive, even though the Advocate General had acknolwedged that the national court felt this was impossible: Case C-282/10 *Maribel Dominguez v Centre informatique du Centre Ouest Atlantique and Préfet de la région Centre* [2012] ECLI:EU:C:2011:559, Opinion of AG Trstenjak.

also potentially be excluded from proceedings between individuals in national courts, if the rule is being relied upon to make the claim.[10]

There are therefore various avenues in which Article 13 can be relied upon as an ordinary provision of a directive. The major limitations are that Article 13 does not have horizontal direct effect, nor does it have much normative weight above other ordinary provisions.

By contrast, if Article 13 is a general principle, the possibilities and scope of the provision become much broader. As a general principle, Article 13 would be regarded as primary EU law, thus on equal standing with the Treaties. All EU institutions are bound by general principles, as are Member States acting in the scope of EU law.[11] This would result in three major advantages of a general principle over a directive provision.[12]

Firstly, the humanisation principle would act as a constitutional aid for interpretation by both the CJEU and national courts when acting within scope of EU law.[13] This would significantly enhance the normative value attached to the humanisation principle, as it could influence how *other* EU and national law provisions

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[10] Known as incidental horizontal effect, seen in Case C-194/94 *CIA Security International v Signalson* [1996] ECLI:EU:C:1996:172*;* Case C-226/97 *Criminal proceedings against Johannes Martinus Lemmens* [1998] ECLI:EU:C:1998:296; and C-443/98 *Unilever v Central Foods* [2000] ECLI:EU:C:2000:496.

[11] Directorate-General for Internal Policies, 'The General Principles of EU Administrative Procedural Law' (European Parliament 2015) 8.

[12] For useful categorisations of the roles of general principles, see Catherine Barnard, *EU Employment Law* (OUP 2012); AG Trstenjak in *Dominguez* (n 9)*,* and Katja Ziegler and others (eds), *Research Handbook on General Principles in EU Law* (Edward Elgar Publishing 2022).

[13] This role is acknowledged by Päivi Neuvonen and Katja Ziegler, 'General Principles in the EU Legal Order: Past, Present and Future Directions' in Katja Ziegler and others (eds), *Research Handbook on General Principles in EU Law* (Edward Elgar Publishing 2022).

are interpreted. For instance, the arguably ambiguous provisions on on-demand work in Article 10 and 11 of the Transparent and Predictable Working Conditions Directive[14] could be shaped in light of the humanisation principle.[15] It could also inform interpretations of the Charter of Fundamental Rights (Charter);[16] in doing so, this could potentially overcome some of the restrictions placed on the use of principles in Article 52(5),[17] as well as implicating how the fundamental market freedoms and other general principles are evoked.[18]

Secondly, the humanisation principle could be used as a gap filling mechanism,[19] making it a useful tool for the CJEU and national courts when legislative provisions appear incomplete or lack procedural guidelines. This role may be particularly useful in the employment context, where the EU continues to expand its labour law portfolio (seen most recently through the Adequate Minimum Wages Directive,[20] Pay Transparency Directive[21] and draft Traineeship Directive[22]). During

[14] Directive (EU) 2019/1152 of 20 June 2019 on transparent and predictable working conditions in the European Union [2019] OJ L186.

[15] This will be demonstrated in Chapter 7.

[16] Charter of Fundamental Rights of the European Union [2016] OJ C202/02.

[17] As discussed in Katja Ziegler and Aristi Volou, 'Human rights and general principles: beyond the EU Charter of Fundamental Rights' in Katja Ziegler and others (eds), *Research Handbook on General Principles in EU Law* (Edward Elgar Publishing 2022).

[18] For instance, CJEU cases such as *Wippel* and *Commission v UK* might be interpreted differently in light of the humanisation principle, as mentioned in Chapter 5: Case C-313/02 *Nicole Wippel v Peek & Cloppenburg GmbH & Co KG* [2004] ECLI:EU:C:2004:607 and Case C-127/05 *Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland* [2007] ECLI:EU:C:2007:338).

[19] This role is also discussed in Neuvonen and Ziegler (n 13).

[20] Directive 2022/2041 of the European Parliament and of the Council of 19 October 2022 on adequate minimum wages in the European Union [2022] OJ L275.

[21] Directive 2023/970 of 10 May 2023 to strengthen the application of the principle of equal pay for equal work or work of equal value between men and women through pay transparency and enforcement mechanisms [2023] OJ L132.

[22] Commission, 'Proposal for a Directive of the European Parliament and of the Council on Improving and Enforcing Working Conditions of Trainees and Combating Regular Employment Relationships Disguised as Traineeships' COM(2024) 132 final.

the transition towards a more comprehensive body of labour law, there will likely be missing parts which the humanisation principle could fill. For example, the Platform Work Directive does not address the working time issues specific to the gig economy (such as waiting time, scrolling time, and temporal discipling, as discussed in Chapter 2);[23] this may be an area where the humanisation principle can assist through a gap-filling role.

Lastly, the humanisation principle could be used to review the legality of EU and certain Member States acts when acting within the scope of EU law. In analogy with *Rinke*[24] or *Test-Achats*[25] (cases in which EU legislative acts were reviewed for compatibility with the general principle of non-discrimination), it could potentially be argued that the provisions like the inclusion of an individual opt-out of the 48-hour working time limit in Article 22(1)(a) WTD are contrary to the humanisation principle. In analogy with *Jippes,*[26] the humanisation principle could affect policymakers as a principle which needs to be considered when weighing up factors affecting the choice of policy measure under the proportionality principle. Lastly, and particularly notably, the humanisation principle could be evoked in a national court dispute between private individuals to disapply conflicting national law provisions.

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[23] Directive (EU) 2024/2831 of 23 October 2024 on improving working conditions in platform work [2024] OJ L2024/2831.

[24] Case C-25/02 *Katharina Rinke v Ärztekammer Hamburg* [2003] ECLI:EU:C:2003:435.

[25] Case C-236/09 *Association Belge des Consommateurs Test-Achats ASBL and Others v Conseil des ministers* [2011] ECLI:EU:C:2011:100.

[26] In this case, the claimant argued (unsuccessfully) that the general principle of animal welfare should have been considered when deciding to introduce an EU ban on foot and mouth disease vaccinations: Case C-189/01 *H Jippes v Minister van Landbouw, Natuurbeheer en Visserij* [2001] ECLI:EU:C:2001:420.

Having outlined what is at stake when it comes to the implications of Article 13 as a general principle, it will now be considered whether Article 13 meets the requirements for general principles of EU law or not.

Evidencing Article 13 as a General Principle

Determining what counts as a general principle of EU law is, as Advocate General Trstenjak put it, a 'thorny issue'.[27] Both the existence and content of general principles 'remains somewhat unclear'[28] and there is a lack of transparency over the methodology used for identifying general principles.[29]

General principles were historically developed by the CJEU to fill gaps in the EU legal order to protect individuals from actions of the EU, for example, through the principle of legitimate expectations or proportionality.[30] This then took off with the increasing inclusion of fundamental rights as general principles in the 1970s, largely to thwart challenges to EU supremacy.[31]

[27] AG Trstenjak in *Dominguez* (n 9) para 92.

[28] Xavier Groussot and others, 'General Principles and the Many Faces of Coherence: Between Law and Ideology in the European Union' in Stefan Vogenauer and Stephen Weatherill (eds), *General principles of Law* (Hart Publishing 2017) 79.

[29] Katja Ziegler and others, 'Introduction to the Research Handbook on General Principles in EU Law' in Katja Ziegler and others (eds), *Research Handbook on General Principles in EU Law* (Edward Elgar Publishing 2022).

[30] Neuvonen and Ziegler (n 13); Paul Craig and Gráinne De Búrca, *EU Law: Text, Cases, and Materials* (7th edition, UK version, OUP 2020).

[31] Craig and De Búrca (n 30).

General principles are now a recognised part of EU primary law and are regarded as 'inspired by the constitutional traditions common to the Member States'[32] and shared 'international treaties for the protection of human rights'.[33] This definition is reflected in Article 6(3) Treaty of the EU, which provides the main textual definition, stating that fundamental rights found in the European Convention on Human Rights and those common to the constitutional traditions of Member States are general principles.[34]

The extent to which the CJEU follows these criteria is disputed, particularly the rigour in which Member States' constitutions or international treaties are reviewed.[35] Since the introduction of the Charter, the CJEU has relied increasingly upon these rights to determine general principles,[36] often leading to a shift in debate towards the direct applicability of the Charter itself.[37]

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[32] Case 11-70 *Internationale Handelsgesellschaft mbH v Einfuhr-und Vorratsstelle für Getreide und Futtermittel* [1970] ECLI:EU:C:1970:114 para 4.

[33] Case 4-73 *J Nold, Kohlen-und Baustoffgroßhandlung v Commission of the European Communities* [1974] ECLI:EU:C:1974:51para 13.

[34] Consolidated Version of the Treaty on European Union [2008] OJ C115/13 (TEU).

[35] For example, in *Valsabbia*, the CJEU accepted the Commission's assertion of the principle of solidarity rather than going into any analysis of whether the principle existed or not: Joined Cases C154 - 85/79 *SpA Ferriera Valsabbia and others v Commission of the European Communities* [1980] ECLI:EU:C:1980:81; As noted in Stephen Weatherill, 'From Myth to Reality' in Stefan Vogenauer and Stephen Weatherill (eds), *General principles of law* (Hart Publishing 2017) 35, the CJEU's decision in *Mangold*, for instance, caused controversy as it was disputable whether there was common recongition of the prohibition on discrimination in respect to age. For general discussion of the methodology, see Craig and De Búrca (n 30).

[36] As acknowledged in Craig and De Burca (n 30); Neuvonen and Ziegler (n 13); and Weatherill (n 35). AG Trstenjak in *Dominguez* (n 9) para 74, states that the Charter should be starting point for interpretation of all other rules of EU law, including general legal principles.

[37] To date, three Charter provisions have been recognised as directly applicable by the CJEU: Article 21(1) non-discrimination, Article 31(2) limits on working time and Article 47 right to an effective remedy, as stated in Case C-715/20 *KL v X sp z oo* [2023] ECLI:EU:C:2023:281, Opinion of AG Pitruzzella.

Building on the CJEU's approach in its case law, however, there appears to be two possible avenues in which the humanisation principle found in Article 13 could be regarded as a general principle.[38]

Firstly, the humanisation principle could be regarded as a general principle using the (i) traditional approach towards general principles, as a constitutional principle common to Members States and international treaties. This avenue gives the humanisation principle a broad interpretation, not just as a fundamental human right but arguably as a procedural right too. Alternatively, the second avenue would regard the humanisation principle as a (ii) specific expression of the fundamental right to a safe, healthy and dignified workplace, as developed in the *Mangold-Kücükdeveci* line of cases. Both avenues will be discussed in turn below.

(i) Traditional Route for Determining General Principles

In this section, it is argued that the humanisation principle can be regarded as a general principle of EU law through the 'traditional' route of establishing general principles. This requires that the humanisation principle is inspired by the constitutional traditions common to Member States and international human rights treaties. In her Opinion, Advocate General Trstenjak elaborated on this in the context of labour law, stating that it is a three-part test in which the principle has found expression in (1) many EU

[38] This two-step approach is particularly notable in Case C-101/08 *Audiolux SA ea v Groupe Bruxelles Lambert SA (GBL) and Others and Bertelsmann AG and Others* [2009] ECLI:EU:C:2009:626. AG Trstenjak in *Dominguez* (n 9) adopts a three-step approach, determining first if there is a general principle, then if there is a directly applicable Charter right, and lastly applying the specific expression approach in *Kücükdeveci* (n 2).

primary and secondary rules, (2) international human rights agreements, and (3) Member States' constitutions or core employment laws.[39]

This section reviews both the explicit references to the principle of 'adapting work to the worker' in constitutional norms, as well as values which inspire the humanisation principle. It is ultimately argued that the combination of explicit references and six underpinning constitutional norms (right to occupational health and safety, dignity, consultation, private life, non-discrimination and the duty of care) evidence the humanisation principle as a common shared value at an international, regional and national level.

Explicit references to 'adapting work to the worker'

There are several notable references which explicitly refer to the principle of 'adapting work to the worker' in international human rights arrangements and EU secondary rules. Multiple iterations appear in ILO instruments,[40] including the Convention 155 on Occupational Health and Safety which was recently elevated to a fundamental convention at work, thus increasing its importance as an automatic obligation on States regardless of ratification.[41] The principle is also explicitly referenced in multiple EU

[39] AG Trstenjak in *Dominguez* (n 9).

[40] ILO Occupational Health Services Recommendation No. 171 (1985), art 8(e) and art 21; ILO Occupational Health Services Convention No. 161 (1985), art 1(a)(ii) and art 5(g); ILO Hygiene (Commerce and Offices) Recommendation No.120 (1964) para 59; ILO Night Work Convention No.171 (1990), art 10; ILO Recommendation on Safety and Health in Agriculture No. 192 (2001) art 6; ILO Occupational Health Services Recommendation No. 112 (1959), para (1)(b) and para 8(b), (f).

[41] ILO Occupational Safety and Health Convention No.155 (1981), Article 5(b), ratified by 83 State Parties.

secondary measures,[42] including the Framework Directive on Safety and Health, which acts as the main guiding instrument for the subsequent implementing directives.[43]

However, there is no explicit mention of the principle of adapting work to the worker in primary EU instruments (it is not included in the Charter, for instance), nor is it explicitly referred to in a brief review of the constitutions of Member States.[44]

That said, however, general principles are 'inspired'[45] by and 'result from'[46] various sources, and thus do not need to exist in their exact phrasing. They can be 'inferred' from the intention of the Member States and Union,[47] or 'developed exclusively from the spirit and system of the Treaties'.[48]

The concept and notion of the humanisation principle – the adaptation of work organisation to human needs – finds constitutional legitimacy in numerous international, EU and Member State norms. The requirement that working tasks need

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[42] Directive 2003/88/EC of the European Parliament and of the Council concerning certain aspects of the organisation of working time [2004] OJ L299, art 13; Council Directive 90/270/EEC of 29 May 1990 on the minimum safety and health requirements for work with display screen equipment [1990] OJ L156, Annex para 3(b); Council Directive 2000/79/EC of 27 November 2000 concerning the European Agreement on the Organisation of Working Time of Mobile Workers in Civil Aviation [2000] OJ L 302, Clause 6; Council Directive 2014/112/EU of 19 December 2014 implementing the European Agreement concerning certain aspects of the organisation of working time in inland waterway transport, [2014] OJ L367/86, para 16; Interinstitutional Proclamation on the European Pillar of Social Rights [2017] C 428/0, principle 10(b); arguably Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work [1994] OJ L 216, Annex para II(9).

[43] Framework Directive on Workers' Safety and Health (n 6), art 6(2)(d).

[44] Member states reviewed included Italy, Spain, Denmark, Portugal, Poland and Croatia.

[45] *Internationale Handelsgesellschaft* (n 32) para 4. In *Schmidberger,* the CJEU stated that it 'draws inspiration from the constitutional traditions common to the Member States' when determining general principles of EU law: Case C-112/00 *Eugen Schmidberger, Internationale Transporte und Planzüge v Republik Österreich* [2003] ECLI:EU:C:2003:333, para 69.

[46] TEU, Article 6(3)

[47] *Jippes* (n 26) para 74.

[48] AG Trstenjak in *Dominguez* (n 9) para 94.

to be humanised through worker input, in order to avoid monotonous, repetitive work which treats workers as machines, is attested to in various international and national laws.

This section focuses on six key inspirations for the humanisation principle: the right to health and safety at work, dignity at work, duty of care, non-discrimination, private life, and consultation. It highlights how these norms offer underlying support for the humanisation principle and demonstrate a clear 'collective legal consciousness'[49] that adapting work to the worker is a general principle of EU law.

Right to Health and Safety at Work

One of the central inspirations for the humanisation principle is the right to health and safety at work, given the principles origins in health and safety law and its focus on ergonomics as a method of minimising physical and psychological harm at work.[50]

The right to health and safety at work seems almost certainly to be a general principle of EU law. As early as 1989, Advocate General Tesauro stated that it 'scarcely needs pointing out that' the fundamental constitutional principle of the absolute right to physical safety at work is one 'which corresponds to the general principles common to the laws of the Member States [and]… ILO rules'.[51] The right to health and safety

[49] This is the term used in *Jippes* (n 26) para 48 to argue that animal welfare was a general principle, although this was ultimately not successful as animal welfare was not part of the objectives of the Treaty nor an objective of the common agricultural policy, nor sufficiently clear, precise and defined.

[50] As outlined in Chapter 3.

[51] Case C-308/87 *Alfredo Grifoni v European Atomic Energy Community* [1989] ECLI:EU:C:1989:624, Opinion of AG Tesauro, para 29.

at work is found in many Member States' constitutions or national legislation,[52] as well as in Article 31(1) Charter. Bogg and Ford refer to Article 31 Charter, which contains the right to respect for health, safety and dignity at work, as having 'very significant normative weight' as the 'grundnorm' for other labour rights in the Charter.[53]

Protection of health and safety at work is also a treaty basis for EU action under Article 153(1)(a) TFEU, which Advocate General Mengozzi regarded as having 'attached specific and self-standing significance to safety at work in the context of the Community's social policy'.[54] The CJEU often relies upon the treaty basis to justify limitations on working time as a 'particularly important principle of Community social law':[55] to make this presumption, the CJEU must therefore regard the right to a safety and healthy working environment as of even greater constitutional significance.

On an international level, the right to a safe and healthy workplace is contained within the Universal Declaration of Human Rights,[56] the International Covenant on Economic, Social and Cultural Rights,[57] and was declared as a 'fundamental right' at work by the ILO. The ILO claimed that the declaration was a 'recognition of an existing

[52] Bogg and Ford highlight Greece, Portugal, Italy and Luxembourg as countries with constitutional provisions, whilst Germany, France and the UK have national legislation: Alan Bogg and Michael Ford, 'Article 31' in Steve Peers and others (eds), *The EU Charter of Fundamental Rights: A Commentary* (Hart Publishing 2021) 885.

[53] Bogg and Ford (n 52) 888–890.

[54] Referring to the former Article 118a, Case C-127/05 *Commission v United Kingdom of Great Britain and Northern Ireland* [2007] ECLI:EU:C:2007:72 Opinion of AG Mengozzi, para 4.

[55] Joined cases C-131/04 and C-257/04 *C D Robinson-Steele v R D Retail Services Ltd* [2006] ECLI:EU:C:2006:177, para 48.

[56] Universal Declaration of Human Rights (adopted 10 December 1948 UNGA Res 217 A(III)), Article 23.

[57] International Covenant on Economic, Social and Cultural Rights (adopted 16 December 1966, entered into force 3 January 1976) 999 UNTS 3), Article 7.

constitutional principle' of a safe and healthy working environment, which is one of the five core rights at work.[58]

The European Convention on Human Rights[59] is a further major source relied upon by the CJEU when determining general principles of EU law, and the European Court of Human Rights has ruled on the duty on states to protect workers' physical and mental wellbeing under Article 8, respect for a private life, in *Dolopoulos v Greece*.[60] The right to safe and healthy working conditions is also found in Article 3 of the Revised European Social Charter.[61]

There is therefore strong international, Union and Member State support for the right to a safe and healthy workplace, confirming its likely position as a fundamental right recognised as a general principle of EU law. Given that the humanisation principle is a core principle of occupational health and safety, it is logical that it would warrant the same fundamental support and recognition.

The humanisation principle, however, finds expression beyond the right to health and safety. As Bogg notes, this is evidenced in the wording of Article 13, which states that employer should take account of both the general principle of adapting work

[58] ILO, 'ILO Declaration on Fundamental Principles and Rights at Work and Its Follow-Up' (2022) 3. Whilst the CJEU rarely relies on international human rights treaties to confirm general principles (see Craig and de Burca (n 30)), the reference to the ILO's standards in several EU directives (including the WTD recital 6 and the preamble of the Young Workers Directive) demonstrates an alignment between the EU's approach with the ILO standards.

[59] European Convention for the Protection of Human Rights and Fundamental Freedoms (1950) Rome 4.XI.

[60] *Dolopoulos v Greece* App no 36656/14 (ECtHR, 10 July 2015).

[61] European Social Charter (Revised) (1996) ETS No. 163.

to the worker 'and of' health and safety requirements.[62] Whilst the CJEU endorsed a wide social interpretation of health and safety in *UK v Council*,[63] therefore offering a greater scope to consider the *humanising* aspect of the principle under mental health and wellbeing, it is argued that certain aspects of the humanisation principle are better captured through other norms. Most notably, the humanisation principle's concern over soulless, dehumanising work and adaptations for *specific* workers suggests that it takes inspiration from sources wider than just the right to health and safety, as will now be explored.

Right to Dignity at Work

Further inspiration for the humanisation principle can be found in the right to dignity at work. The right to dignity at work is similarly likely to be a fundamental principle recognised as a general principle, as it is found in Article 31(1) Charter, which is based upon the shared common constitutional values of Member States.[64] The right to dignity at work is also explicitly referred to in several other human rights instruments,[65] and 'dignity' is often the starting point for international human rights treaties, making it a foundational general principle.[66]

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[62] Alan Bogg, 'Of Holidays, Work and Humanisation: A Missed Opportunity?' (2009) 34 European Law Review 738.

[63] Case C-84/94 *United Kingdom of Great Britain and Northern Ireland v Council of the European Union* [1996] ECLI:EU:C:1996:431.

[64] As stated in the Charter's preamble.

[65] Universal Declaration of Human Rights, Article 23; Revised European Social Charter, Article 26.

[66] Charter, Article 1; Universal Declaration of Human Rights, Article 1; International Covenant on Economic, Social and Cultural Rights, preamble; International Covenant on Civil and Political Rights (adopted 16 December 1966, entered into force 23 March 1976) 999 UNTS 171), preamble; AG Pitruzella refers to dignity as a 'grundnorm' in *KL v X* (n 37), para 76.

The right to dignity at work, however, is a broad right which lacks a degree of definition.[67] The predominant interpretation regards it as the right to non-discrimination at work: this is alluded to in the Charter Explanations, which link 'dignity' under Article 31(1) to Article 26 of the Revised European Social Charter which refers to sexual harassment and offensive actions towards individuals.[68]

A closer look at other constitutional provisions, however, suggests that dignity at work is a multifaceted right that extends beyond discrimination and harassment. The utmost expression of dignity at work is arguably the freedom from slavery or forced labour, thus endorsing a much wider basis than the non-discrimination principle. The ILO Committee of Experts on the Application of Conventions and Recommendations has furthered this by extending the notion of forced labour to cover mandatory overtime,[69] which also reflects the Indian Constitutional Court's interpretation of work paying less than the minimum wage as forced labour.[70]

Moving further along the spectrum, dignity also expresses the lack of disposability of workers,[71] the need to prevent arbitrary or degrading treatment, and to ensure respectful treatment.[72] This is captured within the framing of many international

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[67] As shown in discussions by Pablo Gilabert, 'Labor Human Rights and Human Dignity' (2016) 42 Philosophy & social criticism 171; Christopher McCrudden, 'Human Dignity and Judicial Interpretation of Human Rights' (2008) 19 European Journal of International Law 655; Bogg and Ford (n 53).

[68] Explanations relating to the Charter of Fundamental Rights of the European Union [2007] OJ C303.

[69] As discussed in Bogg and Ford (n 53) 914, citing McCann.

[70] *People's Union for Democratic Rights v. Union of India*, AIR 1982 SC 1473 (India) para 5:10 considers 'force' as including economic compulsion to work for less than the minimum wage.

[71] Bogg and Ford (n 53) 911, citing McCrudden's reflections on the French and German constitutional interpretation of dignity.

[72] Analogy can be made with Article 10 International Covenant on Civil and Political Rights, which requires that everyone deprived of liberty treated with humanity and respect for inherent dignity of the human person.

human rights agreements which require working conditions to be 'fair' and 'just', seen for instance in Article 23 Universal Declaration of Human Rights, Article 7 International Covenant on Economic, Social and Cultural Rights, Article 2 Revised European Social Charter and Article 31 Charter. It speaks to the essence the humanisation principle, the respect of workers as *humans,* rather than as 'replaceable cogs' that are 'subservient to machines'.[73]

Supiot links this notion of dignity to Article 13 WTD and argues that it is inspired by the ILO's constitutional Philadelphia Declaration, which states that 'labour is not a commodity', that 'all human beings… have the right to pursue both their material well-being and spiritual development in conditions of freedom and *dignity*' (emphasis added).[74] This ties into the Commission's first explanation of the humanisation movement, which described it as a 'logical extension' of the basic concept that labour is not a commodity.[75] The CJEU and Advocate General Opinions have similarly linked Article 13 to the notion that workers' health and safety 'should not be subordinated to purely economic considerations',[76] since workers are not merely expendable components of production. Adapting work to human needs is therefore indivisible from securing the right to dignity at work.

[73] Pehr Gyllenhammar, 'How Volvo adapts work to people' (1977) 55(2) Harvard Business Review 102, 102 -3

[74] Alain Supiot, 'Beyond the Employment: The Ways of a Real Reform of Labour Law' (2018) 4 Law Journal of Social and Labor Relations 17.

[75] Commission, 'Reform of the Organisation of Work (Humanisation of Work) (Communication) COM (76) 253, 3. The ILO also explicitly linked the humanisation of work movement to the ILO's Constitution, which states that labour is not a commodity and that occupations should bring 'satisfaction': ILO, 'Information note on the activities of the International Labour Organisation concerning the humanisation of conditions of work' (ILO No. 32 Geneva, 1975) 1.

[76] Case C-84/94 *United Kingdom of Great Britain and Northern Ireland v Council of the European Union* [1996] ECLI:EU:C:1996:431, paras 28-29; Opinion of AG Léger, paras 94–95, both refer to Recital 4 of the WTD preamble, which states that the improvement of workers' health should not be subordinated to purely economic considerations, and explain how this approach of the directive is apparent in the inclusion of the requirement to adapt work to the worker. Similarly, AG Mengozzi in Commission v UK (n 54) para 4649 stated that the principle of adapting work to the worker 'appears to give priority to protecting the individual worker rather than financial enterprise'.

On the other end of the spectrum to forced labour, dignity at work is expressed as the ability to fully thrive in community with others. This is reflected in Article 22 Universal Declaration of Human Rights, which grounds respect for social rights as indispensable for 'dignity and the free development of his personality'. Article 23 goes on to provide the right to remuneration which is 'worthy of human dignity' and Article 24 outlines the 'right to rest and leisure'. This situates limitations on working time organisation in Article 13 as not only health and safety measures, but necessary for dignity. It speaks to the *humanising* nature of the humanisation principle, which considers the workers' social, creative and emotional needs within work organisation, particularly in how working time is adapted to life *outside of work*. Synergies can therefore be found with Article 27 Universal Declaration of Human Rights, which provides the 'right to freely participate in the cultural life of the community', since this necessitates the adaptation of working time to community and social time. It ultimately relates to the 'basic needs' philosophy of the humanisation movement, which regarded 'satisfying work' as 'a basic human need, essential to identity, self-respect and order in human life.'[77]

The International Covenant on Economic, Social and Cultural Rights equally makes the connection between working time limitations and dignity under Article 7, which refers to 'Just and Favourable Conditions of Work'. The interpretative comment accompanying the Covenant explains that the right to rest and leisure in Article 7(d) is aimed to avoid accidents and protect health, but also ensure a balance between work

[77] David Guest and others, 'Humanizing Work in the Digital Age: Lessons from Socio-Technical Systems and Quality of Working Life Initiatives' (2022) 75 Human Relations, 1466.

and family/personal responsibilities.[78] In a similar vein, the Revised European Social Charter states that weekly rest periods shall coincide with days of tradition or custom, emphasising the need for work to respect cultural values.[79]

Thus, the notion that work should be adapted to human needs, from basic physical needs to community and social needs, is clearly interrelated with the right to dignity at work. There is underlying international support for the notion that dignity at work requires workers to be treated, not as commodities or machines, but as humans with the ability to develop their personality and communal life in conjunction with working life.

Duty of care

The duty of care, specifically in an employment context, is interesting in that it is not expressly enshrined in many international and EU workplace instruments, yet it is regularly relied upon in staff workplace disputes at the ILO Administrative Tribunal and CJEU cases brought by EU staff members. This suggests that the duty of care takes on a gap-filling role, which is quintessential of general principles. Rather than being a fundamental human right, however, the duty of care appears to function more as a *procedural* right governing employer decision-making. For instance, a review of the ILO's Administrative Tribunal decisions shows that the duty of care is often breached when decisions are made without clear communication, good faith or consideration of

[78] Committee on Economic, Social and Cultural Rights, 'General Comment No. 23 on the Right to Just and Favourable Conditions of Work' (2016) E/C.12/GC/23.

[79] Revised European Social Charter, Article 5(2).

the impact on the worker's life.[80] The CJEU has similarly referred to the employer's duty of care as a requirement to balance decisions against the impact on workers, for instance when transferring a worker to a new post.[81] This builds upon the duty of care as part of the 'right to good administration' owed by EU bodies,[82] which is a general principle of EU law[83] used 'ubiquitously' in CJEU case law.[84]

It is argued that these notions (ie, decision-making that is impartial, non-arbitrary, and considerate of the impacts on workers) are essential inspiration for the humanisation principle – the adaptation of work to human needs, rather than treating workers as subservient components of production. This is notable, for instance, in the ILO's Administrative Tribunal decisions which found a breach of the duty of care when organising shifts without consideration of the repercussions on workers,[85] reflecting the adaptation of working time to human needs, and a decision which found the employer's poor communication to be 'somewhat shocking[ly] from a human

[80] Using the ILO's case law database, Triblex, there were 137 cases which featured 'duty of care'. The oldest explicit reference to the duty of care appears to be in *Judgment No. 1756 09.07.1998*. There were many diverse circumstances where the duty of care was evoked, from considering the personal impact of job transfers (*Judgment No. 4427 07.07.2021*), maintaining appeal systems (*Judgment No. 4748 31.01.2024*), preventing delays to updating a job description (*Judgment No. 4684 07.07.2023*), and providing clarity over pension calculations (*Judgment No. 4554 06.07.2022*).

[81] *Kuhner* was one of the first CJEU cases to evoke the duty of care explicitly, relying on the German principle of 'Fürsorgeflicht': whilst the CJEU recognised the duty of care as a general principle (the Commission argued that it was not common to the laws of the Member States), it was ultimately not breached as the worker's personal situation appeared to have been considered: Joined cases C-33/79 and 75/79 *Richard Kuhner v Commission of the European Communities* [1980] ECLI:EU:C:1980:139. For other cases which discuss the duty to have regards to both the interests of the service and the interests of officials see Case T-93/94 *Michael Becker v Court of Auditors of the European Communities* [1996] ECLI:EU:T:1996:30; Case T-123/89 *Chomel v Commission* [1990] ECLI:EU:T:1990:24; *Joined Cases T-33/89 and T-74/89 Blackman v European Parliament* [1993] ECLI:EU:T:1993:21; *Case T-65/92 Arauxo-Dumay v Commission* [1993] ECLI:EU:T:1993:47.

[82] Found in Article 41 Charter, which the accompanying Charter Explanations (n 68) states includes the duty of care.

[83] As discussed with relevant case law in Directorate-General for Internal Policies (n 11) 19.

[84] Herwig Hofmann, 'The Duty of Care in EU Public Law – A Principle Between Discretion and Proportionality' (2020) 13 Review of European Administrative Law 87, 87.

[85] *Judgment No 2972 29.10.2010* (ILO Administrative Tribunal) para 9.

perspective',[86] thus evoking respect for *living person* at work. Hence, endorsement for the humanisation principle as a general principle can be found in the duty of care, which plays a crucial gap-filling role in international litigation.

Principles of non-discrimination, equal treatment and the right to a private life

Support for the strand of the humanisation principle which requires workplace adaptations for *specific* workers can be found in the principles of non-discrimination and equal treatment. These principles are well-established within EU law, found in Articles 20 and 21 Charter, several EU directives,[87] CJEU case law,[88] and other major human rights instruments.[89] Non-discrimination is a fundamental value of the Union[90] and the general principle of equal treatment/non-discrimination itself has been described as a 'multi-faceted general principle with different manifestations', applied to varying contexts and grounds of discrimination.[91] What is clear, however, is that there is a constitutional consensus behind the right to be treated equally.

This thus provides underlying support for the notion that work should be adapted to the *specific* needs of workers. There is significant overlap between the duty

[86] *M v ITU Judgment No 4517 06.09.2022* (ILO Administrative Tribunal) para 8.

[87] For example, Council Directive 2000/78/EC of 27 November 2000 establishing a general framework for equal treatment in employment and occupation [2000] OJ L303; Council Directive 2000/43/EC of 29 June 2000 implementing the principle of equal treatment between persons irrespective of racial or ethnic origin [2000] OJ L180; Directive 2006/54/EC of 5 July 2006 on the implementation of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation (recast) [2006] OJ L204.

[88] For example, *Mangold* (n 1) and *Kücükdeveci (n 2)* refer to the principle of equal treatment and non-discrimination without distinction. See also *Test-Achats* (n 25).

[89] European Convention on Human Rights, Article 14 (in conjunction with other rights within the Convention); Universal Declaration on Human Rights, Article 2 and Article 7.

[90] TFEU, Article 19 and TEU, Article 3(2).

[91] Christa Tobler, 'General Principles of Equal Treatment in EU Non-Discrimination Law' in Ziegler and others (n 12) 365.

to adapt work to the specific worker and the requirement under equal treatment norms to make adaptions to accommodate a diverse workforce. Synergies can particularly be drawn between the duty to make reasonable accommodations for disabled workers (enshrined in international and EU instruments[92]), the duty to avoid indirect discrimination, and the duty to reconcile work to family life, either as a standalone right[93] or through measures like pregnancy leave, maternity protection and work-life balance initiatives.[94] Hence, these duties reflect a shared recognition by the Union and Member States that work and individual/family needs require adaptation to each other. In this sense, there is a clearly legislative support and consensus for the principle of adapting work to the needs of *specific* workers, as found in the humanisation principle.

Closely related to this is the right to a private and family life. This is particularly true where the humanisation principle is applied to the organisation of working *time,* as required under Article 13 WTD.

The right to a private life right requires that the State refrain from disproportionate interference in the personal life of its citizens. It is also a positive duty to protect private and family life from interference, which is being increasingly applied to a workplace context, in which the State must prevent disproportionate interference

[92] Framework Directive for Equal Treatment in Employment (n 87), Article 5; United Nations Convention on the Rights of Persons with Disabilities (adopted 13 December 2006 UNGA Res A/RES/61/106), Article 5(3).

[93] Charter, Article 33; Revised European Social Charter, Article 27; the European Court of Human Rights considered parental leave as protected under Article 8 European Convention on Human Rights in *Konstantin Markin v Russia* App no. 30078/06 (ECtHR, 22 March 2012); the International Covenant on Economic, Social and Cultural Rights includes reconciliation measures under Article 7(c) and Article 10, in which the Committee's interprerative comment discusses the growing recognition of the need to reconcile family and work responsibilities (Committee on Economic, Social and Cultural Rights (n 78)).

[94] This is reflected in several ILO instruments, namely ILO Convention on Maternity Protection (Revised) No. 103 (1952) and ILO Convention on Workers with Family Responsibilities No. 156 (1981); and EU directives, namely Directive (EU) 2019/1158 of the European Parliament and of the Council of 20 June 2019 on work-life balance for parents and carers [2019] OJ L188 and Council Directive 92/85/EEC of 19 October 1992 on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding [1992] OJ L348.

by the employer into their workers' personal life.[95] The right is attested to in numerous international human rights treaties,[96] including Article 16 Universal Declaration on Human Rights which refers to the duty placed on 'society and the State', thus potentially extending its reach to employers as participants in society. These rights attest to a shared common value that workers lives' *outside of work* are worthy of protection. This therefore forms a constitutional underpinning for the adaptation of working *time* to human needs in Article 13 WTD, since it ensures that time is organised in a way which is conducive to the workers' personal life. As a concluding point, this then ties back into the principles of equal treatment/non-discrimination, since the adaptation of work to private life has a more significant impact on women, for example, who carry a disproportionate share of caring responsibilities.

Workers' Right to Participate

Discharging the duty contained in the humanisation principle necessitates the involvement of workers. As Bercusson noted, adapting work to the worker is best achieved through worker participation.[97] This was critical to the humanisation of work

[95] Particularly notable in the European Court of Human Rights cases on surveillance at the workplace, such as *Copland v United Kingdom* App no 62617/00 (ECtHR, 3 April 2007), *Obst v Germany* App no 425/03 (ECtHR, 23 September 2010), *Gillberg v Sweden* App no 41723/06 (ECtHR, 3 April 2012), *DMT and DKI v Bulgaria* App no. 29476/06 and 29486/06 (ECtHR, 24 July 2012), *Barbulescu v Romania* App no 61496/08 (ECtHR, 5 September 2017), and *Libert v France* App no 588/13 (ECtHR, 22 February 2018). Cases concerning dismissals in breach of the right to freedom of thought, conscience, and religion include *Larissis and Others v Greece* App no 23372/94, 26377/94, and 26378/94 (ECtHR, 24 February 1998), *Dahlab v Switzerland* App no 42393/98 (ECtHR, 15 February 2001), and *Eweida and Others v United Kingdom* App no. 48420/10, 59842/10, 51671/10, and 36516/10 (ECtHR, 15 January 2013). Meanwhile, violations of the freedom of expression are exemplified in *Guja v Moldova* App no 14277/04 (ECtHR, 12 February 2008), *Heinisch v Germany* App no 28274/08 (ECtHR, 21 July 2011), and *Bucur and Toma v Romania* App no 40238/02 (ECtHR, 8 January 2013).

[96] International Covenant on Civil and Political Rights, Article 23; Charter, Article 7; European Convention on Human Rights, Article 8; Revised European Social Charter, Article 16; Universal Declaration of Human Rights, Article 12.

[97] Brian Bercusson, *European Labour Law* (Butterworths 1996) 325.

movement itself, which underscored the 'need for workers to participate in decisions concerning the conditions in which they perform their work'.[98]

There are many different sources of support for workers' involvement in work organisation, with varying degrees of strength and terminology. This spans from the 'right to be heard' at work, recognised under Article 11 European Convention on Human Rights,[99] to the well-established right to collective bargaining and freedom of association.[100] Within this spectrum is the right to consultation and information, notably contained in Article 27 Charter, as furthered in Article 154 and 155 TFEU and multiple EU directives.[101] The right of workers to 'participate' in working conditions and the working environment also features: the Revised European Social Charter refers to the 'right to take part' in the determination and improvement of 'work organisation'[102] and the former Community Charter required the 'information, consultation and participation of workers' *inter alia* in the cases of technological changes on work organisations and health and safety risks.[103] The emphasis on workers' participation in health and safety is similarly reflected in the Framework

[98] ILO Director-General, 'Making Work More Human: Working Conditions and Environment' (ILO 1975) 74.

[99] *National Union of Belgian Police v Belgium* App no. 4464/70 (ECtHR 27 October 1975) para 19*; Wilson, National Union of Journalists and Others v United Kingdom* App no 15573/89 (ECtHR, 2 July 2002) para 42. For discussion of how this is distinguished from the right to be consulted, see Filip Dorssemont, 'Article 27' in Steve Peers and others (eds), *The EU Charter of Fundamental Rights: A Commentary* (Hart Publishing 2021).

[100] Charter, Articles 12 and 28; European Convention on Human Rights, Article 11; Universal Declaration of Human Rights, Article 20.

[101] Council Directive 2001/23/EC of 12 March 2001 on the approximation of the laws of the Member States relating to the safeguarding of employees' rights in the event of transfers of undertakings, businesses or parts of undertakings or businesses [2001] OJ L82; Council Directive 98/59/EC on the approximation of the laws of the Member States relating to collective redundancies [1998] OJ L225; Council Directive 94/45/EC on the establishment of a European Works Council or a procedure in Community-scale undertakings and Community-scale groups of undertakings for the purposes of informing and consulting employees [1994] OJ L254; Directive 2002/14/EC establishing a general framework for informing and consulting employees in the European Community [2002] OJ L80/29–34; Council Directive 2001/86/EC supplementing the Statute for a European company with regard to the involvement of employees [2001] OJ L294.

[102] Revised European Social Charter, Article 22; Article 21 includes the right to information and consultation.

[103] Community Charter of Fundamental Social Rights of Workers [1989], Principles 17 – 19.

Directive on Safety and Health, which states that employers 'shall consult' and ensure the 'balanced participation' of workers on certain health and safety issues,[104] as well as on the introduction of new technologies.[105] The CJEU has further held that the 'aim of the directive is to promote balanced participation of employers and workers' in activities related to occupational health and safety.[106]

Given that the humanisation principle originates from occupational health and safety, the inclusion of the right to participate within the principle is therefore unsurprising. The multiple references across international and regional human right norms to worker involvement, participation, consultation, or negotiation, highlights it as a well-recognised concept. It is therefore not outlandish, but rather intuitive, that the humanisation principle embodies this too.

In sum, the humanisation principle is a long-standing principle embedded in multiple ILO and EU instruments dating back to the early 20th century. It has been a founding principle of occupational health and safety, whilst also encompassing core aspects of the right to dignity, privacy, care, equality, and participation at work. It is explicitly referred to as a 'general principle' in multiple provisions and finds underlying support in the six constitutional norms examined above. Taken in totality, it is clear that legislation on an international, regional and national level requires the adaptation of work to human needs and can therefore be considered as a shared value of constitutional significance, worthy of the status of a general principle of EU law.

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[104] Framework Directive on Safety and Health, Article 11.

[105] Framework Directive on Safety and Health, Article 6(3)(c).

[106] Case C-441/01 *Commission v Netherlands* [2006] ECLI:EU:C:2006:238, para 53.

Counter points

Before concluding that the humanisation principle is a general principle of EU law, this section considers two main counter arguments (a textual analysis and a redundancy issue).

The first counter-argument to the humanisation principle as a general principle stems from a textual analysis of Article 13 WTD based on *Audiolux*.[107] In this case, the CJEU held that the principle that minority shareholders are protected by an obligation on dominant shareholders to offer to buy shares under certain circumstances was *not* a general principle of EU law. The reasoning was that the secondary legislation which contained the principle related to limited, specific situations where the principle was relevant and did not do so in absolute terms. It was also held the term 'general principle' in secondary EU legislation should not necessarily be given particular weight.

Following *Audiolux*, it could therefore be argued that any reliance on the phrase 'general principle' in Article 13 WTD goes too far. It could further be argued that the secondary legislation containing the principle of adapting work to the worker does so in specific, limited circumstances, for instance, Article 6 Framework Directive on Safety and Health states that, 'within the context of his responsibilities, the employer shall [apply the general principles of prevention]', which is too narrow to imply a general principle. Article 13 WTD similarly states that employers should 'take account'

[107] *Audiolux* (n 38).

of the general principle of adapting work to the worker, underscoring its non-mandatory nature and therefore lack of intent to be a general principle of EU law.

While compelling, it is ultimately argued that these arguments can be rebutted for several reasons. First, under Article 5(1) Framework Directive on Safety and Health, there is a clear intention to create binding effects: 'the employer *shall* have a *duty* to ensure the safety and health of workers in every aspect related to the work' (emphasis added). Article 6 is therefore framed against the backdrop of this obligatory principle, and the framing of Article 13 WTD as requiring employers to 'take account' of the general principle is indicative of how general *principles* function,[108] thus affirming its proper purpose. Moreover, the CJEU in *Defrenne* held that the word 'principle' is 'specifically used in order to indicate the fundamental nature of certain provisions'; whilst this was stated in the context of a Treaty provision, it clearly suggests that weight can be placed on the term 'principle' in Article 13 WTD.[109]

More fundamentally, there are clear distinctions between *Audiolux* and the present case. The rights of minority shareholders are vastly different to the protection of workers' entitlements, which are long enshrined in international treaties[110] and reflect the subordinate position of workers within an employment relationship. Comparison between the two is therefore fraught, given that minority shareholders are

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[108] For instance, the appellants in *Jippes* (n 26) para 51 argued that a general principle of animal welfare would mean that the relevant rules 'must be laid down and applied in such a way as to take account of the obligation to adopt adequate measures to avoid the exposure of animals to unnecessary pain or suffering'. Although unsuccessful, it demonstrates how general principles are typically utilised in EU law.

[109] Case 43-75 *Gabrielle Defrenne v Société anonyme belge de navigation aérienne Sabena* [1976] ECLI:EU:C:1976:56, para 38.

[110] As shown in the analysis above; Universal Declaration of Human Rights, for example, includes workers' rights.

not traditionally protected in human rights instruments and do not face the same levels of vulnerability as workers. The CJEU would be on much firmer footing to determine a general principle concerning protection for workers than shareholders, and this is reflected in the CJEU's growing tendency towards protecting fundamental rights at work.[111] Lastly, unlike *Audiolux* where there was only secondary EU legislation to rely on, the humanisation principle is found in both secondary EU legislation and many constitutional practices, again making comparison between the two cases unconvincing.

The second counter-argument is that recognising the humanisation principle as a general principle is redundant, since it is already covered by existing general principles, namely the six constitutional norms examined above (health and safety, dignity, duty of care, non-discrimination, privacy and participation). In a similar vein, it could be argued that the humanisation principle is too broad a concept to contribute in a meaningful way to the existing *social acquis* as a general principle.

The rebuttal to this is that the humanisation principle does carve out a specific area of focus which is not explicitly addressed by other general principles. It is concerned with the managerial prerogative of organising work (as opposed to employment terms) and ensures that the nature and content of the job itself is adapted to human needs, be it physical, psychosocial or specific needs. Whilst this is an intuitive principle, it is not explicitly expressed by other general principles. Hence why the principle has historically developed in reaction to scientific management and the

[111] As highlighted by Lorenzo Cecchini in discussion of the CJEU's protection of paid annual leave under Article 7 WTD in 'Unravelling Horizontal Direct Effect in EU Law: The Case of the Fundamental Right to Paid Annual Leave between "Myth" and "Practice"' [2023] 42 Yearbook of European Law 42.

unregulated employers' prerogative to enforce monotonous, soulless work. Even if the terms of employment are fair, the humanisation principle ensures that the content of the job itself is not dehumanising.

Moreover, concerns that there is overlap between general principles of EU law is not necessarily an issue. Equal pay and paid annual leave are recognised as general principles yet could be subsumed under the general principles of non-discrimination, occupational health and safety or dignity at work.[112] Moreover, as the body of EU labour law expands, the likelihood of overlap and mutually reinforcing principles will increase (for example, equal treatment of part-time workers has been regarded by the CJEU as 'simply a specific expression of … the general principle of equality'[113]). Further, the Union's relationship with social rights has historically continued to evolve; compared to an initial focus on market driven aims, there has since been more of a push for social rights, reflected particularly in the preamble of the European Pillar of Social Rights which calls for social rights for the '21st century'.[114] The acknowledgment of the humanisation principle as a general principle would therefore be a natural continuation of the EU's expanding portfolio on labour rights.

Lastly, fears that the humanisation principle may be too broad, so as to undermine the general principle of legality, can be rebutted with reference to the

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[112] *Defrenne* (n 109) and Case C-624/19 *K and Others v Tesco Stores Ltd* [2021] ECLI:EU:C:2021:429, which outlined the direct effect of equal pay provision in the TFEU; along with Joined Cases C-569/16 and C-570/16 *Stadt Wuppertal v Maria Elisabeth Bauer and Volker Willmeroth v Martina Broßonn* [2018] ECLI:EU:C:2018:871 for paid annual leave.

[113] Case C-660/20 *MK v Lufthansa CityLine GmbH* [2023] ECLI:EU:C:2023:789, para 37. Similarly, *Kücükdeveci* (n 2) refers to the general principle of non-discrimination based on age as a specific application of general principle of equal treatment.

[114] European Pillar of Social Rights, Recital 7.

principle of proportionality which would govern its scope. In the case of *Ajos,*[115] which is further emphasised in *Academia de Studii*[116] and *CCOO,*[117] the CJEU discussed the need for national courts to balance general principles against the general principles of legal certainty and protection of legitimate expectations. Hence, concerns that the humanisation principle might be too wide can be dealt with in relation to other general principles, rather than being a reason to invalidate the humanisation principle *per se*.

To conclude, the central counter-points to recognising the humanisation principle as a general principle can be challenged. Arguments based on a textual analysis under *Audiolux* can be distinguished, and a redundancy challenge can be rebutted by underlying the specific scope of the humanisation principle. It is therefore possible to consider the humanisation principle as a general principle under the 'traditional' route, given the explicit references to it in various instruments, augmented by multiple major constitutional norms.

(ii) 'Specific Expression' Route for Determining General Principles

Compared to the traditional approach to determining general principles, this section considers an alternative route available for elevating the status of Article 13 WTD. Labelled here as the 'specific expression' doctrine, it regards certain directive provisions as giving form to a general principle. It will ultimately be argued that Article

[115] Case C-441/14 *Dansk Industri (DI), acting on behalf of Ajos A/S v Estate of Karsten Eigil Rasmussen* [2016] ECLI:EU:C:2016:278.

[116] Case C-585/19 *Academia de Studii Economice din Bucureşti v Organismul Intermediar pentru Programul Operaţional Capital Uman - Ministerul Educaţiei Naţionale* [2021] ECLI:EU:C:2021:210.

[117] Case C-55/18 *CCOO v Deutsche Bank SAE* [2019] ECLI:EU:C:2019:402.

13 can be seen as a specific expression of the general principle of the right to a safe, healthy and dignified working conditions.

Overview of the doctrine

The 'specific expression' doctrine stems from the line of cases following *Mangold*, notably *Kücükdeveci, AMS,*[118] *Ajos, Audiolux, Egenberger,*[119] *Bauer* and *Cresco*.[120] All of these cases examined whether certain EU directive provisions gave 'specific expression' to a general principle or fundamental right in the Charter. If they did, the role of the provision changed, allowing it to disapply national conflicting law in a dispute between two individuals (which is not traditionally possible, since it would *inter alia* erode the distinction between directives and regulations and make private parties liable for state actions).

Where these cases fit within in the EU legal order is controversial.[121] It is unclear what the status of provisions giving 'specific form' to fundamental rights is, and whether this is a discussion predominantly around the doctrine of horizontal direct effect of the Charter or expanding the reach of general principles of EU law. As Advocate General Trskenjak warns, there is the potential for an 'improper mixture' of directives and general principles, removing the flexibility of directives as they gain elevated, potentially permanent status.[122] Much of the academic literature focuses on

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[118] Case C-176/12 *Association de médiation sociale v Union locale des syndicats CGT and Others* [2014] ECLI:EU:C:2014:2.

[119] Case C-414/16 *Vera Egenberger v Evangelisches Werk für Diakonie und Entwicklung eV* [2018] ECLI:EU:C:2018:257.

[120] Case C-193/17 *Cresco Investigation GmbH v Markus Achatzi* [2019] ECLI:EU:C:2019:43.

[121] Cecchetti (n 111) 78 has referred to the approach as an 'sui generis, on-call, subsidiary, corollary, and "amputee" doctrine'.

[122] AG Trstenjak in *Dominguez* (n 9) para 154.

horizontal direct effect: there is limited discussion of how these 'specific expressions' may affect litigation in other ways, for example, as a constitutional interpretative aid or gap-filling mechanism (referring back to the 'implications' section above).

It is also unclear what the criteria is for a directive provision to be regarded as a specific expression of a general principle. Whilst there are ambiguities within the traditional approach to determining general principles, this approach is even more ambiguous – and at times, contradictory.

In the first cases, *Mangold* and then *Kücükdeveci,* the CJEU did not seem to lay out any particular requirements.[123] Instead, the CJEU identified the relevant general principle of EU law and pointed to the directive provisions which gave expression to it.[124] Subsequent cases of *Egenberger, AMS, Ajos, Bauer* and *Cresco,* however, introduced more of a criterion. The CJEU stated that the general principle or Charter provision needed to be 'mandatory and unconditional in nature' and 'sufficient in itself' to confer a right, so that the specific expression in secondary law only clarified certain conditions for exercising the right.[125] The specific expression should not 'presuppos[e] legislative choice' or discretion, as this lack of clarity would undermine the principle of legal certainty.[126]

[123] Note that *Audiolux* (n 38), which predates *Kücükdeveci* (n 2), could also be included here; although the CJEU did *not* find a specific expression of a general principle, it did deploy this analysis in determining whether a specific expression existed.

[124] *Mangold* (n 1) para 74 did not use the term 'specific expression' but stated that the 'source' 'underlying' the Framework Directive for Equal Treatment in Employment was the general principle of non-discrimination. *Egenberger* (n 119) paras 20, 21 and 50 then interpreted *Mangold* as finding that the Framework Directive for Equal Treatment in Employment was 'derive[d]' from the general principle of equal treatment and used the term 'specific expression'.

[125] *Bauer* (n 112) para 85. Similar wording can also be found in *Egenberger* (n 119) and *AMS* (n 118).

[126] *Audiolux* (n 38) paras 58-62.

Lazzerini argues that there was a shift in reasoning from *Mangold* and *Kücükdeveci*, which based the rationale for the doctrine on the primacy of EU law, towards justifying the doctrine on the basis of horizontal direct effect of Charter provisions and general principles, seen in *Egenberger, Bauer* and others. She argues that this is the reason for the introduction of the requirements for direct effect under the specific expression doctrine.[127] It is worth also noting that the *Egenberger, AMS,* and *Bauer* line of cases are arguably contradictory: if the general principle or Charter provision has to be sufficient in itself, then why does it need specific expression? It would be more coherent to claim that the broader a principle or right is, the more likely that a specific expression is needed. It also arguably undermines the notion a 'general' principle, if the principle being expressed must satisfy the direct effect criteria.[128]

Since *Bauer* and *Cresco,* however, there has arguably been another change in tone, seen in the recent cases of *Academia de Studii* and *CCOO,* which have yet to receive academic attention. The CJEU did not refer to the direct effect criteria when finding that Article 3 (daily rest), Article 5 (weekly rest period) and Article 6 (maximum weekly working time) WTD were specific expressions of Article 31(2) Charter, instead stating that such expressions should not be 'interpreted restrictively'.[129] The CJEU held that, even though there was discretion within the implementation of Articles 3, 5 and 6, there should be consideration of the essential objective of the directive (to improve living and working conditions) and the fact that

[127] Nicole Lazzerini, 'The Horizontal Application of the General Principles of EU Law: Nothing Less than Direct Effect' in Ziegler and others (n 12).

[128] This point is raised by AG Trstenjak in *Dominguez* (n 9).

[129] *CCOO* (n 117) para 32.

the worker is the weaker party.[130] Advocate General Pitruzzella elaborated on the meaning of this, stating that there was a 'functional link' between the WTD and the fundamental rights in the Charter, and that these were not contractual rights but formed a small nucleus of fundamental inalienable rights of constitutional status.[131]

The reasoning in *Academia de Studii* and *CCOO* seems much more focused on the relationship between the general principle and the directive than the criteria for direct effect. It could be argued that this is because *Academia* and *CCOO* build from *Bauer,* which had already laid the groundwork for determining Article 31(2) Charter as self-sufficient. However, the CJEU in *CCOO* acknowledged that 'it is true that Articles 3, 5, 6(b) … do not establish the specific arrangements' for their implementation by Member States who instead 'enjoy a discretion', thus departing from *Bauer* which underscored Article 7 WTD as having direct effect.[132] This therefore reflects the CJEU's move away from strict adherence to the direct effect justification.

The approach of these two cases aligns more closely to earlier analysis which emphasised the relationship between the general principle and the directive provision. Lazzerini argues that *Kücükdeveci* was based on the notion of general principles and directives combining in 'a relationship of mutual enhancement',[133] reflecting Advocate General Bot's Opinion in the same case which encouraged the court to 'disconnect' the

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[130] *CCOO* (n 117) paras 42 – 44.

[131] Case C-585/19 *Academia de Studii Economice din Bucureşti v Organismul Intermediar pentru Programul Operaţional Capital Uman - Ministerul Educaţiei Naţionale* [2020] ECLI:EU:C:2020:899, Opinion of AG Pitruzzella, paras 34 and 38.

[132] *CCOO* (n 117) paras 41 – 42.

[133] Lazzerini (n 127) 179.

doctrine of specific expression from direct effect.[134] In her framework for the doctrine, Muir similarly argues for emphasis on the ‘organic relationship’ between the legislation and the general principle as a determining factor,[135] and Advocate General Trstenjak considered the doctrine to require that the directive provision has a ‘status within the EU legal system of a general principle above and beyond its codification under secondary law’.[136] This focus is therefore on the relationship between the two provisions, rather than on the potential to have direct effect.

The last, most recent development in the specific expression doctrine is arguably the case of *KL v X,* which has received considerable academic attention.[137] The case held that national law which did not mandate for reasons on the termination of fixed-term work was contrary to Clause 4 on Equal Treatment in the Fixed-Term Work Directive:[138] although Clause 4 did not have horizontal direct effect, the national law could be disapplied as it undermined the right to an effective remedy under Article 47 Charter which was sufficient in itself to confer a right (since the lack of reasons prevented the worker from deciding whether to go to court).

Some have argued that this introduced a new possibility of finding horizontal direct effect for directives, since Article 47 Charter was directly relied upon without an

[134] AG Bot in *Kücükdeveci* (n 2) para 89.

[135] Elise Muir, *EU Equality Law: The First Fundamental Rights Policy of the EU* (Oxford University Press 2018).

[136] AG Trstenjak in *Dominguez* (n 9) para 148.

[137] Case C-715/20 *KL v X sp z oo* [2024] ECLI:EU:C:2024:139.

[138] Council Directive 1999/70/EC of 28 June 1999 concerning the framework agreement on fixed-term work [1999] OJ L175/43.

intrinsic link to the directive being invoked (the Fixed-Term Directive, in this case).[139] However, it is argued that this case should more convincingly be regarded as innovative jurisprudence confined to Article 47 Charter, rather than as developing the specific expression doctrine.[140] The judgment ultimately held that the national law itself hindered the claimant's access to the court, which undermined Article 47 Charter: it did not hold that the conflict between national law and a directive undermined the claimant's access to a remedy, which would have fundamentally reshaped the direct effect doctrine.

Overall, it is clear from the case law that the contours for the doctrine are still changing, and that various justifications and interpretations exist simultaneously. For the purposes of the humanisation principle, however, this ambiguity strengthens the possibilities of Article 13 satisfying the specific expression doctrine.

Application of the specific expression doctrine to Article 13

Having outlined the (ambiguous) requirements for the specific expression doctrine, this section will now consider its applicability to Article 13 WTD and its earlier iteration in Article 6(2)(d) Framework Directive on Safety and Health.

Building particularly on *Academia* and *CCOO,* it is argued that Article 13 can be seen as a specific expression of the right to working conditions which respect health,

[139] Fien Van Reempts, 'The Court of Justice of the EU and the Philosopher's Stone: The Independent Horizontal Direct Effect of Article 47 of the Charter in *K.L. v X*' (2024) 20 European Constitutional Law Review 482.

[140] A similar approach was taken in Case C-792/22 *Criminal proceedings against MG* [2024] ECLI:EU:C:2024:788, which precluded national law based on Article 47 Charter read in conjunction with certain articles in the Framework Directive on Safety and Health concerning which national courts could rule on accidents at work. The emphasis here was similar access to a remedy, thus reflecting innovative use of Article 47 Charter rather than the development of the doctrine.

safety and dignity, as codified in Article 31(1) Charter. Whilst most of the cases concerning the WTD rely on Article 31(2) – the right to limitations on maximum working time – it is argued that Article 13 is unique in that it does not address time limitations but 'patterns' of work (as per its heading). It is therefore better aligned to the right of health, safety and dignity, than to time limitations.

It seems highly likely that the right to a safe, healthy and dignified workplace is considered a general principle of EU law. As discussed earlier, this is due to the importance of dignity within human rights instruments and the long-standing emphasis on health and safety in labour law. Moreover, limitations on working time are discussed as necessary for health and safety: it would therefore be contradictory for the CJEU to hold one as a general principle and not the other.[141]

The challenging part is whether the right is 'sufficient in itself', 'mandatory' and 'unconditional' under the *Egenberger/Bauer* criteria to draw a specific expression from. Relying particularly on *AMS*, which held that the right to information and consultation of workers under Article 27 Charter was not sufficient in itself to confer a right, it could be argued that Article 31(1) is too imprecise to be relied upon. Particularly when compared to Article 31(2) Charter, which prescribes a specific measure (ie, limits on maximum working time), Article 31(1) leaves significant discretion to Member States as to how to ensure a safe, healthy and dignified working conditions.

[141] Cecchini (n 111) notes that there is dispute over whether the CJEU recognises the right to annual leave as a general principle; there seems to be consensus that it is following *Bauer* (n 112) para 80, which regarded it as an 'essential principle of EU social law'. Moreover, Advocate General Trstenjak's analysis in *Domiguez* (n 9) predated *Bauer,* and gave detailed evidence from international instruments and Member State constitutions which support the classification of paid annual leave as a general principle of EU law.

However, it seems likely that Article 31(1) of the Charter would be regarded as mandatory[142] and unconditional: it is not caveated by 'in accordance with' national laws as other Charter provisions and Article 1 Charter outlines human dignity as 'inviolable'. Moreover, the CJEU in *Mangold* and *Kücükdeveci* both relied upon the principle of non-discrimination for the doctrine of specific expression, and in *AMS,* there was limited reasoning for the decision other than that Article 27 was *not* comparable to Article 21 (non-discrimination) which was sufficient in itself. Hence, when Article 31(1) is compared to the principle of non-discrimination, it appears to take the same mandatory, unconditional and self-contained tone. Neither right prescribe measures for achieving the outcome, but rather assert that these conditions (non-discrimination, and a healthy, safe and dignified workplace) must be assured.

This is aside from the more overarching discussion of whether the *Egenberger/Bauer* criteria are required for both general principles and Charter provisions, or Charter provisions only. If the latter, then the criteria could potentially be bypassed when relying on the general principle of a safe, healthy and dignified workplace.[143] It would seem contradictory to require general principles to be specific enough to confer a right, since it strains the very notion of a 'general' principle in need of further expression.

[142] It is not fully clear from case law what 'mandatory' means: in *Egenberger* (n 119) para 76, the CJEU used the phrase 'mandatory as a general principle' suggesting that all general principles would automatically be mandatory. This compares to *Bauer* (n 112) para 83, which referred to the general principle as needing to be 'mandatory in nature'. Either way, however, for the purposes of the right to health, safety and dignity at work both seem fulfilled.

[143] There is also a possible argument to be made that, because the humanisation principle contained in Article 13 WTD predates the Charter (having developed over a specific historical timeframe and context) it is more convincing to analyse it under the general principle framework rather than as under the Charter.

It could further be argued that the *Egenberger/Bauer* criteria applies only where the doctrine is being evoked to disapply national law in a horizontal dispute. This compares to *Academia* or *CCOO,* where the doctrine was used as a constitutional guide to interpretation by the CJEU. In *Academia*, the CJEU held that the limits of the WTD applied to a worker who had more than one contract with the same employer. The CJEU relied on the fact that Article 3 (daily rest) gave specific form to the fundamental right of working time limitations and was therefore derived not through a contract but to every worker. In *CCOO,* the specific expression doctrine was used to challenge the interpretation of the Spanish national courts which held that employers were not under an obligation to record workers' time. The CJEU held contrarily that there was an obligation on employers to record workers' time in order to ensure that Articles 3, 5 and 6, which gave specific form to the fundamental right in Article 31(2) Charter, were effective. These cases deployed the specific expression doctrine for purposes outside of disapplying national law, evoking some of the other roles that general principles play, such as interpretative aids or as standards to review the legality of other provisions against. It could therefore be argued that the direct effect requirements in *Egenberger/Bauer* are tailored only to the use of the doctrine in a horizontal setting to disapply national law. As such, it seems likely that the right to a safe, healthy and dignified workplace can be used for the specific expression doctrine, at least in certain circumstances, if not all.

Having identified the general principle being expressed (the right to safe, healthy and dignified working conditions), the next step is to consider whether Article 13 WTD can be regarded as a specific expression of this right.

Textually, this approach is supported by the framing of the humanisation principle in the Framework Directive on Safety and Health which outlines nine 'general principles of prevention' for achieving a safe and healthy working environment, of which Article 6(2)(d) includes the general principle of adapting work to the individual. This is similarly reflected in ILO reports which discuss adapting work to the worker as one of the core principles of occupational health and safety.[144] Article 13 WTD, as an implementing directive of the Framework Directive on Safety and Health, can be seen as referring to the general principles of prevention, thus continuing this framing. This would also reflect the 'relationship of mutual enhancement' approach to the doctrine,[145] since the drafting of Article 13 draws upon the word 'general principle'.

However, it could be argued that the humanisation principle is too broad and non-prescriptive to be a specific expression, following the reasoning in *Audiolux* which held that specific expressions should not require a weighing up of interests and different legislative choices to achieve them. Since the principle of adapting work to human needs extends beyond the right to health and safety, it thus runs contrary to the very idea of a 'specific' expression.

This can be countered, however, by focusing on the humanisation principle as a specific expression of 'dignity' within the right to safe, healthy and dignified working conditions in Article 31(1) Charter. As discussed, the scope of dignity in the workplace is multifaceted, spanning freedom from discrimination and slavery, to fair treatment,

[144] ILO, 'Support Kit for Developing Occupational Safety and Health Legislation' (ILO 2021).

[145] Lazzerini (n 127) 179.

limits on working time,[146] and a duty of care.[147] The humanisation principle goes to the 'humanising' aspect of dignity, recognising that it is human lives, not machines, at work. It is therefore one of the many expressions of the right to dignity at work. Textual support for this comes from the most recent regional iteration of the humanisation principle, found in the European Pillar of Social Rights. The Pillar separates out the right to protection of 'health and safety at work' in Principle 10(a) from the right to a 'well-adapted environment' in Principle 10(b), thus alluding to an alternative, dignitarian grounding. Hence, rather than regarding the humanisation principle as undermining legal certainty, it actually enhances legal certainty by giving concrete expression to the one of the most intangible yet inviolable rights, the right to dignity.

Moreover, following *Academia* and *CCOO,* it can be argued that the requirements under *Audiolux* are no longer paramount. Instead, the objective of the directive and the workers' position as the weaker party should also be considered. This approach also finds support in EU data protection law, which is increasingly characterised by a similar structural imbalance of power between individuals and private bodies. Muir highlights a number of cases relying on the specific expression doctrine to classify secondary legislation as giving specific form to the right to data protection.[148] It thus appears that the CJEU is particularly amenable to the use of the doctrine in light of power imbalances, and that Article 13 may be regarded as a specific expression of a general principle in light of its objective and context.

[146] Bogg and Ford (n 53) refer to the Opinion of Advocate General Tanchev in Case C-214/16 *Conley King v The Sash Window Workshop Ltd and Richard Dollar* [2016] ECLI:EU:C:2017:439, which referred to limitations of working time as a part of dignity.

[147] The ILO Administrative Tribunal's decisions often discuss the duty of care as a part of respecting dignity, see n 80.

[148] Muir (n 135).

Overall, this section has shown that Article 13 can be regarded as specific expression of the general principle of a right to a safe, healthy and dignified workplace. At the heart of this doctrine is a continually evolving approach with undefined contours. Where discussion of other types of quasi-general principles discussed in EU law fit in, for instance, 'sub-general principles'[149] or principles in the 'interests of the Community',[150] is unclear. As noted by Advocate General Trstenjak, 'rules on fundamental rights can basically be worded in a legally abstract fashion, particularly in order to take account of political and social changes'.[151] It therefore seems that, since the criteria is ever-evolving, it should be guided by the CJEU's most recent discussion in *Academia* and *CCOO,* which applied the doctrine broadly to ensure protection of workers as the weaker party.

Conclusion

It may never be known whether the drafters of Article 13 WTD intended the phrase 'general principle' to be given much weight. What is clear, however, is that it was agreed upon in the text and does allude to a guiding principle wider than health and safety. This alone is sufficient to consider its potential as a more profound provision.

This chapter has investigated that possibility. Reviewing international, regional and national law, it is argued that the term 'general principle' should not regarded as

[149] As discussed in Directorate-General for Internal Policies (n 11).

[150] In *Jippes* (n 26) para 77, the CJEU found that protection of animal welfare was not a general principle but was included within the 'interests of the community'.

[151] AG Trstenjak in *Dominguez* (n 9) para 78.

coincidental. Rather, the requirement to adapt work organisation to human needs finds constitutional legitimacy in numerous sources. Derived from the protection of workers' dignity to protection of their family life, there is a common shared value of adapting work to the worker.

Two avenues have been highlighted as open to the CJEU for finding the general principle status of Article 13. The humanisation principle could either be considered using the 'traditional' general principle route, or under the specific expression route.

Whilst both avenues are conceptually distinct – one would regard the humanisation principle as a standalone general principle, the other as an expression of a broader general principle of health, safety and dignity at work – the net result may not be that distinct. Under both avenues, the possible uses of Article 13 would extend significantly beyond that of an ordinary provision in a directive. As a general principle or specific expression of one, the humanisation principle could be deployed in three main ways: (i) as a constitutional aid for interpretation, (ii) as a gap-filling mechanism, or (iii) to review the legality of EU and specific national law.

Over the course of the final three chapters, these distinct uses of Article 13 will be examined in the context of algorithmic time. Having outlined the status and substance of Article 13, the thesis now moves to *applying* the provision to specific case studies of algorithmic time. Turning to the first of the three 'application' chapters, the next chapter considers the role of Article 13 WTD in addressing the phenomenon of temporal disciplining in platform work.

Chapter 5

Applying Article 13 to Temporal Disciplining in Platform Work

Introduction

Time is a 'regulatory device with a very strong compelling force'. [1] The phenomenon of temporal disciplining, developed in Chapter 1, maximises this regulatory force. By using algorithmic management to allocate a worker's schedule based on their productivity, it renders time spent *outside of work* conditional upon one's performance *at work*.

This chapter investigates whether the practice of temporal disciplining is precluded by the humanisation principle contained in Article 13 of the Working Time Directive. It is the first chapter in a line of three 'application' chapters within this thesis which examine Article 13's regulatory potential.

To do this, the chapter focuses on a specific case study of temporal disciplining in platform work which provides the facts for examining a potential claim before the CJEU. The chapter then turns to examining how a claim, based on those facts, might appear before the CJEU. It highlights the different avenues, followed by the central examination of the merits of the case itself. Drawing on existing CJEU case law, the chapter ultimately argues that the use of temporal disciplining in the platform work case study examined could plausibly infringe the humanisation principle in Article 13 WTD.

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[1] Norbet Elias, *Time: An Essay* (Blackwell, 1992) 45.

Case Study of Temporal Disciplining in Platform Work

The concept of temporal disciplining was outlined in Chapter 1. To recap, it involves the use of time as a 'control' mechanism,[2] whereby algorithmic systems reward or discipline workers using their working time preferences. If a worker performs well, for example, they are automated granted working time privileges, such as weekends off or first access to the most lucrative shifts. Conversely, a worker who performs poorly is disciplined by reduced access to their shift preferences.

With the increasing emphasis on recognising worker status for platform workers,[3] temporal disciplining has become more prevalent on labour platforms.[4] This is because platforms need alternative means for motivating workers who are guaranteed set hours or baseline pay as employees.[5] What typically happens is that platform workers with the highest rankings are given 'early-access' to prebook their shifts for the following week. [6]

This chapter focuses on a specific case study of temporal disciplining by the food delivery platform Foodora in Berlin which relied upon this pre-booking system.

[2] Heiner Heiland, 'Neither Timeless, nor Placeless: Control of Food Delivery Gig Work via Place-Based Working Time Regimes' (2022) 75 Human Relations 1824, 1824.

[3] Particularly following the rebuttable presumption of employment within Directive (EU) 2024/2831 of 23 October 2024 on improving working conditions in platform work [2024] OJ L2024/2831.

[4] Examples of labour platforms which have used temporal disciplining include PedidosYa and Deliveroo, as described in Uma Rani and others, 'Delivery workers, trapped in an algorithmic system' (2022) Sociologia 15; Instacart, as described in Kathleen Griesbach and others, 'Algorithmic Control in Platform Food Delivery Work' [2019] Socius 5; Foodora, as described in Heiland (n 2) and Mirela Ivanova and others, 'The App as a Boss? Control and Autonomy in Application-Based Management' (Arbeit, Genzen, Fluss 2018.

[5] Heiland (n 2).

[6] Griesbach and others (n 4) 9.

The study was conducted by Ivanova and others in 2018 and was chosen predominantly because Foodora classified its workers as employees.[7] The study therefore illustrates the issues highlighted in Chapter 2, which is that even those *with* worker status have limited protection, aside from Article 13 WTD, against temporal disciplining. The study is also corroborated by Heiland's analysis of Foodora riders in Berlin during a similar time frame which made comparable findings.[8]

The facts of the case study are as follows. Ivanova and others conducted interviews and participant observations of riders for Foodora, an app-based labour platform which instructs riders (usually on bikes) to pick up food orders from restaurants and then deliver them to the customer's home.[9] As all the riders were employees of Foodora, they were guaranteed at least German minimum wage per hour. Riders could agree to mini-jobs, midi-jobs or full-time contracts and could not decline shifts: if they did not show up for a shift, it was marked as a 'strike' and three strikes meant a worker could be dismissed.

All shifts were allocated based on performance metrics. Riders were placed each week into three categories, known as 'badges'. On Mondays, the best performers (those in badge one) were able to choose their shift schedule for the next week. The second badge riders could choose their shifts on Tuesday, and the third badge riders could choose on Wednesday.

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[7] Ivanova and others (n 4).

[8] Heiland (n 4).

[9] Foodora in Berlin has since become part of the food delivery platform, Lieferando: Lisa Ksienrzyk, 'Kein Pink mehr auf den Straßen: Foodora ist jetzt Lieferando' *Business Insider* (18 April 2019) <https://www.businessinsider.de/gruenderszene/food/foodora-lieferando-integration/> accessed 10 July 2024.

The criteria used to sort the riders in badges was unclear (and other studies detail how this is often not known to platform workers and changes regularly).[10] Ivanova and others viewed an email from Foodora to one of the riders who had requested the information, which stated that Foodora determined the groups based on six criteria: weekend shifts after 8pm (30%), average weekly hours (25%), late log ins (5%), no shows (25%), orders hour deviation (10%), and experience working with the company (5%). In order to be in badge one, and therefore have first access to shift choices, it required scoring highly in these performance metrics.

As a result of the system, Ivanova and others remarked that 'the worst performers have hardly any choice of working time at all'.[11] Those riders in the third badge group reporting finding it 'really hard' and were 'struggling' since they were often automatically assigned the anti-social or unlucrative hours without choice.[12]

Whilst the study is now dated (published in 2018), the use of booking systems is still common among platforms.[13] There are other studies which report similar findings of the effect of temporal disciplining on platform workers. Heiland's study found that the pressure to maintain the badge position was so intense that the majority of platform workers continued to work during injuries or illness.[14] One platform

[10] Griesbach and others (n 4).

[11] Ivanova and others (n 4) 15.

[12] ibid.

[13] See Tuomo Alasoini and others, 'Platform Workers and Digital Agency: Making out on Three Types of Labor Platforms' [2023] 8 Frontiers in Sociology.

[14] Heiland (n 2) found that 58% of those surveyed (workers at Deliveroo and Foodora) had gone to work feeling ill at least once.

worker was reported to have been punished by losing their priority position after taking just one days' rest due to a major cycling accident at work.[15]

By allocating working time based on performance, time spent with friends or family is ultimately dependent upon a productive week. As Griesbach and others' study found, this 'naturally becomes a source of anxiety': as one platform worker put it, 'everybody that has 'early access' wakes up in a cold sweat in the middle of the night to check their app to make sure they still have it'.[16] This fear of losing their early access to shifts enables employers to exert even greater pressure over the platform workers.[17] There are also significant gender implications: where performance metrics depend upon working late night shifts or weekends, those with caregiving responsibilities will inevitably penalised. There is therefore a real concern that the system of temporal disciplining places substantial power into the hands of employers 'who can potentially use their discretion to cause significant suffering to specific workers'.[18]

In light of this, the chapter draws upon Ivanona and others' study to examine whether temporal disciplining is precluded by Article 13 WTD. If so, this could have a significant regulatory effect in curtailing some of the harmful impacts discussed above. The next two sections therefore examine the avenues in which such a case could arise before the CJEU, followed by an exploration of the merits of the case itself.

Framing the Claim

[15] Heiland (n 2) 1838.

[16] Griesbach and others (n 4) 10.

[17] ibid 9.

[18] Alex Wood, *Despotism on Demand: How Power Operates in the Flexible Workplace* (Cornell University Press 2020) 87.

As discussed in Chapter 2, there are multiple EU-level instruments which could regulate the use of temporal disciplining on platform work. Since the case study concerns those classified as 'workers', this should entitle the workers to protection under the WTD, Platform Work Directive,[19] Transparent and Predictable Working Conditions Directive[20] and Framework Directive on Safety and Health,[21] while provisions under the GDPR[22] and Artificial Intelligence Act[23] also apply regardless of status.[24]

It was ultimately argued in Chapter 2 that under this patchwork of protection, Article 13 WTD ought to provide the starting point for examining algorithmic time. This is because the WTD deals specifically with issues of working time and, within the directive itself, Article 13 is the only provision governing 'patterns' of time rather than the duration of time. This therefore marks Article 13 out as the key EU-level provision offering substantive guidance on how working time should be organised, particularly when compared with other EU instruments which focus predominantly on the standard model of time, procedural norms, or risk assessments. How Article 13 WTD could be

[19] Platform Work Directive (n 3).

[20] Directive (EU) 2019/1152 of 20 June 2019 on transparent and predictable working conditions in the European Union [2019] OJ L186.

[21] Council Directive (89/391/EEC) of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work [1989] OJ L183/1.

[22] Regulation 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data [2016] OJ L 119/1.

[23] Regulation (EU) 2024/1689 of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) [2024] OJ L2024/1689.

[24] Council Directive 97/81/EC of 15 December 1997 concerning the framework agreement on part-time work [1998] OJ L 14/9 and Directive 2006/54/EC of the European Parliament and of the Council of 5 July 2006 on the implementation of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation (recast) [2006] OJ L204 could be relevant in regulating any indirect sex discrimination arising from the use of temporal disciplining, although space prevents this from being the focus of this chapter.

used *in conjunction with* other EU instruments is discussed in the other two application chapters.

What this chapter intends to do therefore is analyse whether temporal disciplining is compatible with Article 13 WTD, based on applying a set of facts to a hypothetical construction of how the CJEU typically interprets principles of EU law. Whilst this is an abstract examination, there are different avenues in which such a scenario may arise in reality.

The most foreseeable scenario would involve a national court requesting a preliminary ruling from the CJEU on the interpretation of the WTD.[25] In a national dispute between a platform and its workers, the national court might stay proceedings to ask whether temporal disciplining is an infringement of the humanisation of work principle contained in Article 13 WTD.

How this request might be formulated depends on how Article 13 is transposed in national law. Were Article 13 transposed *verbatim* or in a similar manner, as seen in some Member States,[26] then the national court may simply ask the CJEU for guidance as to how Article 13 WTD should be interpreted.

Alternatively, the referred question could arise in a scenario where national law explicitly allows for temporal disciplining. The national court may decide to stay

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[25] Under Consolidated Version of The Treaty on the Functioning of the European Union [2012] OJ C326/47 (TFEU), Article 267.

[26] For example, the Spanish transposition appears in Article 36(5) Real Decreto Legislativo 2/2015 Estatuto de los Trabajadores, which can be translated as 'the employer who organizes the work in the company according to a particular model must take into account the general principle of adapting the work to the person, in particular with a view to reducing monotonous and repetitive work, depending on the nature of the activity and the safety and health requirements of the workers'. The German transposition of Article 13 WTD appears to be Section 6 Arbeitszeitgesetz (ArbZG) 1994, which can be translated as 'the working hours of night and shift workers shall be determined in accordance with established ergonomic findings on the humane organization of work'. A copy of the WTD appears in the Irish Organisation of Working Time Act 1997, suggesting it has been transposed verbatim.

proceedings to ask the CJEU whether this national law is precluded by Article 13 WTD and should therefore be disapplied. Analogy could be made with cases like *Shimizu*[27] and *Bauer*[28] which examine whether certain national laws are incompatible with Article 7 WTD. The lack of national laws on scheduling could also potentially be raised as an infringement of Article 13 before the CJEU: this could be analogised with *Wippel,* in which the national court asked if the absence of laws for on-demand workers was discriminatory towards part-time and female workers.[29]

In order to bring these types of claims, it may require an examination of whether Article 13 WTD can be relied upon *directly* by the platform workers in their national court. As was discussed in Chapter 4, this can only be done in a horizontal dispute if the humanisation principle in Article 13 is a general principle or a specific expression of a general principle. Whilst it was argued in Chapter 4 that the humanisation principle can be seen a general principle or specific expression, it is not clear from the case law if this would then require a *further* examination of whether the general principle or specific expression must also fulfil the criteria for direct effect to be used *horizontally* to disapply national law.[30]

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[27] Case C-684/16 *Max-Planck-Gesellschaft zur Förderung der Wissenschaften eV v Tetsuji Shimizu* [2018] ECLI:EU:C:2018:874 examined whether national law which stated that payment of holidays in lieu had lapsed after a certain period and could not be claimed on termination was precluded by Article 7 WTD.

[28] Joined Cases C-569/16 and C-570/16 *Stadt Wuppertal v Maria Elisabeth Bauer and Volker Willmeroth v Martina Broßonn* [2018] ECLI:EU:C:2018:871examined whether national law which prevented payment for holiday in lieu going to the estate of the deceased worker was precluded by Article 7 WTD and Article 31(2) Charter.

[29] Case C-313/02 *Nicole Wippel v Peek & Cloppenburg GmbH & Co KG* [2004] ECLI:EU:C:2004:607.

[30] Advocate General Trstenjak argued that that general principles do have to be unconditional and precise to be directly applicable to relationships between private individuals, however, this was not the case in *Mangold* and *Kücükdeveci. Defrenne* similarly considered the fact that the general principle of equal pay was 'mandatory in nature' for horizontal direct effect (para 39), which arguably varies from the conditions of precision or sufficient in itself seen in other cases: Case C-282/10 *Maribel Dominguez v Centre informatique du Centre Ouest Atlantique and Préfet de la région Centre* [2012] ECLI:EU:C:2011:559, Opinion of AG Trstenjak; Case C-144/04 *Werner Mangold v Rüdiger Helm* [2005] ECLI:EU:C:2005:709; Case C-555/07 *Seda Kücükdeveci v Swedex GmbH & Co KG* [2010] ECLI:EU:C:2010:21; Case 43-75 *Gabrielle Defrenne v Société anonyme belge de navigation aérienne Sabena* [1976] ECLI:EU:C:1976:56, para 39.

To have direct effect, the EU law in question must be sufficiently precise, clear and unconditional.[31] As mentioned in Chapter 4, the fact that Article 13 begins with the phrase 'Member States shall take measures' does not necessarily prevent it from having direct effect: nearly all the provisions in the WTD start with this phrase, yet Articles 3, 5, 6 and 7 have been relied upon in horizontal disputes.[32] Whilst it could be argued that the principle of 'adapting work to the worker' is too abstract to be compared to other WTD provisions which set limitations on working time, the fact that the scope, nature, and duty of the humanisation principle were outlined in Chapter 3 indicates that the provision does have defined contours, of which employer practices may or may not infringe. Analogy can be made with the principle of non-discrimination where some infringements may be overt, others more debatable: this leeway ultimately has not affected the ability of the principle to be relied upon directly in a horizontal dispute.[33]

Whether Article 13 does or does not fulfil the criteria for direct effect, however, does not negate the fact that there are other scenarios in which the CJEU could interpret the compatibility of temporal disciplining with the humanisation principle. The duty of harmonious interpretation, or indirect effect, requires that national law be interpreted in conformity with EU law 'as far as possible'.[34] As discussed Chapter 4, this can be

[31] Case 41-74 *Yvonne van Duyn v Home Office* [1974] ECLI:EU:C:1974:133, building on the criteria in Case 26-62 *NV Algemene Transport- en Expeditie Onderneming van Gend & Loos v Netherlands Inland Revenue Administration* [1963] ECLI:EU:C:1963:1.

[32] See the cases in Chapter 4, namely *Bauer* (n 28); Case C-55/18 *CCOO v Deutsche Bank SAE* [2019] ECLI:EU:C:2019:402; Case C-585/19 *Academia de Studii Economice din Bucureşti v Organismul Intermediar* [2021] ECLI:EU:C:2021:210.

[33] See *Mangold* (n 30) and *Kücükdeveci* (n 30).

[34] Case C-106/89 *Marleasing SA v La Comercial Internacional de Alimentacion SA* [1990] ECLI:EU:C:1990:395, para 8.

forceful obligation,[35] meaning that even if Article 13 were not transposed *verbatim*, it should still be interpreted as in intended under EU law unless this is not possible.

Within EU labour law, there are many CJEU cases which examine whether a set of facts are compatible with a directive provision or general principle without determining if the provision has direct effect but rather to ensure harmonious interpretation (this largely reflects the intended notion of a preliminary ruling, ie., where the CJEU offers guidance to a national court on the interpretation of EU law). Examples include *Danfoss,*[36] *Robinson-Steele,*[37] *Academia di Studii, Yodel*[38] and *BX.*[39] In these cases, the CJEU was concerned primarily with providing guidance to the national court on the interpretation of an employers' practice, based on a set of facts, with a directive (or directive provision) without addressing direct effect. *Balkaya*[40] and *Jaegar*[41] are cases which even disapply national law on the basis of incompatibility with a labour law directive without reference to direct effect, but rather to prevent the frustration of the harmonisation objectives of the directive in question. As stated in *Jaegar*, 'although it is not for CJEU, under [Article 267 TFEU], to rule upon the compatibility of a provision of domestic law with Community law … it may nevertheless provide the national court with an interpretation of Community law on all

[35] As noted in Chapter 4, in *Dominguez*, the CJEU urged the national court to reconsider interpreting the provision in compliance with the directive, even though the Advocate General had acknowledged that the national court felt this was impossible: Case C-282/10 *Maribel Dominguez v Centre informatique du Centre Ouest Atlantique and Préfet de la région Centre* [2012] ECLI:EU:C:2012:33.

[36] Case 109/88 *Handels- og Kontorfunktionærernes Forbund I Danmark v Dansk Arbejdsgiverforening, acting on behalf of Danfoss* [1989] ECLI:EU:C:1989:383.

[37] Joined cases C-131/04 and C-257/04 *C D Robinson-Steele v R D Retail Services Ltd* [2006] ECLI:EU:C:2006:177.

[38] Case C-692/19 *B v Yodel Delivery Network* [2020] ECLI:EU:C:2020:288.

[39] C-909/19 *BX v Unitatea Administrativ Teritorială D* [2021] ECLI:EU:C:2021:89.

[40] Case C-229/14 *Ender Balkaya v Kiesel Abbruch- und Recycling Technik GmbH* [2015] ECLI:EU:C:2015:455.

[41] Case C-151/02 *Landeshauptstadt Kiel v Norbert Jaeger* [2003] ECLI:EU:C:2003:437.

such points as may enable that court to determine the issue of compatibility for the purposes of the case before it'.[42] As such, there are various avenues in which the CJEU may be called upon to examine whether an employers' practice is compatible with Article 13 WTD in order to aid the harmonious interpretation of EU law, *even if* the humanisation principle is not regarded as a general principle nor capable of direct effect.

Merits of the claim

Having discussed various possibilities in which the CJEU may adjudicate on Article 13 WTD, this chapter now turns to examining how the CJEU might respond to a question of whether temporal disciplining outlined in the case study above is compatible with the humanisation principle contained in Article 13.

To structure this analysis, the section adopts the CJEU's standard approach to assessing principles of EU law. This tends to involve a three-part test: the CJEU first assesses whether the principle has been infringed and then whether the infringement can be justified by pursing a legitimate aim in a manner which is proportionate (based on suitability and necessity).[43] It seems likely that the CJEU would apply this approach to the humanisation of work principle, given that Article 13 WTD explicitly refers to the 'principle' of adapting work to the worker and the fact employers must 'take[s] account' of the principle, which implies a balancing of interests. This is furthered by remarks in *Pereda* which states that the scheduling of annual leave should take into account the 'various interests involved, including overriding reasons relating to the

[42] *Jaeger* (n 41) para 43.

[43] For evidence of this approach, see footnote 208 in Chapter 3.

interests of the undertaking'.[44] Whilst these remarks were made in the context of paid annual leave, they indicate that working time scheduling practices involve a proportionality approach. Hence, this section will follow the CJEU's standard framework for interpreting the humanisation principle in Article 13 WTD.

Infringement

This section of analysis thus firstly asks whether Foodora's practice of temporal disciplining could constitute an *infringement* of the humanisation of work principle.

Many of the CJEU's decisions start by outlining the relative importance of the provision being examined.[45] As established in the previous chapters, the humanisation of work principle found in Article 13 is a long-standing principle which requires that patterns of work are adapted to the worker. This means that working time schedules should be adapted to the physical, psychosocial and specific needs of workers through worker input.

Article 13 is notable in that it can be regarded as giving specific expression to the right to dignified, safe and healthy working conditions, as found in Article 31(1) of the Charter of Fundamental Rights (Charter).[46] This is similar to the CJEU's treatment of other provisions in the WTD which also give expression to fundamental rights, notably Articles 3, 5, 6 and 7 WTD.[47] The importance and mandatory nature of Article

[44] Case C-277/08 *Francisco Vicente Pereda v Madrid Movilidad SA* [2009] ECLI:EU:C:2009:542, para 22.

[45] See, for example, *Academia de Studii* (n 32) or Case C-266/14 *CCOO v Tyco Integrated Security* [2015] ECLI:EU:C:2015:578.

[46] Charter of Fundamental Rights of the European Union [2016] OJ C202/02.

[47] *Bauer* (n 28); *CCOO v Deutsche Bank* (n 32).

13 is further underscored by the fact that there is no possibility of derogating from it under Article 17 or 18 WTD.[48] Hence, the duty to adapt work to the worker is one of particular social significance, of which adherence to by employers is paramount for the upholding of dignity, safety and health at work.

The CJEU and Advocates General have also consistently highlighted that, when it comes to the WTD, provisions should not be interpreted narrowly and the protective purpose should be brought to the fore.[49] Hence, when examining whether temporal disciplining infringes the humanisation of work principle, the emphasis should be on protecting the worker.

In light of this, it is argued that Foodora's practice of temporal disciplining can conceivably amount to an infringement of the humanisation of work principle. By tying working time schedules to performance, the practice bypasses consideration of the physical, psychosocial and specific needs of workers. This has the effect of undermining the very essence of the humanisation principle contained in Article 13.

Starting with physical needs, the humanisation principle requires that the bodily toll of working time schedules be taken into account when shifts are organised. Looking at the metrics used by Foodora to rank its employees (known as riders), however, it is arguable that these physical needs have not been considered.

The platform actively rewards riders who work faster, later, and more often. This is seen through the metrics of 'weekend shifts after 8pm', 'average weekly hours'

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[48] The CJEU has often highlighted this point in relation to Article 7 WTD to emphasise its importance, see *Shimizu* (n 27) para 54 and Case C-173/99 *The Queen v Secretary of State for Trade and Industry, ex parte BECTU* [2001] ECLI:EU:C:2001:356, para 43.

[49] See *Shimizu* (n 27) para 58, *Academia de Studii* (n 32) paras 49-51; Opinion of AG Pitruzzella in *Academia de Studii* (n 32) para 25.

and 'orders hour deviation'. The extent to which these metrics result in riders pushing their bodies is illustrated through Heiland's study: many riders reported working whilst ill, with one working with a broken toe for three weeks in 'hellish pain' to avoid losing their badge position.[50] Rather than adapting working time to workers' physical needs, the platform's use of temporal disciplining prioritises workers who exert the highest physical toll on their body through high speeds and long, consistent hours. By promoting physical excursion over the physical needs of workers, reliance on temporal disciplining therefore likely infringes upon the humanisation principle.

Turning to psychosocial needs, the humanisation principle requires that the human emotional needs of workers are taken into account when shifts are organised. Factors like stress, autonomy, monotony, work-life balance, worker satisfaction and social wellbeing are all part and parcel of considering psychosocial needs.

In the case study of Foodora, it is difficult to see how the use of temporal disciplining can be seen to take account of the psychosocial needs of workers. Temporal disciplining ties output to working time, creating constant psychological pressure on workers to perform. If workers cannot meet the productivity metrics for one week, the consequences can be devasting – by falling into a lower badge, the worker loses their chance to choose the shifts which fit their plans. Other commitments, such as childcare, social events and weekly hobbies, may then no longer be possible. Workers may also be reluctant to take time out of work for social engagements: booking a weeks' holiday can result in failing into the third badge, making it difficult to take future shifts.

[50] Heiland (n 2) 1838.

As Ivanova and others' study highlights, riders perceive this system as 'punitive', in which they 'lose the sphere of autonomy that was fundamental to their sense of control over their time, income and satisfaction'.[51] The emotional toll of tying working time to performance is high, with one worker in the third badge category saying: 'I cannot do this anymore'.[52]

Temporal disciplining appears particularly punitive because the importance workers place on free time, social life and time with family is used as a mechanism to motivate them to perform: failure to be productive at work puts life *outside of work* at risk. In this respect, temporal disciplining does take account of workers' psychosocial needs, but only to use them as an incentivising mechanism for performance. In *Wippel*, the Advocate General warned against the 'abusive' use of on-demand work[53] – whilst not elaborating further on what 'abusive' scheduling might look like, it is plausible that temporal disciplining comes close to what was being alluded to.

This is lastly compounded by the lack of transparency provided to the worker over what performance metrics are being use. Critical to psychosocial wellbeing is worker comprehension of the system.[54] However, as identified in multiple studies on delivery platforms, riders are not sufficiently informed of which metrics are used to rank them, and even if they are, these indicators regularly change.[55] In Ivanova and others' study, the metrics were only known through an email requested by a worker,

[51] Ivanova and others (n 4) 15.

[52] ibid 16.

[53] *Wippel* (n 29), Opinion of AG Kokott, para 113.

[54] EU-OSHA, 'Digital Platform Work and Occupational Safety and Health' (Publications Office of the EU 2022) 43.

[55] Ivanova and others (n 4); Griesbach and others (n 4).

with workers complaining that the system is not 'transparent' and that they 'don't really know how it works'.[56] It appears inconsiderate of workers' psychosocial needs to place such high stakes on performance, yet not provide clear guidance for workers as to how they can secure their desired shifts. A system which adapts work to the worker would arguably aim to minimise the emotional frustration caused by the unknown.

Hence, the psychological strain and inverted consideration of social needs arising from temporal disciplining largely suggests an infringement of the humanisation of work principle. The purpose of the principle, as the Commission during its drafting highlighted, is to adapt work organisation to become less 'dehumanising' and 'more meaningful and satisfying'.[57] In this case study, however, it appears that temporal disciplining adapts working time to the productivity interests of the employer rather than adapting working time to fulfil workers' psychosocial needs.

The final prong of the humanisation principle is the adaptation of working time schedules to the specific needs of workers. This requires that working time schedules take account of the needs of risk sensitive or vulnerable groups of workers. It recognises that 'not all workers have equal work ability'[58] due to both societal risk factors as well as biological ones. Working schedules must be able to adapt to the needs of a heterogenous workforce, therefore ensuring dignity for all workers.

In the case study of temporal disciplining, however, it appears unlikely that this requirement has been met. Foodora applies the performance metrics in a blanket

[56] Ivanova and others (n 4) 16.

[57] Commission, 'Reform of the Organisation of Work (Humanisation of Work) (Communication) COM (76) 253.

[58] Jorma Rantanen, 'The Principles of Occupational Health' in Tee L Guidotti (ed), *Global Occupational Health* (OUP 2011), 8.

manner, meaning that it fails to adapt the rewards and penalties mechanism for vulnerable workers. This issue was at the heart of an Italian case which considered temporal disciplining in the context of Deliveroo, a food delivery labour platform.[59] Workers who missed shifts were penalised by losing points and therefore their priority position in choosing future shifts. The Italian court held that the algorithm was unlawful for not considering the reasons behind the absence; it should have treated workers who missed shifts for trivial reasons differently from those with legitimate reasons like sickness or strikes.

In essence, the Italian court recognised that the inability to adapt the working time schedule to the specific needs of the worker rendered the regime unlawful. This reasoning could be applied by analogy to Foodora's use of temporal disciplining, as the performance metrics are not tailored to individual circumstances. For instance, workers are penalised for not working weekend shifts after 8pm regardless of whether they have childcare responsibilities, and are rewarded for working at fast speeds, regardless of whether they have physical conditions which may affect their pace. Without being able to tailor the performance metrics to the specific needs of workers, it runs contrary to the essence of adapting work to vulnerable or risk sensitive workers required under the humanisation principle.

Having examined all three prongs of the humanisation principle, it appears credible that Foodora's use of temporal disciplining in the case study fails to take into account the physical, psychosocial or specific needs of workers. Most notably,

[59] *Filcams CGIL Bologna, NIDIL CGIL Bologna and FILT CGIL Bologna v Deliveroo Italia S.R.L* (December 21 2021) Tribunale Ordinario di Bologna, Sezione Lavoro, N. R.G. 2949/2019. For discussion, see Sebastião Vale and Gabriela Fortuna, 'Automated Decision-Making Under the GDPR' (Future of Privacy Forum 2022) 39.

temporal disciplining does not seem to allow for workers to voice their input and needs into the distribution or pattern of shifts. Worker participation, however, is core to an employers' ability to fulfil the humanisation principle: it is difficult to demonstrate that workers' needs have been taken into account if they have no chance to participate. Thus, one of the central indicators of an infringement of the humanisation principle is the complete lack of input from workers as to their needs when it comes to scheduling.

The finding that temporal disciplining infringes the humanisation principle would resonate with the CJEU's existing case law and other EU legislative instruments. Whilst there is very limited case law on Article 13, that which does exist has linked the humanisation principle with Recital 4 WTD, which states that the objective of worker health and safety 'should not be subordinated to purely economic considerations'. As Advocate General Léger's Opinion in *UK v Council* noted, the WTD is not about securing 'productivity' or 'economic considerations' but aimed at ensuring that working time is 'envisaged from point of view of workers'.[60] It is therefore in keeping with this Opinion to view temporal disciplining as a contravention of the humanisation principle, since it by design subordinates the interests of workers to the employers' economic considerations.

The CJEU and Advocates General have also made other remarks regarding scheduling which emulate the values of the humanisation principle, although not explicitly linked to Article 13 WTD. These include that working schedules should be

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[60] Case C-84/94 *United Kingdom of Great Britain and Northern Ireland v Council* [1996] ECLI:EU:C:1996:431, Opinion of AG Léger, paras 87-90.

respectful of the 'duty of care',[61] not used in an 'abusive manner',[62] and that annual leave should take 'into account the various interests involved'.[63] In *Radiotelevizija Slovenija,* the CJEU held that working time should not be organised in a way which creates a 'psychological burden' on the worker who is unable to fully rest.[64] It can be argued that the constant pressure to perform created by temporal disciplining amounts to a constant psychological burden on the worker, and that the finding of an infringement of the humanisation principle would therefore resonate with the CJEU's directions on scheduling so far.

A finding of an infringement would also support the intention of other EU legislative instruments, aside from the WTD. The Transparent and Transparent and Predictable Working Conditions Directive provides clear legislative support for the improvement of working time schedules for workers, particularly under Article 11 which mandates measures to prevent the 'abusive' use of on-demand contracts. The humanisation principle can also be interpreted in light of the Platform Work Directive, which calls for 'fairness' in the use of algorithmic management and the prevention of psychosocial risks and undue pressure on labour platforms.[65] Temporal disciplining, as discussed, likely undermines these notions of fairness and protection from undue

[61] Advocate General Bot argued that the duty of care towards workers' welfare owed in federal German law by employers should be applied when adopting specific measures of organising working time in Case C-684/16 *Max-Planck-Gesellschaft zur Förderung der Wissenschaften eV v Tetsuji Shimizu* [2018] ECLI:EU:C:2018:338, Opinion of AG Bot, paras 40-41.

[62] C-313/02 *Nicole Wippel v Peek & Cloppenburg* [2004] ECLI:EU:C:2004:308, Opinion of AG Kokott, para 113.
[63] *Pereda* (n 44).

[64] Case C-344/19 *D J v Radiotelevizija Slovenija* [2021] ECLI:EU:C:2021:182, para 64.

[65] Article s1(1)(b) and 12(3).

pressure, and therefore an infringement of the humanisation principle aligns with the directive.[66]

Taken together, the use of temporal disciplining appears to constitute an infringement of the humanisation principle contained in Article 13. Such a finding would be uncontroversial, since it resonates with the CJEU's existing remarks on scheduling and the intention behind other EU legislative instruments.

Counterpoints

To the contrary, however, it could be argued that there has been no infringement of the humanisation principle. It could be argued that the use of temporal disciplining ensures that working time is distributed fairly and transparently, since the most sought-after shifts are awarded to the most deserving workers. This could be analogised with bonuses or other pay supplements which are given to the highest performing workers.

The CJEU has not held that piece-rate pay or pay supplements in reward for performance are a problem *per se*, only that they should not result in direct or indirect discrimination.[67] Hence, it could be argued that rewarding workers with shift preferences should be allowed, as is done for financial reward.

However, comparisons with monetary bonuses are fraught, since those who are rewarded for high performance through a bonus will still typically be guaranteed a

[66] The interaction between the humanisation principle, the Transparent and Predictable Working Conditions Directive and the Platform Work Directive will be developed in more detail in Chapters 6 and 7.

[67] See, for example, *Danfoss* (n 36); Case C-236/98 *Jämställdhetsombudsmannen v Örebro läns landsting* [2000] ECLI:EU:C:2000:173; Case C-381/99 *Susanna Brunnhofer v Bank der österreichischen Postsparkasse AG I - 4999* [2001] ECLI:EU:C:2001:358; Case C-400/93 *Specialarbejderforbundet i Danmark v Dansk Industri, formerly Industriens Arbejdsgivere, acting for Royal Copenhagen A/S I -1295* [1995] ECLI:EU:C:1995:155.

baseline of the minimum wage. When it comes to working time, however, there is arguably no safety net protection which governs baseline hours or predictability, making the stakes much more precarious. It therefore seems likely that Article 13 WTD was inserted precisely to provide this safety net: working time cannot be subject solely to employer's interests (ie, as a means of reward/disciplining) but adapted to the workers' needs.

In light of these rebuttals, it seems plausible that Foodora's practice of temporal disciplining would infringe the humanisation of work principle.

Legitimate Aim

Having established a possible infringement, the next question to ask is whether this infringement can be justified for pursing a legitimate aim.

Looking at the breakdown of the performance metrics used in the case study, it is clear that multiple aims are being pursued. By using the following criterion - weekend shifts after 8pm (30%), average weekly hours (25%), late log ins (5%), no shows (25%), orders hour deviation (10%), and experience working with the company (5%) – Foodora is encouraging work during anti-social hours, full-time work, punctuality, attendance, longevity, and speed. Heiland neatly summarises these aims as ensuring an 'efficient and simultaneously reliable… workforce'.[68]

Taking the aim put forward by Heiland – ensuring an efficient and reliable workforce – it must next be interrogated as to whether this can be considered as a

[68] Heiland (n 2) 1824.

'legitimate' aim. The reasons for why this might *not* qualify as a legitimate aim are discussed first, followed by the reasons in favour.

In light of the CJEU's existing case-law, it could firstly be argued that ensuring a reliable and efficient workforce would not be regarded as a legitimate aim because it is essentially an *economic* aim.

Drawing on *Tirols,* which was reiterated in the recent case of *Lufthansa,*[69] the CJEU held that a personnel management objective which amounts to a 'budgetary consideration' cannot be used to justify discrimination against part-time workers.[70] In *Tirols*, the Austrian government failed to justify the use of short-term contracts by arguing that it would be too onerous to retain permanent staff. Applied to this case study, it could be argued that ensuring a reliable pool of workers during anti-social hours is a personnel management aim, and that attempts to save on the costs of paying surplus workers is not a legitimate aim.

The idea that budgetary considerations would not be permitted as a legitimate aim for infringing the humanisation principle is further supported by the principles' origins in health and safety. Recital 4 WTD states that the objective of worker safety, hygiene and health should not be 'subordinated to purely economic considerations' and this was reiterated by the Advocate General Opinion in *BECTU* which stated that limitations imposed on the right to annual leave by national law 'could not in any circumstances be justified solely by reference to the costs which their absence would

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[69] C-660/20 *MK v Lufthansa CityLine GmbH* [2023] ECLI:EU:C:2023:789.

[70] Case C-486/08 *Zentralbetriebsrat der Landeskrankenhäuser Tirols v Land Tirol* [2010] ECLI:EU:C:2010:215, para 46.

cause an employer to incur.' [71] It seems likely that this logic would transfer across to Article 13, since it is a core health and safety principle which gives specific expression to the right to dignity at work in Article 31(1) Charter. This compares to the bonus pay discrimination cases which do allow for 'objective economic grounds' to be put forward by the employer.[72] It could therefore be posited that ensuring an efficient and reliable workforce is an economic consideration which an employer cannot rely upon as a legitimate reason for infringing health and safety measures.

To the contrary, however, it could be argued that ensuring a reliable and efficient workforce is a legitimate aim. Several CJEU cases can be drawn upon to support this, for example, in *Jenkins*[73] and *Bilka,*[74] the CJEU relied upon the aim of discouraging part-time work, and in *Wippel,* the Advocate General considered that the flexibility offered by on-demand contracts 'serves to promote employment' and regarded it as a legitimate aim.[75] Hence, these cases suggest a divergence from *Tirols* in that they do allow for some form of personal management criteria as a legitimate aim.

More broadly, it could be argued that ensuring a reliable and efficient workforce is not strictly a budgetary consideration. Given that food delivery platforms are organised predominantly around mealtimes, it seems legitimate for an employer to have

[71] Case C-173/99 *The Queen v Secretary of State for Trade and Industry, ex parte BECTU* [2001] ECLI:EU:C:2001:81 Opinion of AG Tizzano, para 56.

[72] For instance, in *Brunnhofer* (n 67) para 72, the CJEU held it was 'essential for the employer to be able to take employees' productivity into account' when calculating pay supplements.

[73] Case 96/80 *JP Jenkins v Kingsgate (Clothing Productions) Ltd* [1981] ECLI:EU:C:1981:80.

[74] Case 170/84 *Bilka-Kaufhaus GmbH v Karin Weber von Hartz* [1986] ECLI:EU:C:1986:204.

[75] AG Kokott in *Wippel* (n 62), para 94. The CJEU in this case (n 29) ultimately did not find discrimination, so did not consider the legitimate aim.

an interest in introducing means to encourage workers to work during these anti-social times. Reliably being able to meet customer orders and ensuring that food orders are efficiently delivered does not, on its face, imply a budgetary consideration. It is more likely the case that the means to achieve this (ie., by not offering bonus payments for anti-social hours), indicate the budgetary considerations. Analogy could be drawn with *Pereda* which, as discussed, stated that the scheduling of annual leave should take into account the 'overriding reasons relating to the interests of the undertaking'.[76] Whilst 'overriding reasons' is ambiguous and may only apply to specific leave examples (such as teachers taking leave during school holidays, or oil rig workers taking leave when offshore), it could be extended to general scheduling under Article 13 to argue that organising workers around high demand periods (like mealtimes) is an overriding reasons that is distinct from budgetary considerations.

Suitability

Assuming that the aim of ensuring an efficient and reliable workforce is legitimate, the next question to ask is whether temporal disciplining is a proportionate mechanism to achieve that end.

The rigour at which the CJEU reviews the proportionality requirements differs across cases. Some cases leave this determination predominantly to national courts,[77] while others take a much more in-depth examination of the alternative options

[76] *Pereda* (n 44).

[77] For an example, see *Bilka* (n 74) or Case C-83/14 *"CHEZ Razpredelenie Bulgaria" AD v Komisia za zashtita ot diskriminatsia* [2015] ECLI:EU:C:2015:480.

available.[78] Generally, the CJEU evaluates proportionality by examining whether the measure is firstly suitable to achieve the aim, and then whether it is necessary to achieve the aim.

Looking first at suitability, this section suggests that temporal disciplining is not a suitable mechanism for ensuring a reliable and efficient workforce. Several points can be raised in this regard. The first is that many of the metrics do not necessarily reflect an efficient and reliable worker. For example, as found in Heiland's study, if a worker takes holiday or sick leave, they may be punished by being relegated to a lower badge.[79] However, it can be argued that a worker is *more* likely to be reliable and efficient for having taken holiday or sick leave. Similarly, workers who are penalised for not working weekend shifts after 8pm may still be reliable and efficient during other shifts. Workers whose speed (measured through the metric 'orders hour deviation') reduces due to situations like traffic, complications with food orders, road diversions, dealing with clients etc., are penalised, even though they may well be reliable and efficient most of the time. Through temporal disciplining, however, this distinction is not possible, rendering it an ill-suited and unrefined mechanism for ensuring a reliable and efficient workforce.

Secondly, many of the shifts end up being automatically assigned anyway. Heiland found that 71 percent of Foodora riders were assigned shifts that did not suit them and 40 percent of workers claimed that this was the case very often or often.[80]

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[78] For example, *Lufthansa* (n 69) or Case C-142/05 *Åklagaren v Percy Mickelsson & Joakim Roos* [2009] ECLI:EU:C:2009:336.

[79] Heiland (n 2).

[80] Heiland (n 2) 1838.

Instead of temporal disciplining ensuring a reliable workforce, this research suggests that it wastefully assigns shifts rather than coordinating which shifts would work best for each worker. It implies that temporal disciplining is being maintained on principle, even though a system of distributing shifts through coordination with workers might be more suitable for achieving the purported aim.

Linked to the above, the final point to raise is the low retention rates: Heiland found that Foodora riders stayed an average length of only two-months on the platform.[81] Whilst there is limited additional data, this short retention rate implies that temporal disciplining does not lead to increased reliability and could potentially be seen as driving riders *away* from the platform instead.

To counter this, Foodora may be able to rely on statistics to demonstrate the improvements to efficiency and reliability of the workforce introduced by temporal disciplining.[82] Foodora could also draw comparison with cases on pay supplements, which use indiscriminate metrics to calculate rewards. For instance, in *Royal Copenhagen,* the piece-work scheme meant pay depended entirely or in a large part on individual output.[83] The CJEU did not seem concerned with the fact that there might be independent reasons – such as an injury or legitimate distraction – that would mean that the system did not always fairly reflect individual output. Foodora could rely on this to argue that, like with output pay, temporal disciplining does by and large reflect a reliable and efficient worker.

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[81] Heiland (n 2).

[82] Such data is not publicly available, otherwise it would have been discussed here.

[83] *Royal Copenhagen* (n 67).

However, even if temporal disciplining was considered as a suitable mechanism for ensuring a reliable and efficient workforce, it is argued that temporal disciplining could nevertheless fail on the second limb of the proportionality test: necessity.

Necessity

Necessity effectively examines whether there are less restrictive alternatives available, and whether the means used to achieve the aim goes beyond what is necessary. The section examines whether the use of temporal disciplining in the case study can be considered necessary for achieving the aim of an efficient and reliable workforce, or if less restrictive alternatives – such as the use of financial rewards schemes – are available.

As a starting position, it could be argued that the infringement of the humanisation principle caused by temporal disciplining is so severe that it cannot be considered necessary in any circumstance to achieve the aim of an efficient and reliable workforce. The physical, psychosocial and individual harm caused by using shifts as a reward system (as discussed in the early section) is too disproportionate when compared with the gains to the employer. Taking note of the imbalance of bargaining power, which is particularly stark for non-standard workers,[84] and the lack of consideration of workers' interests in the distribution of shifts, the infringement of the humanisation principle could arguably appear too excessive to be justified.

[84] This was highlighted by the CJEU in *BECTU* (n 48) para 63, which emphasised that workers who were particularly precarious were in need of most protection.

This argument is supported by the fact that the legitimate aim could be achieved through alternative, less restrictive means. Financial supplements are the traditional means of rewarding factors like working anti-social hours, overtime, performance and loyalty. This standard reward mechanism could have been used in Foodora's case to lessen the physical, psychosocial and individual harm caused by temporal disciplining.

The counter to this might be to argue that financial rewards would be a disproportionate cost for the company and that bonuses, on top of minimum wage, would render the platform financially untenable. Given that evening meal deliveries are centred around anti-social hours, the issuing of higher payments for anti-social hours might be unworkable if these hours are a norm rather than an exception. Foodora could thus argue that temporal disciplining is the only means necessary to ensure that there are reliable and efficient workers during the busiest shifts whilst still keeping the undertaking financially viable.

However, even if this argument were successful, it could still be argued that the extent to which temporal disciplining is used in the case study is excessive. For example, 'no shows' are included as a metric for the badge ranking system, yet three 'no shows' results in being removed from the platform regardless. It therefore seems unnecessary to also include this within temporal disciplining as there is already a deterrent. Similarly, the lack of transparency over the metrics used to rank the workers seems unnecessarily distressing. Presumably the benefits of not disclosing the performance metrics for the platform are that workers strive to work as hard as possible on all-fronts, since they do not know precisely what is being measured. This, however,

appears an excessive way to achieve efficiency at the expense of transparency for the workers who, as expressed in the studies, find the lack of information disconcerting.[85]

Lastly, it could be argued that temporal disciplining goes beyond what it necessary by curtailing other rights. It potentially discourages workers from taking rest breaks in order to avoid being penalised (for instance, 'average weekly hours' is one of the metrics, and thus taking breaks may reduce this weekly average). In *Shimizu* it was stated that 'any incentive…, any practice or omission of an employer that may potentially deter a worker from taking his annual leave is incompatible with purpose of right.'[86] It could therefore be argued that any practice which deliberately or inadvertently disincentives workers from taking breaks, as seen in the case study, is incompatible with the purpose of the right to limits on the duration of working time enshrined in the WTD. Heiland's study also alludes to the negative impact that temporal disciplining has on the collective voice of workers: by competing for shifts, this may hinder comradery and thus disincentivise workers from utilising their collective rights.[87] These knock-on implications highlight the overly restrictive regime, suggesting that Foodora's use of temporal disciplining is disproportionate.

In sum, it seems credible that temporal disciplining could be regarded as too heavy-handed a system to achieve the aim of an efficient and reliable workforce. This would render temporal disciplining as an unjustified infringement of the humanisation principle: the argument would be that the system of tying working time to performance

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[85] Ivanova and others (n 4).

[86] *Shimizu* (n 27) para 42.

[87] Heiland (n 2) 1841.

fails to adapt work to the worker and cannot be justified on the basis of a pursuing a legitimate aim in a suitable and necessary manner.

Conclusion

Without regulation, the use of temporal disciplining could have significantly harmful implications on workers. Whilst wage inequality has been a long-standing feature of the labour market, the practice of temporal disciplining risks embedding a further type of inequality at work – time poverty.[88] Employers are able to utilise workers' free times as a means of control,[89] creating significant scheduling inequality between the most and least efficient workers. As one rider stated, 'they don't just change your salary, your life suddenly changes'.[90]

This chapter has demonstrated that, despite the lack of litigation on Article 13 WTD, it has the potential to preclude the use of temporal disciplining. By using a case study to construct a hypothetical claim, it was shown that temporal disciplining could credibly contravene the humanisation principle contained in Article 13 WTD. Given that 'adapting work to the worker' requires scheduling to be cognisant of workers' physical, psychosocial and specific needs, the allocation of shifts based on performance risks undermining the core essence of this principle. It was argued that schedules distributed through temporal disciplining are unlikely to be considered as *humanised* but rather disproportionately adapted to the interests' of the employer. As a result,

[88] Wood (n 18) 5 refers to working time as a new source of inequality.

[89] Heiland (n 2) 1834.

[90] Heiland (n 2) 1837.

Article 13 WTD could be relied upon as a potentially powerful counterpoint to the 'potentially powerful despotic' use of temporal disciplining.[91]

Having examined the application of Article 13 to temporal disciplining in platform work, this thesis now moves to examining a different case study. The use of contested time and algorithmic pace-rates in warehouse work at the global company, Amazon, will be explored next. It will ultimately be shown that discussions of humanising work in the past are critical to addressing dehumanisation concerns of today.

[91] Alex Wood, 'Powerful Times: Flexible Discipline and Schedule Gifts at Work' (2018) 32 Work, Employment and Society 1061, 1063.

Chapter 6

Applying Article 13 to Algorithmic Pace-Rates and Contested Time in Warehouse Work

Introduction

'We are not robots' was the catchphrase of the recent global strikes by workers at Amazon, the multi-national logistics corporation.[1] 'Workers should not live as robots or machines' was the tagline of the humanisation of work movement in the 1970s.[2] This chapter highlights how concerns of the past are resurfacing through algorithmic management and argues that the legacy of the humanisation principle is critical to addressing them.

To do this, this chapter relies upon a case study of algorithmic time at Amazon and analyses its compatibility with Article 13 WTD. It begins by outlining how Amazon uses all four types of algorithmic time (identified in Chapter 1) to reconstruct working time norms. Drawing together existing literature, the chapter highlights how Amazon's emphasis on workers 'making rate', its recording of 'time-off-task' and its subversive distribution of 'voluntary time off' risk high injury rates and dehumanising practices.

[1] Alessandro Delfanti, 'Machinic Dispossession and Augmented Despotism: Digital Work in an Amazon Warehouse' (2021) 23 New Media & Society 39, 39.

[2] US Senator Ted Kennedy summarised the humanisation movement as 'an effort to make it possible for workers to live not just as robots or machines, but as men and women who are human beings' in US Senate, 'Worker Alienation: Hearings before the Subcommittee on Employment, Manpower, and Poverty of the Committee on Labor and Public Welfare' (92nd Congress, 25 July 1972) 79.

The chapter then considers whether two phenomena in particular – Amazon's use of algorithmic pace-rates and contested time – are compatible with the humanisation of work principle.

When analysing the lawfulness of algorithmic pace-rates, the chapter discusses the introduction of new legislation in the US to address Amazon's warehouses – legislation which uses almost exactly the same terminology as used in the 1970s. Reflecting on this 'rebirth' of the humanisation movement in the US, the section ultimately argues that, rather than introducing new laws in the EU, the issue could be addressed through recourse to the *existing* general principle of adapting work to the worker. To demonstrate this, the section first examines whether Amazon's use of algorithmic pace-rates could be regarded as compatible with Article 13 WTD. It then analyses the recent controversial and starkly contrasting decisions in France[3] and Germany[4] on Amazon's data processing practices, and highlights how the humanisation principle could be used in conjunction with the GDPR.

The subsequent section on contested time then highlights how the humanisation principle could assist the CJEU's interpretations of what counts as rest time and working time for the purposes of regulating Amazon's novel use of 'time-off-task'.

[3] Commission Nationale de l'Informatique et des Libertés (CNIL), Délibération de la formation restreinte n°SAN-2023-021 du 27 décembre 2023 concernant la société AMAZON FRANCE LOGISTIQUE < https://www.legifrance.gouv.fr/cnil/id/CNILTEXT000048989272> accessed 29 October 2025.

[4] VG Hannover, Urt. v. 09.02.2023, 10 A 6199/20, NZA-RR 2023, 264 <https://openjur.de/u/2463624.html> accessed 29 October 2025.

Given Amazon's global market dominance, understanding how it uses algorithmic software to organise working time and examining whether this is a lawful use of time, is critical to shaping the future of humane work.

Time in Amazon's Fulfilment Centres

The organisation of time has been central to Amazon's success. From same-day deliveries to the tracking workers' every second, 'Amazon is time and time is money'.[5] This section pinpoints exactly how Amazon uses working time to achieve this success, and at what costs.

The focus of this section is on working time within Amazon's 'fulfilment centres'. These are warehouses where goods arrive, are unpacked, sorted, parcelled and labelled, before being sent out for delivery to the customer.[6] There are typically four roles for workers at the fulfilment centres: stowers, pickers, sorters, and packers.[7] Despite significant media coverage of these warehouses,[8] however, there has been limited academic qualitative analysis of how they function. Most of the academic

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[5] As stated by an Amazon worker interviewed in Michael Waters, '"All I Know Is Mayhem": Life as an Amazon Shopper' (Modern Retail, 22 June 2021) <https://www.modernretail.co/retailers/all-i-know-is-mayhem-life-as-an-amazon-shopper/> accessed 14 April 2025.

[6] Steven Vallas and others, 'Prime Suspect: Mechanisms of Labor Control at Amazon's Warehouses' (2022) 49 Work & Occupations 421.

[7] Vallas and others (n 6); Teke Wiggin, 'Weaponizing the Workplace: How Algorithmic Management Shaped Amazon's Antiunion Campaign in Bessemer, Alabama' [2025] 11 Socius: Sociological Research for a Dynamic World; Delfanti (n 1) 42 refers to the roles as 'receive, stow, pick, and pack'; US Senate Committee on Health, Education, Labour, and Pensions, 'The "Injury-Productivity Trade Off": How Amazon's Obsession with Speed Creates Uniquely Dangerous Warehouses' (Majority Staff Report 2024) 13 refers to it 'stow, pick, pack'; VG Hanover (n 4) paras 9 -10 explains that there are 'different process paths' including picking and packaging, as does CNIL (n 3) para 19.

[8] See, for example, Jodi Kantor and others, 'Power and Peril: 5 Takeaways on Amazon's Employment Machine' *The New York Times* (15 June 2021) < https://www.nytimes.com/2021/06/15/us/politics/amazon-warehouse-workers.html> accessed 29 October 2025.

literature comes from the US,[9] with by far the main source of information being a major report by the US Senate Committee on Health, Education, Labour and Pensions (HELP).[10] To date, there appears to have been no study on Amazon's use of working time specifically, despite Amazon being one of the best-known users of algorithmic management.

What this section does, therefore, is draw together the limited existing qualitative research to create a thematic synthesis of time at Amazon's fulfilment centres. Rather than provide a summary of one single fulfilment centre, it creates an overview of the methods of organising time being deployed across various warehouses. The caveats to this, however, are that practices at Amazon's warehouses are not static[11] and can differ from country to fulfilment centre. Many of the examples relied upon are taken from the US Senate's HELP Committee report, which may likely reflect more extreme practices than found in fulfilment centres in the UK and EU due to the difference in labour regulations. That said, many of the EU studies examined did align with the HELP Committee report.

The examination ultimately shows that Amazon intensely controls when, for how long, and at what pace, the warehouse workers work. Time is conceived as something which is tightly controlled, to be 'traded', 'spent', 'made' or 'spared'. This is achieved through utilising all four mechanisms for algorithmic time identified in

[9] The main US sources include Vallas and others (n 6) and Wiggin (n 7). See Delfanti (1) for Italy and Marta Rozmysłowicz and Piotr Krzyżaniak, 'Automated Processing of Data on Work Performance and Employee Evaluation: A Case Study of Practices at Amazon Warehouses in Poland' (2023) 16 Italian Labour Law e-Journal 149 for Poland.

[10] See HELP Committee (n 7): this was an 18-month investigation, which involved nearly 500 workers, 1,400 workers' documents and 285 documents from Amazon.

[11] For example, during the HELP Committee's investigation it documented changes to Amazon's policy on time-off-task, see footnote 21.

Chapter 1: contested time, algorithmic pace-rates, temporal disciplining and dynamic scheduling. Each will now be examined in turn.

Contested Time

Starting with contested time, this refers to the time which is 'contested' between workers and employers over its classification as either rest time or working time (as outlined in Chapter 1). Amazon's extensive surveillance of its warehouse workers enables it to detect any 'time-off-task', the status of which is highly contested.

'Time-off-task', as Amazon calls it, is recorded through the use of hand-held 'scanners' (or 'guns'[12]).[13] From entering the warehouse to leaving, workers are required to constantly use scanners to scan barcodes.[14] These barcodes are located not only on products, but also on shelves, workstations, containers and the workers themselves.[15] On beginning their shift, workers use the scanner to scan their badges which logs them into the system.[16] From that point on, the scanner 'mediates between workers and management, assigning tasks, communicating orders, and monitoring work'.[17] For example, pickers will scan the items they receive and will then be directed as to where to put the items in the warehouse, scanning the location after this is

[12] Delfanti (n 1) 42 states that workers colloquially referred to them as guns.

[13] Time-off-task is described in the HELP Committee Report (n 7); Vallas and others (n 6); Wiggin (n 7); Kandor and others (n 8); Rozmysłowicz and Krzyżaniak n (9); VG Hanover (n 4).

[14] Rozmysłowicz and Krzyżaniak (n 9) 152. The process is also outlined in VG Hanover (n 4) and CNIL (n 3).

[15] Rozmysłowicz and Krzyżaniak (n 9).

[16] Delfanti (n 1).

[17] Delfanti (n 1) 42.

completed.[18] This constant use of the scanners provides management with real-time data on the productivity, location, and pace of the workers.[19]

The data also allows managers to detect time-off-task, which refers to any period of inactivity.[20] Amazon has been known to allot workers five to ten minutes during each shift in which inactivity is not flagged: after this, all inactivity is recorded as time-off-task.[21] This time-off-task is tracked 'down to the second'[22] and can include everything from taking a bathroom break to talking with colleagues.[23] As one worker highlighted, time-off-task can often be explained by time spent speaking to managers, mending conveyor belt issues or fixing pallets,[24] making its depiction as time which is exclusively idle or unproductive misleading.

Nevertheless, workers are heavily penalised for time-off-task. Thirty minutes of time-off-task during a 10-hour shift can result in a written warning,[25] and an hour or more can result in summary dismissal.[26] Examples include being given warnings for using the bathroom[27] or even being 'fired for going to the bathroom', as one worker

[18] Delfanti (n 1) 47.

[19] Wiggin (n 7); Rozmysłowicz and Krzyżaniak (n 9).

[20] HELP Committee (n 7) 24-25.

[21] Vallas and others (n 6). In Rozmysłowicz and Krzyżaniak's (n 9) account in Poland, its three minutes. The HELP Committee (n 7) 30 states that policy seems to have changed; whilst it used to be counted after five minutes of unplanned time elapses, time-off-task is now classified as 1 hour of cumulative 'unknown idle time'. The CNIL (n 3) found that 'idle time' was 10 minutes but during the proceeding Amazon said it would increase it to 30 minutes.

[22] HELP Committee (n 7) 38.

[23] HELP Committee (n 7); Vallas and others (n 6); Wiggin (n 7).

[24] HELP Committee (n 7) 39.

[25] HELP Committee (n 7) 39.

[26] Vallas and others (n 6).

[27] HELP Committee (n 7) 39.

described.[28] It has been argued that the net result of time-off-task is that it 'heightens workers' sense that they are digitally tethered to their jobs and must constantly keep working'.[29]

Algorithmic Pace-Rates

In addition to contested time, Amazon relies on algorithmic pace-rates to ensure workers perform at a sufficiently high speed. It is not enough that workers are 'on-task': even whilst on-task, there is pace for completing this task.

Amazon sets 'productivity quotas'[30], 'rates'[31] or 'units per hour'[32] which determine the pace of each task. These pace-rates are communicated to the worker in various ways, through their scanners, verbally by managers, are posted publicly or at their individual workstation.[33] Amazon also sets 'takt rates', which are the seconds allowed between scans.[34]

The pressure to meet these rates can be 'unforgiving' and is well-documented[35] (although a regional German court, discussed below, did not find evidence of this at

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[28] Wiggin (n 7) 11.

[29] Vallas and others (n 6) 435.

[30] Wiggin (n 7); Rozmysłowicz and Krzyżaniak (n 9); Delfanti (n 1) uses 'productivity rate'.

[31] Delfanti (n 1); Vallas and others (n 6).

[32] Vallas and others (n 6).

[33] HELP Committee (n 7).

[34] HELP Committee (n 7).

[35] Wiggin (n 7) 7.

the fulfilment centre it examined).[36] Some of the rates are set at packaging 600 items per hour, meaning that the worker must repeat the same set of tasks every six seconds for the entire 10-hour shift, equating to 5,400 units per day.[37] Each second is carefully tracked; Figure 1 below shows the 'takt time' allowed between scans in one warehouse, and Figure 2 shows the breakdown of a workers' performance metrics.[38] Workers have referred to the intensity of trying to 'make rate' (ie., reach the expected pace-rate) each hour,[39] stating that 'only a robot can meet that rate every hour'[40] and that 'you're almost running for the entire ten hours'.[41] Delfanti referred to this fixation on the speed as the 'Amazon pace' where the 'rhythm is dictated by the scanner'.[42]

AF[illegible]TING TAKT TIME BREAKDOWN

TASK	TIME (APPROXIMATE)
Grab & [illegible] box	10 SEC
Identif[illegible] move	4 SEC
Grab [illegible] and place items in the box	14 SEC
Pull dunnage in to the box	3 SEC
Scan sp00 and close box	4 SEC
Place box on line	2 SEC

[illegible] MORE THAN 37 SECONDS

Figure 1: Photo of a card at a fulfilment centre in the US showing takt times. Source: HELP Committee (n 7) 29.

[36] VG Hanover (n 4): the decision is currently being appealed.

[37] HELP Committee (n 7), with 1 hour break.

[38] Taken from HELP Committee (n 7) 29.

[39] Vallas and others (n 6) 423; HELP (n 7) 45.

[40] Wiggin (n 7) 35

[41] Marina Jabsky and Charlene Obernauer, 'Time Off Task' (New York Committee for Occupational Health and Safety 2019) 8.

[42] Delfanti (n 1) 47.

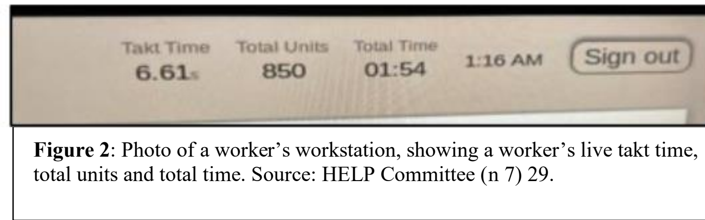

Figure 2: Photo of a worker's workstation, showing a worker's live takt time, total units and total time. Source: HELP Committee (n 7) 29.

Not only are the algorithmic pace-rates generally high, there is also an apparent lack of transparency over how they are set, with the expected rate regularly changing.[43] The pace-rates can also be augmented through other methods; in some warehouses, Amazon launches 'power-hour' where workers are pushed to work at maximum effort in return for a 'snack of their choice' or other similar prizes.[44]

The consequences for failing to 'make rate' can be significant. Managers receive real-time data from the scanners on the workers' pace.[45] In many cases, these rates are publicly displayed and workers are openly ranked based on their 'units per hour'.[46] If a workers' pace is regarded as low, managers can conduct audits of the worker requiring them to improve.[47] These audits are typically undertaken each shift: much like the warehouse workers, low-level managers may also face quotas for ensuring higher pace-rates.[48] As one manager stated, it was a 'non-negotiable' to pressure the lowest performing workers each shift – even if they know the worker is

[43] Delfanti (n 1); Rozmysłowicz and Krzyżaniak (n 9); Vallas and others (n 6).

[44] Delfanti (n 1); HELP Committee (n 7) 33.

[45] Vallas and others (n 6).

[46] Vallas and others (n 6).

[47] Wiggin (n 1); HELP Committee (n 7).

[48] HELP Committee (n 7) 36-37.

working as fast as they can.[49] This is mirrored by one workers' statement that 'you can tell they [the managers] have to give feedback, you see them all lurking with their little computers' ready to discipline someone.[50] The outcomes of failing to make rate include being approached by management for feedback sessions, receiving warnings, automatic write-ups or eventual termination.[51] What is particularly notable about Amazon's use of algorithmic pace-rates is that the data being collected is used to monitor the workers' existing speed. It has been argued that the reliance on human managers to then discipline workers creates 'the constant threat of discipline and termination on workers who fail to make rate'.[52] In this sense, 'technology codifies, understands and manages, but the real machine is the human', as one Amazon manager remarked.[53]

Temporal Disciplining

Alongside contested time and algorithmic pace-rates, Amazon also deploys temporal disciplining in some of its fulfilment centres. As discussed in Chapter 1, this is where working time schedules are used as reward or discipline-based system: workers with the highest productivity, for instance, are rewarded with the most sought-after shifts.

Amazon workers are given a bank of 'unpaid personal time' or 'voluntary time off', abbreviated by Amazon to 'VTO' and 'UPT', respectively.[54] Workers can decide

[49] HELP Committee (n 7) 36. Delfanti (n 1) 51 similarly remarks on the pressure faced by low-level managers to speed workers up even though, as the managers note, the workers already 'are so fast!'.

[50] Delfanti (n 1) 51.

[51] Vallas and others (n 6); Delfanti (n 1); HELP Committee (n 7); Wiggin (n 7).

[52] Vallas and others (n 6) 443.

[53] Delfanti (n 1) 40.

[54] Different terms are used across warehouses: Wiggin (n 7) refers to both UPT and VTO interchangeably; Vallas and others (n 6) refer to VTO; the HELP Committee (n 7) refers to 'unpaid time off' and UPT.

to ‘spend’ their UPT without discipline, for instance, if they are late for a shift or cannot work that shift.[55] During shifts, management may also announce calls for VTO which enable workers to finish the shift early, although they will not be paid.[56] Workers with the highest pace-rate that shift may be chosen, or in other instances, VTO/UPT may be given as a prize for winning a productivity contest.[57] As one worker explained, when management announce VTO during a shift, workers ‘lose themselves … it’s just so miserable, people are just like ‘I want to go!’[58]

The terminology used around VTO and UPT equates time to a form of currency.[59] Figure 3 shows alerts from the ‘Amazon A to Z’ app, which Amazon workers use to book their shifts. It warns workers that their ‘UPT balance is running low’ or that a ‘VTO opportunity’ has just come up.[60] Combined with the pervasive term of ‘making rate’ each hour, the terminology used at the fulfilment centres constructs time as something to be *earned* and *budgeted.* By invoking the language of financial precarity, it suggests that workers with a low UPT ‘balance’ are at risk and, although they can ‘spend’ the VTO as they wish, it mimics the idea financial responsibility and self-reliance.

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[55] Vallas and others (n 6) 444, using the word ‘spent’.

[56] Vallas and others (n 6).

[57] HELP Committee (n 7) 33.

[58] Vallas and others (n 6) 443.

[59] Vallas and others (n 6) 444.

[60] Taken from Wiggin (n 7) 13.

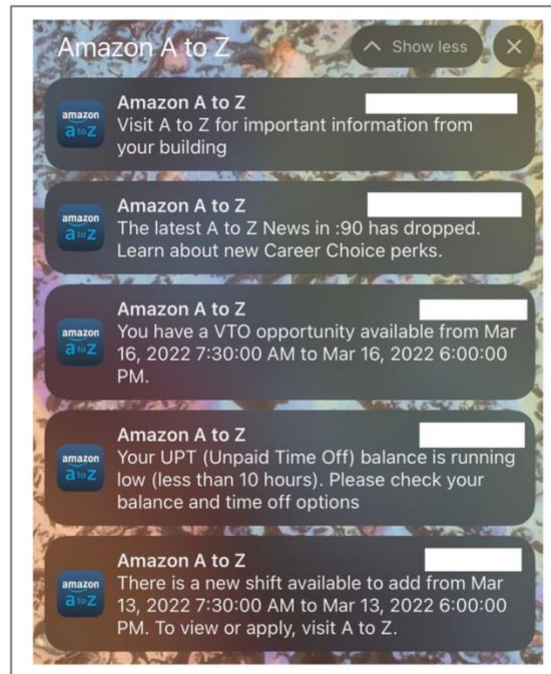

Figure 3: Screenshot of Amazon A to Z App, taken from an interviewee in the study conducted by Wiggin (n 7) 13.

This is ultimately a powerfully persuasive inversion of working time. The reliance on concepts of financial precarity is particularly insidious because it evokes the precarity that many Amazon workers (as those often at the bottom of the labour market[61]) face as a daily lived reality. The idea that workers *chose* to go home early unpaid obscures the structural reason that there was not enough paid work that day and reverses the narrative of power. Amazon needs to adjust its staffing levels in accordance with the number of parcels ordered: instead of dismissing workers early without pay, it has been argued that this presents VTO as a 'source of freedom' from the 'unrelenting physical demands' and 'alienating character of its warehouse jobs'.[62] Whilst traditional working time norms would require employers to pay workers for

[61] Vallas and others (n 6) 440 state that 'much of [Amazon's] workforce has encountered high levels of hardship in a turbulent labor market'. Similar remarks are reflected the New York State Warehouse Worker Protection Act (2021-A10020A 29 April 2022) Section 2 (e) <https://www.nysenate.gov/legislation/bills/2021/A10020> accessed 29 October 2025.

[62] Vallas and others (n 6) 444, 431, 442.

their time, regardless of whether there is paid work to complete, this reconstructs time as something workers must manage and trade themselves.

Dynamic Scheduling

Lastly, there are indications that Amazon deploys the fourth mechanism of algorithmic time: dynamic scheduling, described in Chapter 1. This is where shifts are not distributed according to a regular pattern, but rather in response to fluctuating supply and demand, organised through algorithmic systems.

As mentioned earlier, 'Amazon A to Z' is an app which set outs workers' shifts. There is very limited verified information on how this app works. Implicit in much of the existing literature, however, is that Amazon's workers tend to be either full-time, permanent workers completing 10 – 12 hour shifts at a time or temporary and/or agency workers.[63] What is unclear is how workers choose, or are selected for, each shift through the Amazon A to Z platform. The fact that Amazon uses a shift-based system which is organised through an online app indicates that it relies on dynamic scheduling, but without more qualitative research, this is difficult to confirm. This is therefore an area in need of further research, but one that does imply a reliance on dynamic schedules as yet another means of algorithmically managing working time.

In summary, this synopsis of time at Amazon's fulfilment centres indicates that the company reconstructs traditional understandings of working time through the four mechanisms of algorithmic time outlined in Chapter 1: contested time, algorithmic pace-rates, temporal disciplining and dynamic scheduling. Unpaid working time can

[63] Vallas and others (n 6); Delfanti (n 1); HELP Committee (n 7) refers frequently to workers as 'employees'.

be reconceived as 'voluntary personal time', time spent using the bathroom may be reframed as 'time-off-task', and spending time 'on-task' is not enough – a worker must also 'make rate' by reaching the set pace.

There is substantial evidence that these reconfigurations of time have led to significant consequences for workers. Amazon's fulfilment centres have twice the average injury rates of private industry in the US,[64] with extreme levels of musculoskeletal disorders, chronic pain, 'debilitating injuries' and spinal surgeries.[65] The federal US Occupational Safety and Health Administration has launched multiple investigations into Amazon warehouses and issued extensive citations and hazard letters against specific warehouses for violations of the Occupational Safety and Health Act of 1970 and record keeping failures.[66] The citations refer to the 'immense pressure to meet pace of work' faced by workers,[67] and the Assistant Secretary of the Occupational Safety and Health Administration has stated publicly that Amazon's processes were 'designed for speed but not safety, and they result[ed] in serious worker injuries'.[68] Multiple State-level Occupational Health and Safety Administration investigations into Amazon warehouses have found similar serious injuries and issued

[64] New York State Warehouse Worker Protection Act (n 61) Section 2(e).

[65] HELP Committee (n 7) 54.

[66] This includes at least 18 investigations and six citations, with violations at eight fulfilment centres in Florida, New York, New Jersey, Colorado, Idaho, and Illinois: see US Department of Labour, 'OSHA News Release – New York City Region' (3 August 2023) <https://www.osha.gov/news/newsreleases/region2/08032023> accessed 5 November 2025. On a review of the citations and hazard letters, most frequently state that the ergonomic hazards at the warehouses were causing or likely to cause musculoskeletal disorders, particularly lower back injuries which are often acute. For a typical example of the citations, see US-OSHA, 'Citation and Notification of Penalty – Amazon Fulfilment Centre Nampa 01/31/2023' <https://www.dol.gov/sites/dolgov/files/OPA/newsreleases/2023/02/OSHA20230163b.pdf> accessed 29 October 2025.

[67] US Department of Labour, 'Letters of Inspection Findings at Amazon fulfilment centres in Idaho, New York, and Colorado' (31 January 2023) 1 <https://www.dol.gov/sites/dolgov/files/OPA/newsreleases/2023/02/OSHA20230163a.pdf> accessed 29 October 2025.

[68] US Department of Labour, 'News Release – Federal safety inspections at three Amazon warehouse facilitates find company exposed workers to ergonomic, struck-by hazards' (18 January 2023) <https://www.dol.gov/newsroom/releases/osha/osha20230118> accessed 5 November 2025.

similar citations.[69] The recent HELP Committee report also contains multiple examples of workers left with 'life-altering' injuries as a result of repeating the same tasks at unrelenting pace-rates.[70]

In addition to physical injuries, Amazon's use of algorithmic time was labelled as 'inhumane' by New York State legislators.[71] Workers complain of being 'treated as disposable resources or machines'[72] to be 'battered and bruised' in order for customers to get their 'book within six hours'.[73] The surveillance of workers' movements and the tracking of their exact speed amounts to, as US Senator Smith put it, 'controlling the lives of workers minute by minute'.[74] This obsession with time has been argued to place speed above the 'dignity, safety, and well-being of its workers',[75] ultimately resulting in the 'dehumanisation of workers'.[76]

In light of this, the chapter turns to examining the lawfulness of Amazon's use of algorithmic time. Specifically, the chapter examines the compatibility of Amazon's

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[69] Minnesota Department of Labor and Industry, 'Minnesota OSHA Issues Citations to Amazon Warehouse for Worker Safety and Ergonomic Violations' (24 October 2023) <https://www.dli.mn.gov/news/minnesota-osha-issues-citations-amazon-warehouse-distribution-worker-safety-and-ergonomic\> accessed 6 November 2025; Washington State Department of Labor and Industries, 'Amazon Cited for Ergonomic Hazards at Kent Warehouse' (News Release 23-19, 2023) <https://www.lni.wa.gov/news-events/article/23-19\> accessed 6 November 2025; United States Attorney's Office, Southern District of New York, 'Amazon Cited by OSHA Based on SDNY Referrals for Serious Violations that Exposed Workers to Safety Hazards' (5 February 2023) <https://www.justice.gov/usao-sdny/pr/amazon-cited-osha-based-sdny-referrals-serious-violations-exposed-workers-safety\> accessed 6 November 2025; Will Oremus, 'Amazon Fined by California for Labor Law Violations' The Washington Post (18 June 2024) <https://www.washingtonpost.com/technology/2024/06/18/amazon-fine-labor-law-california/\> accessed 6 November 2025. For other State-level examples, see Rozmysłowicz (n 76).

[70] HELP Committee (n 7) 55, see also sections VI and VIII of the report.

[71] New York State Warehouse Worker Protection Act (2021-S8922A 27 May 2022) <https://www.nysenate.gov/legislation/bills/2021/S8922> accessed 5 November 2025.

[72] Vallas and others (n 6) 445.

[73] Quote taken from an Amazon worker in HELP Committee (n 7) 4.

[74] 'Bipartisan Momentum Builds for Warehouse Worker Protection Act' (*Press Release US Senator Ed Markey*, 25 September 2024) <https://www.markey.senate.gov/news/press-releases/bipartisan-momentum-builds-for-warehouse-worker-protection-act> accessed 25 April 2025.

[75] HELP Committee (n 7) 139.

[76] Wiggin (n 7) 5.

algorithmic pace-rates and contested time with the humanisation principle, found in Article 13 WTD. The chapter does not analyse temporal disciplining or dynamic scheduling, as these phenomena are addressed in Chapters 5 and 7 respectively.

What will be shown is that the long-standing humanisation principle offers significant potential in regulating Amazon's use of time, by requiring the balancing of *human* needs with the company's business needs.

Applying Article 13 to Algorithmic Pace-Rates

In response to the high rates of injury and reports of degrading treatment at Amazon's warehouses, several US States have introduced new laws to regulate the use of algorithmic pace-rates.[77] Building on these State initiatives, a federal bill has also been proposed to address the same concerns.[78]

What is striking about these new laws, known to as the Warehouse Workers Protection Acts, is their semblance with the humanisation movement of the 1970s. In some instances, US Senators are using identical language to that deployed by Senators fifty years earlier. The overarching purpose of this section is therefore to demonstrate

[77] See the New York Warehouse Worker Protection Act (n 61); California Warehouse Quotas Law (AB 701 22 September 2021) <https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB70>; Washington State Warehouse Quotas Law (RCW 49.84.020 24 February 2024) <https://app.leg.wa.gov/RCW/default.aspx?cite=49.84.020>; Minnesota Warehouse Worker Protection Act (SF3035 28 April 2023) <https://www.revisor.mn.gov/bills/93/2023/0/SF/3035/versions/4/pdf/>; Oregon Warehouse Worker Protection Act (HB 4127 1 January 2025) < all accessed 29 October 2025. For an summary of the legislation, see Marta Rozmysłowicz, 'We're Not Robots": Legal Limits on Work Intensity at the AI-Powered Warehouse' (2025) 14 E-Journal of International and Comparative Labour Studies ADAPT 1.

[78] Proposed federal Warehouse Worker Protection Bill (S.5208 118th Congress 25 September 2024) <https://www.congress.gov/bill/118th-congress/senate-bill/5208/text> accessed 5 November 2025.

that, unlike in the US where *new* legislation is being introduced, the *pre-existing* humanisation of work principle could offer untapped potential within the EU.

To achieve this, the section is made of three parts. The first part outlines the ‘rebirth’ of the humanisation movement in the US. Turning to the EU, the second part then examines how the humanisation principle in Article 13 WTD could be used as standalone provision to regulate algorithmic pace-rates. The final part then examines how the humanisation principle could be used in conjunction with the GDPR, illustrated through discussion of existing national decisions on the issue.

Regulating Algorithmic Pace-Rates in the US

The US Warehouse Worker Protection Acts target Amazon’s use of algorithmic pace-rates to set the speed of each task. The Acts tend to focus on main three aspects: *informing* workers of any rates imposed and consequences attached, ensuring *compliance* with existing health and safety norms, and introducing *ergonomic* standards to reduce injury.[79]

From the rhetoric surrounding the bills to the substantive provisions, it is difficult to dismiss the apparent rebirth of the humanisation of work movement.

The New York Warehouse Workers Protection Act states that it addresses ‘inhumane work quotas’ and promotes ‘effective ergonomic interventions’. It goes on to call for ‘meaningful involvement by workers’, ensuring ‘basic human needs’, and a reduction to the ‘rapid pace’ and ‘repetitive forceful exertions’ through ergonomic

[79] See footnote 76.

analysis and programmes.[80] This is quintessential of the 1970s humanisation movement, outlined in Chapter 3, which called for 'genuine' and 'meaningful' participation' of workers,[81] adaptation to 'human needs'[82] and an end to the 'dehumani[sing]',[83] 'inhuman',[84] 'repetitive'[85] and 'rapid[ly] pace[d]'[86] machine-driven work.

Critical to the humanisation movement of the 1970s was the role of ergonomics, which is also central to the new US legislation. The federal Warehouse Workers Protection Bill proposes the introduction of an ergonomic programme consisting of 'measures such equipment and workstation redesign, work pace reductions, or job rotation'.[87] This builds from the recommendations made by the federal Occupational Safety and Health Administration which call for 'workplace analysis', 'job rotations', 'reduction of repetitions' and the design of jobs 'to maintain pace of work within acceptable limits'.[88] The New York Committee on Occupational Safety and Health has also called for an ergonomic programme at Amazon which evaluates 'low job satisfaction', 'repetitiveness' and 'low mental demand' and recommends 'job analysis',

[80] New York State Warehouse Workers Protection Act (n 61).

[81] Commission, 'Reform of the Organisation of Work (Humanisation of Work) (Communication) COM (76) 253, 8 and 2.

[82] Joint ILO/WHO Committee on Occupational Health, 'Second Report' (No. 66, 1953) 12. See Chapter 3 for more examples.

[83] US Senate, 'Congressional Record' (Monday 14 August 1972) 28000, quotation from Senator Stevenson who stated that 'too often work has been deliberately dehumanized to make the man as easily replaced as the machine he is making'.

[84] US Senate (n 2) 130.

[85] ILO, 'International Programme for the Improvement of Working Conditions and Environment (PIACT)' (Governing Body, GB.200/PPA/10/S, 1976) 12.

[86] ILO Director-General, 'Making Work More Human: Working Conditions and Environment' (ILO 1975) 47.

[87] Federal Warehouse Worker Protection Bill (n 77).

[88] US Department of Labour (n 67).

'employee involvement' and familiarity with the 'physical capabilities' of workers.[89] These strategies are virtually identical to 'job rotation',[90] 'job redesign',[91] 'job satisfaction',[92] and adjustments to the 'work rate' or 'pace'[93] proposed by the Commission, Council, ILO and US Senate during the 1970s humanisation of work movement.

Even the rhetoric used to promote the Warehouse Workers Protection Acts echoes the 1970s movement. Senators Markey and Hawley have claimed that the federal Bill will stop corporations 'treating workers like cogs in a machine'[94] or as 'disposable resources',[95] mirroring the words of Senators Kennedy and Stevenson in the 1970s which claimed that the Workers Alienation Bill would overcome the 'disregard for workers as human beings'[96] and their treatment as being 'as easily replaced as the machine [they are] making'.[97] The reference to workers as 'cogs' is remarkably reminiscent of one of the most influential publications of the 1970s

[89] Jabsky and Obernauer (n 41) Appendix 1: 18 – 21. Note that the New York Committee on Occupational Health and Safety is a community organisation not a government body.

[90] Commission (n 81) 9; ILO, 'Information note on the activities of the International Labour Organisation concerning the humanisation of conditions of work' (ILO No. 32 Geneva, 1975) 2; US Senate (n 2) 4.

[91] Commission (n 81) 12; ILO (n 90) 2; US Senate (n 2) 5.

[92] Council Resolution of 21 January 1974 concerning social action programme [1974] OJ C13/1.

[93] ILO Hygiene (Commerce and Offices) Recommendation No.120 (1964) para 60. European Economic and Social Committee, 'Opinion on Proposal for a Council Directive on the Introduction of Measures to Encourage Improvements in the Safety and Health of Workers at the Workplace' [1988] OJ C 175/09.

[94] See Press Release (n 73), quoting Senator Hawley.

[95] Lauren Rosenblatt, 'New Federal Bill Aims to Slow Pace of Work at Amazon, Other Warehouses' *The Seattle Times* (2 May 2024) <https://www.seattletimes.com/business/amazon/new-federal-bill-aims-to-slow-pace-of-work-at-amazon-other-warehouses/> accessed 25 April 2025, quoting Senator Markey.

[96] US Senate (n 83) 27998.

[97] US Senate (n 83) 28000. The full title of the proposed bill was S3916 Worker Alienation Research and Technical Assistance Act of 1972.

movement which referred to workers as feeling like ‘merely a replaceable cog in the industrial system’.[98]

There are nonetheless notable differences between the original humanisation movement and today’s rebirth. Whilst the humanisation movement of the 1970s was driven by a concern over monotonous and soulless factory work, much of the modern movement has been driven by concern over ‘corporate greed’[99] and a culture of companies ‘prioritis[ing] profit over their workers’ safety and well-being’.[100] This has resulted in a particular emphasis on addressing transparency in how pace-rates are set and preventing *exploitation* rather than monotony. The essence of the movement however – that workers should not be treated as robots or machines – remains the same.

The reason for outlining the US’s response to Amazon’s algorithmic pace-rates is that it is highly relevant to how the EU will respond. There have been calls for the EU to follow suit and proactively address Amazon’s warehouse practices.[101] The EU could either initiate new legislative proposals for humanising work, or reinvigorate the existing humanisation principle. This section argues in favour of the latter.

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[98] Pehr Gyllenhammar, ‘How Volvo adapts work to people’ (1977) 55(2) Harvard Business Review 102, 102.

[99] As stated by Senator Markey in Press Release (n 73), and Senator Sanders, see ‘Sanders Releases Sweeping Report Exposing How Amazon’s Obsession with Speed Injures Workers at Unprecedented Rates’ (Press Release, US Senate HELP Committee 16 December 2024) <https://www.help.senate.gov/dem/newsroom/press/news-sanders-releases-sweeping-report-exposing-how-amazons-obsession-with-speed-injures-workers-at-unprecedented-rates> accessed 25 April 2025.

[100] As stated by Senator Hawley, see Press Release (n 73). The Assistant Secretary for US-OSHA similarly stated that while Amazon ensures ‘customers’ orders are shipped efficiently’ it lacked the same ‘commitment to protecting the safety and well-being of its workers’, see US Department of Labour (n 68).

[101] UNI Global Union, ‘Over 20 union leaders demand Europe crackdown on amazon’s invasive worker surveillance’ (7 May 2024) <https://uniglobalunion.org/news/amazon-surveillance-letter/> accessed 6 November 2025.

As it stands, any analysis of the compatibility of Amazon's algorithmic pace-rates with EU law would likely examine the Framework Directive on Safety and Health,[102] the Framework Directive for Equal Treatment in Employment,[103] and the GDPR.[104]

Given the high rates of injuries reported in the US, it seems logical to conclude that the use of algorithmic pace-rates in a similar manner within the EU would risk infringing Article 5 Framework Directive on Safety and Health, which imposes a duty on employers to ensure the safety and health of workers in every aspect related to work. The repetition of the same movement for 'hundreds or thousands' of times per shift, often resulting in awkward bending, lifting, reaching and kneeling, has led to high rates of lower back injuries, sprains, ruptured discs, and carpal tunnel syndrome in the US.[105] It has been argued that the pressure to 'make rate' means that workers are 'forced to bypass their [Amazon's] 'safety' to get it done, or else you're fired'.[106] It therefore seems likely that such practices would contravene the duty ensure the safety and health of its workers at work.

[102] Council Directive (89/391/EEC) of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work [1989] OJ L183/1.

[103] Council Directive 2000/78/EC of 27 November 2000 establishing a general framework for equal treatment in employment and occupation [2000] OJ L303/16.

[104] Regulation (EU) 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data [2016] OJ L119/1.

[105] HELP Committee (n 7) 43. See also the US-OSHA citations in footnote 66.

[106] Quote from worker in HELP Committee (n 7) 57.

Similarly, Amazon risks breaching its reasonable accommodation duties for disabled workers under Article 5 Framework Directive for Equal Treatment in Employment. In the US, the HELP Committee found that Amazon's system for responding to reasonable accommodation requests by disabled workers was 'shockingly deficient': the process for submitting medically approved accommodation requests was automated and complicated, and once done, workers were either pointed to an alternative role or placed on temporary light duties, typically cleaning.[107] There appeared to be no adaptation of the workers' original role and most workers were eventually pressurised to take unpaid medical leave.[108] A stark example of this was a Deaf worker who, despite 'begging for an accommodation', was dismissed for failing to make rate because of the extra time it took to use his hands to communicate through sign language.[109] The flat algorithmic pace-rate imposed on all workers, regardless of ability, means that even workers who have 'an injury, disability or other need for accommodations are disciplined for not making rate'.[110] It therefore seems highly plausible that such practices in the EU would violate Article 5 Framework Directive for Equal Treatment in Employment.

A further avenue would be to examine whether Amazon's continuous collection of employee data breaches the GDPR. This avenue of litigation will be considered in more depth below, examining the possible impact the humanisation principle could have if read in conjunction with data protection rights.

[107] HELP Committee (n 7) 126, see Section IX.

[108] HELP Committee (n 7) Section IX.

[109] HELP Committee (n 7) 135.

[110] HELP Committee (n 7) 40.

Arguably the most compelling avenue for addressing algorithmic pace-rates, however, would be to rely upon the humanisation of work principle. Article 13 WTD addresses precisely this type of work – 'work at a predetermined work-rate' – by requiring it to comply with the general principle of adapting work to the worker.[111] As explained in Chapter 3, the humanisation principle arose in reaction to machine-driven work and the alienation of workers. The principle of 'adapting work to the worker' was the legislative expression of the 1970s movement to *humanise* work. It was introduced to ensure that workers were not treated as machines but recognised as living components within the production process. It is therefore critical to the EU's response to Amazon's warehouses, as it is able to capture the dehumanising implications of algorithmic pace-rates. The subsequent section thus examines the potential of the humanisation principle as a standalone provision to regulating Amazon's algorithmic pace-rates. This is then followed by an examination of how the humanisation principle may assist in litigation on the compatibility of Amazon's algorithmic pace-rates with the GDPR.

Interpreting the Compatibility of Algorithmic Pace-Rates with Article 13 WTD

This section adopts a similar approach to Chapter 5, which examined whether Article 13 WTD could be regarded as precluding an employers' practice by building on the CJEU's typical approach to analysing principles. Whilst this is an abstract examination,

[111] Two publications have remarked on the potential of the humanisation principle in Article 6(2)(d) Framework Directive on Safety and Health to address Amazon's algorithmic pace-rates. Aude Cefaliello and Miriam Kullmann have remarked that the reference to 'predetermined work-rate' in Article can be understood as 'AI-determined work-rate' in the current workplace setting in 'Offering False Security: How the Draft Artificial Intelligence Act Undermines Fundamental Workers Rights' (2022) 13 European Labour Law Journal 542. Rozmysłowicz (n 76) has also stated that the 'individualisation' principle in Article 6(2)(d) could mean that Amazon's productivity quotas are required to be adapted to individual workers.

the CJEU may well be required to give guidance on Article 13 WTD where a national court refers a question of the compatibility of algorithmic pace-rates with the humanisation principle. This may be to ensure the 'uniform application' of EU law,[112] to enable national transpositions to be read in conformity with EU law 'as far as possible',[113] or to disapply national law where the humanisation principle is relied upon as a general principle or specific expression of Article 31(1) Charter, for example.

The question therefore examined is whether the use of algorithmic pace-rates in the case study outlined above is compatible with the requirement in Article 13 WTD to take account of the humanisation principle when setting predetermined work-rates. To answer this question, the section adopts the CJEU's standard approach to principles,[114] examining first if there is an infringement of the humanisation principle (based on each strand of the principle) and then determining if the infringement can be justified for pursuing a legitimate aim in a proportionate manner.

Infringement

As outlined in Chapter 3, the humanisation principle requires that work be adapted to human needs (divided into physical, psychosocial and specific) through worker input. The essence is that patterns of work must be *humanised;* workers cannot be treated as machines.

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[112] Case 283/81 *CILFIT v Ministry of Health* [1982] ECLI:EU:C:1982:335, para 7.

[113] Case C-106/89 *Marleasing SA v La Comercial Internacional de Alimentacion SA* [1990] ECLI:EU:C:1990:395, para 8.

[114] For evidence of this approach, see footnote 208 in Chapter 3.

In determining whether algorithmic pace-rates infringe the humanisation principle, the CJEU might start by examining the first prong of the principle; the adaptation of algorithmic pace-rates to workers' physical needs.

Relying particularly on the HELP Committee report, it seems difficult to argue that the algorithmic pace-rates are adapted to workers' physical needs. One of the main issues with algorithmic pace-rates is not just that they can result in physical injuries,[115] but that workers' bodies are made to perform the function of machines or robots – to the extent that even taking bathroom breaks may be penalised, despite being an innate *physical* human need. As workers have described, 'we *are* the robots'[116] and 'you are held at such a level of perfection… you're human, you're not a robot'.[117] The HELP Committee report found that there had been scarce attempt by Amazon to design the work in accordance with workers physical needs, stating that the 'company's workstations rarely account for workers needs'.[118] This suggests that the baseline ergonomic requirement of the humanisation principle – that work should be adapted to physical needs – has not been met.

Moreover, there is evidence to suggest that, not only are workers' physical needs *not* taken into account in the use of algorithmic pace-rates, they are often flagrantly disregarded. This speaks in particular to the criticisms of the *dehumanising* nature of Amazon's algorithmic pace-rates, which is not captured in traditional

[115] See footnotes 66 and 67; HELP Committee (n 7); Rozmysłowicz (n 76).

[116] Vallas and others (n 6) 432.

[117] Vallas and others (n 6) 436.

[118] The HELP Committee (n 7) 48 explicitly tied this to the ergonomic principle of adapting work to fit the worker.

occupational health and safety analysis. One study found that nearly 1 in 2 Amazon warehouse workers were physically injured at work[119] and, as one interviewee put it, 'most [workers] were like me… young and healthy. Within weeks everyone is developing knee and back pain'.[120] The HELP Committee argued that, even though Amazon has the financial resources to reduce injuries, it consistently 'prioritizes speed and profit over worker health and safety'.[121] A clear example of this, presented before the HELP Committee, was an Amazon safety lead who was 'laughed' at for his suggestion that the pace-rates should be reduced to avoid injury. They told him to 'forget about it … the pace is what it is'.[122]

Given that the humanisation principle requires employers to 'take into account' workers' physical needs when organising patterns of work, the overt disregard for considering physical needs is what arguably makes Amazon's pace-rates uniquely dehumanising. The insistence to 'keep the line moving at all costs'[123] thus suggests a manifest breach of the humanisation principle's foundational first prong.

The second strand of the humanisation principle requires employers to adapt work to workers' psychosocial – or 'human emotional'[124] – needs. This requires consideration of the impact that algorithmic pace-rates have on workers' mental and social wellbeing.

[119] Jabsky and Obernauer (n 41).

[120] HELP Committee (n 7) 42.

[121] HELP Committee (n 7) 4

[122] HELP Committee (n 7) 95.

[123] As stated by a worker interviewed in HELP Committee (n 7) 59.

[124] Joint ILO/WHO Committee (n 81) 11.

Amazon's use of algorithmic pace-rates has been widely criticised for 'treat[ing] workers like things, to be pushed harder and faster without regard for the emotional or personal cost'.[125] It has been argued that workers are made 'constantly aware of their pace and work in perpetual fear of falling behind'.[126] The stress and pressure to make rate, the incessant monitoring of every second, the risk of public shaming of workers who fail behind, and the feeling of being 'embarrassed and demoralised'[127] for using the bathroom can all culminate in an environment which is not adapted to workers' *emotional* needs. The fact that the algorithmic pace-rates, often based on averages, are set at a pace which is 'not possible for all employees to achieve'[128] can result in extreme levels of stress because workers' know 'there's consequences for not performing'.[129] The HELP Committee referred to the 'horrific stories' of Amazon's lack of care for stressed, injured workers and its 'sometimes even cruel' treatment of disabled workers.[130] This 'culture of fear'[131] attached to the algorithmic pace-rates is what the humanisation principle seeks to address: work which is set a predetermined rate must be *humanised.* It has to be adapted to workers' emotional needs as human beings. Given that fulfilment centres have been described

[125] Anonymous, 'Our New Column from inside Amazon: "They Treat Us as Disposable"' *The Guardian* (21 November 2018) <https://www.theguardian.com/us-news/2018/nov/21/our-new-column-from-inside-amazon-they-treat-us-as-disposable> accessed 18 May 2025.

[126] HELP Committee (n 7) 23.

[127] HELP Committee (n 7) 39.

[128] Rozmysłowicz and Krzyżaniak (n 9) 153.

[129] Quote from a worker in HELP Committee (n 7) 40.

[130] HELP Committee (n 7) 111, 126.

[131] HELP Committee (n 7) 37, stating that 'Amazon disciplines workers for moving too slowly, creating a culture of fear'.

as a place with 'no humanity within those four walls',[132] it strongly suggests that this obligation is not being met.

The last prong of the humanisation principle is that the algorithmic pace-rates should take into account the *specific* needs of workers. This has a complimentary function to the reasonable accommodation duty in Article 5 Framework Directive for Equal Treatment in Employment, but goes significantly further by addressing workers who do not qualify as disabled for the purposes of that directive. This is particularly relevant to Amazon's fulfilment centres, which have been accused of 'stunning callousness' towards its workers who have been injured during the job.[133] The federal US Occupational Safety and Health Administration and HELP Committee found that Amazon delayed treatment to workers with severe injuries, belittled the legitimacy of their injuries, and even returned workers immediately back to work, with only ibuprofen, despite needing major spinal surgery.[134] One internal Amazon report blamed the 'frailty' of workers with an 'intrinsic likelihood of injury' for its high injury rates, rather than the speed of the algorithmic pace-rates.[135] This dismissal of workers' specific needs is reflected in the words of workers who complained of being 'humiliated, embarrassed, judged' for their requests for adaptations.[136] This therefore suggests a deeply *dehumanising* approach towards workers who are injured or have specific needs.

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[132] Quoting a worker in HELP Committee (n 7) 110.

[133] HELP Committee (n 7) 97.

[134] HELP Committee (n 7) Section VIII; US-OSHA (n 66).

[135] HELP Committee (n 7) 83.

[136] HELP Committee (n 7) 135.

The humanisation principle is well-placed to these capture stigmatising, dehumanising practices. For injured workers who do not reach the threshold of disabled under the Framework Directive for Equal Treatment in Employment, the principle of adapting work to *specific* needs still asserts that their injuries must be considered when organising work. As the HELP Committee stated, blaming the 'frailty' of workers for injuries distorts the ergonomic principle of 'fitting the task to the human'.[137] It 'flips this basic tenet on its head' by forcing people to fit jobs that they are unable to do.[138] It is therefore highly arguable that Amazon's practices towards the *specific* needs of workers are not compliant with the humanisation principle.

Lastly, one of the core means of discharging the duty to adapt work to the worker is to involve workers in the process of work organisation. Amazon's Dragonfly programme allows employees to submit suggestions for improvements, through an app or at on-site kiosks, which site managers can then respond to.[139] Examples include suggestions to move a package scanner so it is not knocked over, or adding motion sensors to alert forklift drivers of nearby people.[140] Other than this, however, there appears to be limited worker input into the organisation of work. None of the literature examined refers to workers being consulted or given input over the use of algorithmic pace-rates. This was the case even in instances where Amazon had been legally required to do so as part of its reasonable accommodation duties.[141] In light of this, it

[137] HELP Committee (n 7) 84.

[138] ibid.

[139] Amazon, 'Amazon's safety performance continues to improve year over year' (*Amazon*, 13 March 2025) <https://www.aboutamazon.com/news/workplace/amazon-workplace-safety-performance-2024>; Amazon, 'Amazon's safety record shows consistent annual improvement' (*Amazon,* 8 March 2024) <https://www.aboutamazon.com/news/workplace/amazon-workplace-safety-post-2023> both accessed 6 November 2025.

[140] Amazon (n 139 (2025)).

[141] HELP Committee (n 7) 133, stating that 'Amazon's accommodations process falls far short of the interactive standard required by law'.

seems unlikely that the Dragonfly programme alone would discharge the duty of adapting work to the worker, since it appears to function as an *ex-ante* measure focused on physical safety improvements rather than actively humanising work. The absence of genuine worker input, as indicated by these studies, is thus a final indicator that the humanisation principle has likely been infringed.

Justification

If the CJEU, in light of the above, found that the humanisation principle had been infringed, it would then likely engage in a proportionality test to determine if the infringement is justified. As discussed in Chapter 5, this would involve an examination of a legitimate aim achieved through suitable and necessary means. The following analysing therefore builds the employer's defence, in order to demonstrate how it could respond to a finding that such algorithmic pace-rates infringe the humanisation principle.

First, there are various legitimate aims that Amazon could – and has[142] – put forward to justify its use of algorithmic pace-rates. The most obvious is to state that algorithmic pace-rates are essential to ensuring Amazon meets its core business aim of on-time deliveries to its customers. This commercial interest is likely to be accepted as a legitimate aim,[143] and has been relied upon in national disputes.[144] Other legitimate

[142] The legitimate purposes of Amazon's practices were analysed at length in the CNIL (n 3) and VG Hanover (n 4) decisions, albeit in the context of data processing. This is discussed later, but to summarise, the VG Hanover identified three main legitimate purposes: control of the logistics process, control of employee skills, and creation of an employee performance evaluation (para 62). The CNIL grouped Amazon's purposes into two overarching objectives: management of real time orders and work planning and performance management (para 33).

[143] For example, the CJEU accepted 'commercial interests' as a legitimate aim in the context of data processing in Case C-621/22 *Koninklijke Nederlandse Lawn Tennisbond v Autoriteit Persoonsgegevens* [2024] ECLI:EU:C:2024:858.

[144] See footnote 141.

aims that Amazon may point to include ensuring safety and quality control within its fulfilment centres, ensuring a fair and objective distribution of work amongst workers, and lastly to train workers by setting the expected speeds.[145]

With the legitimate aims identified, the next stage to examine is whether the algorithmic pace-rates are a suitable means of achieving these aims. Amazon could argue that, without algorithmic pace-rates, it would not be possible to coordinate and process the vast quantity of goods arriving at warehouses within the times required to meet its delivery targets. For example, a regional German court (discussed later) noted that Amazon had roughly four hours to process goods after receiving them at the fulfilment centre, equating to 153 packages sent out per minute and around 2,200 workers to coordinate.[146] The HELP Committee highlighted a fulfilment centre in the US with over 1.1 million square feet and noted that over 7 billion items were delivered the same or next day globally by Amazon in 2023.[147] In light of such an immense logistical undertaking, it can be argued that using algorithmic pace-rates is a suitable means of ensuring that the delivery deadlines are met, as the timings for processing the goods need to be precise and carefully followed in order to meet customer deadlines.

It can also be argued that algorithmic pace-rates are suitable for ensuring that work is fairly and objectively distributed between workers because they set the standard rate of work for the whole team and prevent underperforming workers holding the rest

[145] All three of these aims were highlighted in the CNIL decision (n 3); the VG Hanover decision (n 4) considered the second and third aims.

[146] VG Hanover (n 4) para 8.

[147] HELP Committee (n 7) 13- 14.

of the processing line up.[148] Furthermore, it can be argued that algorithmic pace-rates are a suitable means of ensuring safety and quality at the fulfilment centre, since the pace can be set according to what the company deems as a reasonable rate, which may not be overly strenuous and provides enough time to ensure parcels are adequately packed and labelled, for example.[149] Lastly, algorithmic pace-rates can be considered as a suitable means of training the workforce, since the expectations for work output are clear, and where workers fall below this speed, managers can then speak with workers directly to identify improvements.

Having demonstrated the potential suitability of algorithmic pace-rates in achieving the legitimate aims, the last stage of the proportionality test is to highlight their necessity. This is likely to be the most contentious area of analysis, as the employer would need to show that the algorithmic pace-rates do not go beyond what is necessary to achieve that aim, and that there are no alternative means available.

The first line of argument would likely be to dispute claims that the algorithmic pace-rates cause excessive risks to workers, as maintained predominantly by the US HELP Committee,[150] federal[151] and state-level Occupational Health and Safety authorities.[152] This would be an evidenced-based approach to show that the algorithmic pace-rates do not go beyond what is necessary to achieve its aims by inflicting various harms on workers.

[148] This was one of the arguments made by VG Hanover (n 4) para 137.

[149] VG Hanover (n 4) para 26 considered the pace-rates to be of 'moderate' speed.

[150] HELP Committee (n 7).

[151] See footnote 66.

[152] See footnote 69.

Amazon has previously disputed the HELP Committees' Report, stating that it is factually wrong, selective, lacking in context, and reliant upon outdated information.[153] Key arguments it puts forward are that:[154] Amazon's injury rate is declining (despite its pace of deliveries increasing); the HELP Committee relied predominantly upon interviews with 153 employees, which are hard for Amazon to verify and represent only 0.018% of the US workforce;[155] the statistics used to compare its injuries with other employers should have been based only on employers with over 1000 employees;[156] that the Committee's references to Amazon's internal documents like the Project Soteria are outdated and unfair, as Amazon does not rely on them anymore[157]; and that the report did not refer to the fact that the Washington State Department of Labour and Industries' claims of health and safety violations were dismissed by a judge.[158] In addition, Amazon also releases an annual summary of its health and safety record:[159] the latest in 2024 highlighted how Amazon's recordable incident rate at its warehouse and storage units had improved by 27% over the past five

[153] Amazon, 'Senator Bernie Sanders Continues to Mislead the American Public on Workplace Safety at Amazon' (*Amazon* 21 October 2025) <https://www.aboutamazon.com/news/policy-news-views/amazon-response-to-senator-bernie-sanders-report-on-workplace-safety> accessed 6 November 2025.

[154] Found in Amazon (n 153).

[155] Amazon says that it 'understands' that the committee spoke with 135 workers, although the HELP Committee report (n 7) 4 says that 'nearly 500 workers shared their stories with the Committee, and Committee staff conducted 135 interviews'.

[156] Despite claiming this, however, Amazon's statement (n 153) does not clarify what the figure would then have been, were different statistical categories used. It only states that its injury rates for transportation rates were less that the industry average.

[157] Amazon (n 153).

[158] Although this judgment appears to be being appealed: Ronnie Dungan, '"Significant risks": Courtroom win for Amazon over safety, but Superior Court appeal coming' (*HR Grapevine*, 18 October 2024) <https://www.hrgrapevine.com/us/content/article/2024-10-18-courtroom-win-for-amazon-over-safety-but-superior-court-appeal-coming\> accessed 6 November 2025.

[159] Amazon refers to these articles as 'reports', although the reports are posts on its website, labelled as a '7' and '8 minute read', respectively: see Amazon (n 139). The links Amazon provides to the earlier reports do not appear to exist anymore, see: <https://safety.aboutamazon.com>.

years (although its injury rate, according to Amazon's own data, is still higher than the industry average).[160]

The second line of argument that Amazon may rely on is to state that there are no alternatives available other than algorithmic pace-rates, and that Amazon has introduced 'humanising' measures to minimise the impact of the rates.

As the French Data Protection Authority has stated, 'visual control by supervisors is impossible',[161] as even slight errors or deviations from the scheduled times can result in major distributions to the entirety of the production line. Algorithmic pace-rates also enable Amazon to problem solve in real-time by responding to changes in workers' speeds along the production line, in a way which could not be achieved without algorithmic pace-rates.[162]

Recognising that there is no possible alternative, Amazon could argue that it has nevertheless attempted to humanise the algorithmic pace-rates. The humanisation principle in Article 13 WTD does not prohibit the use of 'predetermined rates': rather it states that if they are to be used, they must 'in particular' adhere to the 'general principle of adapting work to the worker'. Hence, Amazon cannot be penalised for the use of algorithmic pace-rates *per se.*

Examples of Amazon's humanising strategies include the following. To reduce the monotony of work, Amazon has installed computer games in many of the

[160] It is worth noting that the post (n 139 (2025)) did not contain any raw data, only percentages of improvements and a simple graph without labelled axis stating that its US RIR comparison rate was 6.0 in 2024. Whilst writing this chapter, the post was amended from 6.2 to 6.0.

[161] CNIL (n 3) para 80.

[162] As argued in the VG Hanover decision (n 4).

workstations: the faster the worker works, the faster they progress in the game.[163] It claims these are voluntary games to make the work more engaging, although they have been criticised for ultimately aiming to increase workers' pace through competition.[164]

Other humanising examples include Amazon's 'Mind & Body Moments' scheme, adopted at some warehouses, which facilitates a 30 second break every hour.[165] A pop-up message appears on the screens at workstations asking if the worker needs a physical or mental break: they are then instructed to either stretch or do breathing exercises/personal reflection for 30 seconds. Amazon also implemented its 'WorkingWell Huddle' programme, which introduces short team meetings each month on body mechanics, mindfulness and stretching. This typically involves a short animated video: one of the videos shown to the HELP Committee advised workers to 'pass on high sugar' foods in order to let their 'muscles recover and grow stronger from activity', as shown in Figure 4.[166]

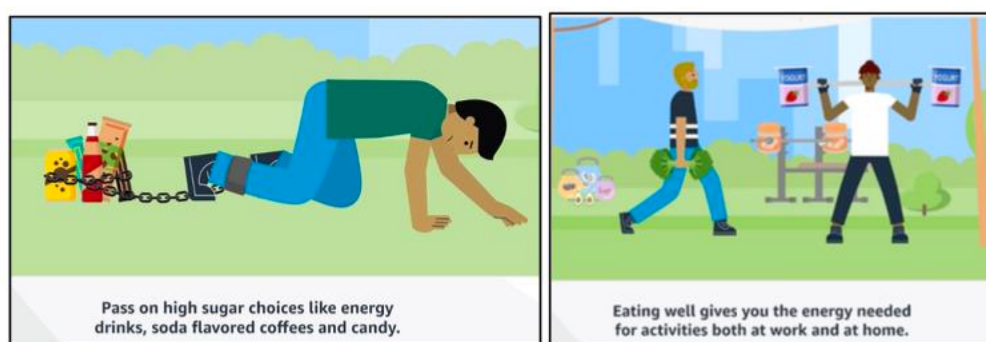

Figure 4: Screenshot from Amazon's Working Well videos. Source: US HELP Committee (2024) 86.

[163] HELP Committee (n 7) 32.

[164] HELP Committee (n 7) 33. Amazon (n 153) has disputed this.

[165] HELP Committee (n 7) 92.

[166] HELP Committee (n 7) 85 – 86.

Moreover, rather than regarding algorithmic pace-rates as degrading, some workers report taking pride in making rate. One worker explained that managers will give him the harder products to process because 'they know I can make that rate',[167] whilst another worker explained that she loved the competitive nature of the algorithmic pace-rates: 'it's my daily goal to always be on top… the more I put out, the more I get excited'.[168] Others argue that they are 'treated fairly' by Amazon despite the negative press around the algorithmic pace-rates.[169]

Lastly, it can be argued that the algorithmic pace-rates are humanised through the interaction between workers and managers. The consequences for failing to make rate tends to result in a feedback session with the manager. It could be argued that this is an opportunity for improvement, training and support for the worker. It could also allow the worker to explain if there are any reasons for not making rate – for instance, that the item being dealt with is particularly heavy or awkwardly shaped.[170] As argued by a regional German court, this constant feedback process can exemplify good employee management as employees benefit from, and may enjoy, the chance to continuously develop.[171]

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[167] Vallas and others (n 6) 438.

[168] Vallas and others (n 6) 439.

[169] Vallas and others (n 6) 440 argue that these quotes are reflective of the high levels of hardship on the labour market, meaning that the company's willingness to hire workers is sometimes regarded as akin to a gift. The full worker's quote is 'I think we're treated fairly. We're very fortunate to have jobs'.

[170] As argued in the VG Hanover decision (n 4) para 88.

[171] VG Hanover (n 4) paras 86 and 113.

There are many rebuttals that could be made to this defence, from a lack of evidence that Amazon's US injury rates are low (Amazon talks often in terms of 'improvements' to injury rates, not raw data)[172] and a lack of evidence that the feedback sessions are training, not disciplining, opportunities. There are also questions over whether, if high pace-rates are necessary to meet customer deadlines, why more employees are not employed[173] or why Amazon would offer such customer guarantees if it knows this will result in unjustified infringements to the humanisation principle.

It would ultimately, however, be down to the referring court to determine if there is a breach of the humanisation principle. Whether Amazon's use of algorithmic pace-rates demonstrates a 'culture that prioritizes productivity over human needs', as argued by the New York Committee of Occupational Safety and Health,[174] or whether the algorithmic pace-rates reflect a genuine balance between human needs and business needs, is therefore a question of evidence and degree.

What this section has demonstrated, however, is that the humanisation principle is a potentially critical regulatory tool for addressing the use of algorithmic pace-rates. There is a mismatch between the rhetoric used to promote the US's Warehouse Worker Protection Acts on the one hand, and the substance of the provisions on the other. Whilst Senators have heralded the federal Bill as requiring workers to be treated 'with the dignity they deserve'[175] and protecting them from the 'scourge of corporate

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[172] See Amazon (n 153); Amazon (n 139); Amazon, 'Amazon releases workplace safety update' (*Amazon* 7 March 2023) <https://www.aboutamazon.com/news/workplace/amazon-safety\> accessed 6 November 2025.

[173] As argued by the regional Data Protection Commissioner in VG Hanover (n 4) para 20.

[174] Jabsky and Obernauer (n 41) 7.

[175] As stated by Senator Hawley, see Press Release (n 73).

greed',[176] the substantive provisions predominantly require transparency over the use of algorithmic pace-rates and compliance with existing breaks obligations. This compares to the humanisation principle, which requires that any use of predetermined work-rates must be adapted to the worker's human needs: it must be *humanised.* As a specific expression of the right to dignity at work and an embodiment of the humanisation movement, it captures precisely the dehumanising implications of algorithmic pace-rates that the Senators are alluding to. Where the pace of work is not adapted to the human needs of workers, the humanisation principle is an intuitive general principle to counter-act such practices.

Having examined the compatibility of Amazon's algorithmic pace-rates with the humanisation principle, this section turns examine to the lawfulness of algorithmic pace-rates under the GDPR. What the following analysis does is determine how the humanisation principle could be relied upon within data protection law. It ultimately argues that the existing German and French decisions on Amazon's algorithmic pace-rates could have been altered, had the GDPR been interpreted in conjunction with the humanisation principle.

Interpreting the Compatibility of Algorithmic Pace-Rates with the GDPR and the Humanisation Principle

Amazon's use of algorithmic pace-rates requires the constant collection of employee data. As a result, the practice has been challenged as contravening the GDPR in two

[176] As stated by Senator Markey, see Press Release (n 73).

high-profile decisions from EU Member States. In 2023, the French Data Protection Authority (CNIL) issued a €32 million fine after finding that Amazon breached the GDPR in several fulfilment centres.[177] In the same year, by contrast, the Hanover Administrative Court (Verwaltungsgericht Hannover) overturned a regional Data Protection Commissioner's decision and held that Amazon's data processing in its fulfilment centres *was* compatible with the GDPR.[178] The GDPR is therefore a key area for litigating algorithmic pace-rates.

However, despite reaching very different conclusions, both national decisions struggled to articulate the role of employment rights in the context of data protection law. In the preceding analysis, this section explains why that is, and demonstrates how the humanisation principle could have been a critical tool in supporting the analysis of the GDPR.

Both decisions concerned similar facts and claims. The overarching claim was that Amazon's continuous, real-time and granular collection of employee data in its fulfilment centres went beyond what was necessary for its business aims and infringed the interests and fundamental rights of workers.[179] The claims largely addressed the

[177] CNIL (n 3).

[178] VG Hanover (n 4). Note, as mentioned previously, that this judgment is being appealed.

[179] The CNIL decision (n 3) examined whether the constant collection of employee data through the workers' scanners to create quality indicators was compatible with the GDPR and national law. The CNIL focused on specific indicators, such as the recording of 'idle time' and the stow machine gun indictor which indicated the speed of work and centred its analysis on Article 5(1)(c) and Article 6(1)(f) GDPR, of which it found had been violated, as well as also finding violations of Article 12, 13, 14 and 32 GDPR.

The VG Hanover decision (n 4) reviewed the partial prohibition, introduced by the regional Data Protection Commissioner, of the real time, minute-by-minute collection of data by Amazon to create performance profiles, feedback, and process analysis beyond three months of the employment relationship commencing (specifically through its ADAPT and FCLM applications). The Hanover Court's analysis focused primarily on the compatibility of Amazon's data processing with national law – s26 Bundesdatenschutzgesetz (BDSG) – which states that employee data can be processed in the employment relationship where it is necessary. The Court recognised that s26 BDSG was being challenged before the CJEU as incompatible with Article 88 GDPR and so proceeded to also examine Articles 5, 6, 12, 13 and 22 GDPR, finding no violation. (The CJEU subsequently held that s26 BDSG needed to be 'disregarded' for failing to satisfy the conditions under Article 88(2) GDPR: Case C-34/21 *Hauptpersonalrat der Lehrerinnen und Lehrer v Minister des Hessischen Kultusministeriums* [2023] ECLI:EU:C:2023:270 para 89. Note that online

data minimisation principle in Article 5(1)(c) GDPR and the legitimate interests basis in Article 6(1)(f) GDPR.[180] These provisions will be the focus of the following analysis.

Under the GDPR, data processing must comply with the set of principles in Article 5 (as explained in Chapter 2). One of these is that the personal data shall be 'adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed ('data minimisation')'. Article 6 then outlines the legal bases for processing data; Article 6(1)(f) states that processing shall only be lawful if it is 'necessary for the purposes of the legitimate interests pursued by the controller or by a third party, except where such interests are overridden by the interests or fundamental rights and freedoms of the data subject which require protection of personal data'.

Both of these provisions are interrelated, as they both concern proportionality.[181] The crux is whether the data processed is proportionate to the legitimate purpose. Whilst the CNIL held that Amazon's data processing was not proportionate (in certain circumstances), the Hanover Court held that it was.

Neither decision, however, was able to adequately identify what was being balanced in the proportionality exercise. Under the data minimisation principle (Article

translation tools were used to translate the judgments (the author has B1.1 Level (intermediate) German).

[180] These provisions were the central focus of the CNIL's decision (n 3) (see para 52 'on the applicable legal framework'). Although the VG Hanover (n 4) predominantly examined s26 BDSG, it characterised this as a 'proportionality test' (para 60) and the provision itself can be regarded the data minimisation principle. The Hanover Court did not examine Article 6(1)(f), even though the regional Data Protection Commissioner did, as it held that s26 BDSG was *lex specialis* to it. It did examine Article 5(1)(c), however, and relied upon the same reasoning as it had done under s26 BDSG.

[181] As acknowledged in Waltraut Kotschy, 'Article 6 Lawfulness of Processing' in Christopher Kuner and others (eds), *The EU General Data Protection Regulation (GDPR): A Commentary* (OUP 2020); Case C-252/21 *Meta Platforms Inc and Others v Bundeskartellamt* [2023] ECLI:EU:C:2023:537.

5(1)(c)), there needs to be rationale for *why* data should be minimised. Under the legitimate interests basis (Article 6(1)(f)), there needs to be a clear understanding of what interests or fundamental rights might override Amazon's business interests.

Both decisions identified various purposes behind Amazon's need for employee data processing, which centred around two main aims: controlling the logistic processes and managing employee performance.[182] The interests of the employee, however, were not clear. In the CNIL decision, multiple employee interests were mentioned throughout the decision, often thrown in at the concluding parts, all in the same line, without any real engagement. This included employees' reasonable expectation that they would not be monitored every second; the negative moral repercussion on the employee for excessive monitoring; employees' right to private and personal life; the right to working conditions which respect the health, safety and dignity of the worker; the intrusive character of the monitoring; and the permanent pressure that the monitoring inflicted. This contrasted with the Hanover Court decision, which focused on weighing Amazon's business needs with the employees' right to privacy. The Hanover Court equated data protection rights to privacy and argued that employers should be able to collect employee data in order to assess whether their employees were fulfilling their contractual obligations. Since Amazon only collected data when employees were physically at work, and did not monitor private conversations, there was no disproportionate infringement of workers' privacy.[183] Similar remarks were made in the CNIL decision, which conceded that employees should reasonably expect

[182] See footnote 142.

[183] VG Hanover (n 4) paras 103 – 108.

a level of surveillance at work, by the very fact that they are employees of a company.[184] It also stressed that it did not dispute Amazon's need to meet its customer demands or access information on its employees performance, and 'reiterate[d] that it is not its role to examine' whether Amazon's practices were compatible with the requirements of labour law.[185] Both decisions therefore highlighted a hesitancy (or non-engagement in the Hanover Court's case) to fully examine the interests of employees within the GDPR's proportionality framework.

The intersect between data protection and labour law has been an ongoing point of academic discussion, of which these two cases highlight. Several have argued that data protection rights do not 'translate' across into the employment sector, and that there is a 'structural legal deficit' in using data rights at work, for various reasons including the hierarchical nature of the relationship, dependency, and information asymmetries.[186]

This is arguably true, although perhaps not an employment sector specific problem. Purtova has described how data protection law risks becoming the 'law of everything' because modern society increasingly involves processing personal data.[187] Building on this, Lynskey argues that this risks data protection law losing its practical

[184] CNIL (n 3) para 73.

[185] CNIL (n 3) para 93.

[186] Michele Molè, 'Lost in Translation: Is Data Protection Labour Law Protection?' (2025) 45(3) Comparative Labour Law and Policy Journal (forthcoming); Einat Albin, 'The Three-Tier Structural Legal Deficit Undermining the Protection of Employees' Personal Data in the Workplace' (2025) 45 Oxford Journal of Legal Studies 81; Spiros Simitis, 'Reconsidering the Premises of Labour Law: Prolegomena to an EU Regulation on the Protection of Employees' Personal Data' (1999) 5 European Law Journal 45; Halefom Abraha, 'Regulating algorithmic employment decisions through data protection law' (2023) 14(2) European Labour Law Journal 172; Jeremias Adams-Prassl and others, 'Regulating algorithmic management: A blueprint' (2023) 14 European Labour Law Journal 124.

[187] Nadezhda Purtova, 'The Law of Everything. Broad Concept of Personal Data and Future of EU Data Protection Law' (2018) 10 Law, Innovation and Technology 40.

effectiveness, because it is used as a first line of defence in almost all data-related infringements of fundamental rights.[188] These points can be coupled with the 'nature and scope of the right to data protection are still elusive'.[189] The justification behind data protection rights is not clear, and tends to be closely linked to the right to privacy.[190] Hijmans argues that privacy provides the normative value, whilst data protection governs how this is achieved:[191] as data protection is 'a right to a rule', it is essentially procedural.[192]

If data protection is ultimately an attempt to ensure privacy, then this struggles in the context of employment for the reasons identified in the CNIL and Hanover Court's decision. The employer, having employed someone to perform a duty, is entitled to ensure that that duty is being fulfilled. The employees' privacy is negated, by virtue of the relationship itself. The contention tends to be over the way data is used, rather than the fact it is collected. As the Hanover Court outlined, workers who gave witness did not have an issue with data collection itself, but how it was used to give feedback.[193] Framed in light of privacy, it makes it difficult to conceive data protection rights as a significant counterweight to legitimate business needs.

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[188] Orla Lynskey, 'Complete and Effective Data Protection' (2023) 76 Current Legal Problems 297.

[189] Plixavra Vogiatzoglou and Peggy Valcke, 'Two Decades of Article 8 CFR: A Critical Exploration of the Fundamental Right to Personal Data Protection in EU Law' in Eleni Kosta and others (eds), *Research Handbook on EU Data Protection Law* (Edward Elgar 2022) 11.

[190] Orla Lynskey, 'Article 8: The Right to Data Protection' in Michal Bobek and Jeremias Adams-Prassl (eds), *The EU Charter of Fundamental Rights in the Member States* (Hart Publishing 2020).

[191] Hielke Hijmans, *The European Union as Guardian of Internet Privacy* (Springer 2016) 59, discussed in Lynskey (n 190).

[192] Lorenzo Dalla Corte, 'A Right to a Rule: On the Substance and Essence of the Fundamental Right to Personal Data Protection' in Dara Hallinan and others (eds), *Data Protection and Privacy: Data Protection and Democracy* (Hart Publishing 2020), as discussed in Lynskey (n 190).

[193] VG Hanover (n 4) para 110.

If, however, data protection is better understood as procedural rules to protect other fundamental rights – not just privacy – then this does not necessarily lead to an inherent conflict with employment law. Rather, it allows data protection to be seen as a framework for ensuring *other* rights, like worker rights. This was the overarching argument made in Chapter 2: many of the rights in the GDPR are procedural, and therefore depend upon substantive rules from other fields of law.

As a result, the CNIL and Hanover Court decisions arguably did not need to be so cautious in applying employment rights, since this is the purpose of procedural data protection rules. For example, it is only in the very end section on justifying the fine that the CNIL fully expresses its concerns, stating that the 'permanent pressure' was an 'attack' on, or 'disproportionate harm' to, workers' rights and freedoms, as well as drawing attention to temporary workers who are 'extra precarious' and criticising how even small errors or underperformance by workers resulted in major repercussions.[194] Instead of considering these concerns as external to the *substantive* analysis, the CNIL could have regarded the purpose of data protection law as protecting against data being used in this way.

If data protection rights are seen as procedural guarantees to protect other rights, then the question subsequently becomes, what rights or interests of the worker should have been considered in the two decisions? Article 6(1)(f) GDPR refers to the 'interests or fundamental rights and freedoms' of the data subject, providing broad protection to

[194] CNIL (n 3) paras 163 – 178. 'Attack' or 'disproportionate harm' depends on the translation used.

data subjects since 'interests' are not qualified,[195] and can thus cover many aspects from feelings of irritation[196] to personal interests or individual rights.[197]

As discussed, the CNIL decision incorporated multiple interests indiscriminately, whilst the Hanover Court considered narrowly the workers' interest in privacy. A key workers' interest which was absent from both judgments, however, was the humanisation of work principle. The humanisation principle was created to address exactly this type of work. It was introduced as a reaction to scientific management, factory-line 'conveyor belt' jobs, and 'in particular… monotonous work and work at a predetermined work-rate'.[198] It is therefore a highly pertinent interest to workers at Amazon's fulfilments centres, as it provides an anchoring norm for how to treat employees at risk of being treated as part of the machinery.

As a specific expression of the right to dignity at work, reliance on the humanisation principle within the GDPR framework is fortified by Article 88 GDPR, which recognises that data protection in the context of employment must safeguard workers' human dignity, legitimate interests and fundamental rights. It can lastly be argued that, not only is the humanisation principle an interest which ought to have been relied upon in these cases, there was a *duty* on national decision-makers to interpret the GDPR in compliance with this principle under the hierarchy of norms. As a general

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[195] Kotschy (n 181).

[196] Article 29 Data Protection Working Party, 'Opinion 06/2014 on the notion of legitimate interests of the data controller under Article 7 of Directive 95/46/EC' (Working Paper 217, adopted 9 April 2014) 37.

[197] European Data Protection Board, 'Guidelines 1/2024 on processing of personal data based on Article 6(1)(f) GDPR' (October 2024).

[198] Working Time Directive, Article 13; Framework Directive on Safety and Health, Article 6(2)(d).

principle of EU law, secondary norms must be interpreted in light of the humanisation principle (discussed in more depth below).

Had the humanisation principle been relied upon, the two national decisions may have been altered in several ways. Starting with the CNIL decision, the humanisation principle would have provided a critical tool for strengthening its analysis. Rather than relying haphazardly on different worker interests – from moral repercussions to workers' expectations around monitoring – it could have succinctly relied upon the humanisation principle. Under Article 6(1)(f) GDPR, Amazon's aim in controlling the logistic process and monitoring employee performance would need to be proportionate to its infringement of the duty to adapt patterns of work to the worker, and the yardstick for examining what is necessary data under Article 5(1)(c) GDPR would have been relative to humane work organisation. When justifying the size of the fine, the CNIL referred to the 'extremely precise control of employees' every task, and how 'the pressure exerted on the warehouse workers … directly contributes to the economic gains' of Amazon.[199] This analysis is strikingly similar to the concerns of the humanisation movement – both the early movement which concerned Taylorist precision over every task, and elements of the recent rebirth in the US which highlights humanisation as a response to exploitation. Using the humanisation principle within the GDPR framework would have allowed the CNIL to incorporate these points into its substantive reasoning.

In terms of the Hanover Court decision, reliance on the humanisation principle would likely have had profound impact on the decision. Instead of balancing Amazon's

[199] CNIL (n 3) paras 167 and 178.

business needs with workers' right to privacy, the Hanover Court would have had to balance Amazon's business needs with the workers' human needs. This would likely have reshaped the Hanover Court's judgment in four main ways.

First, the core of the Hanover Court's judgment was that the continuous data collection was necessary – indeed 'indispensable' – for Amazon's ability to meet its delivery guarantees to customers.[200] It consistently emphasised that, 'the delivery dates guaranteed to the customers of [Amazon] …could not be realized without the processing of the employee's personal data to the extent at issue.' [201] The Hanover Court therefore concluded that the interference with the employees' data protection rights was minimal relative to the impact that a partial prohibition on data collecting would have had on Amazon's business aims. However, when Amazon's business needs are balanced in light of the adaptation of work to human needs, which is originally derived from health and safety law, then it becomes implausible to justify an infringement on the basis that the business model would collapse if the principle was adhered to. This is akin to arguing that harassment in the workplace is permissible if it is core to the business model, or that unequal pay is acceptable if it means the business can survive.

By incorporating the humanisation principle into the data protection framework, it therefore provides a stronger normative counterweight to legitimate business needs than privacy, thus altering the framing of the debate. There was an attempt by the regional Data Commissioner during the appeal to widen the framing of the discussion, who claimed that 'data protection law should ensure that respect for

[200] VG Hanover (n 4) para 24.

[201] VG Hanover (n 4) para 68.

human dignity and personality rights in the social market economy do[es] not degenerate into pure lip service', although this language was not taken up by the Hanover Court.[202] The humanisation principle, however, would have provided an avenue for widening the debate, as it offers a concrete principle which pertains precisely to this type of work.

A second line of reasoning that would be altered in light of the humanisation principle is the Hanover Court's discussion of whether the workers face 'permanent pressure' from the continuous collection of data.[203] This is the only moment in the judgment where there is a wider discussion of workers' interests beyond their right to privacy. However, without recourse to the humanisation principle, the analysis lacked direction. The Court argued that Germany's labour market was turning into an 'employee market', citing the number of job vacancies at that time, and thus that there was no 'permanent' pressure on workers since there are alternative job options.[204] The focus of the humanisation principle, however, is on the job *content*, not the job market conditions. It is a requirement to adapt work to the worker, regardless of the availability of other jobs. Viewed in this light, it is therefore not sufficient to argue that other options are available, but rather demonstrate that the job itself is compliant with the humanisation principle. This would ultimately reframe the analysis away from permanent pressure towards humane work organisation.

[202] VG Hanover (n 4) para 38.

[203] VG Hanover (n 4) paras 39, 112, 137.

[204] VG Hanover (n 4) para 109.

Third, the Hanover Court went on to argue that the constant collection and evaluation of employee performance data could not be regarded as pressurising, because many workers faced this. The Hanover Court even referred to their own role as judges, arguing that their performance data was collected continuously for personnel decisions yet this did not result in them claiming to be under permanent pressure. Recourse to the humanisation principle, however, would have undermined this line of comparison. The humanisation principle is concerned with the dehumanisation of workers, where workers are reduced to act as machinery within monotonous work at predetermined work-rates. The continuous data collection is dehumanising because it reduces workers to their minute-by-minute output. Data collection to facilitate this model is therefore arguably not comparable to situations of independent judges facing a very different type of pressure in a vastly different context. Incorporating the humanisation principle into the Hanover Court's analysis would have more precisely articulated the workers' interests at stake than generalised notions of pressure arising from continuous data collection.

Lastly, recourse to the humanisation principle may have changed even the *tone* of the Hanover Court's judgment. In describing the necessity of the data collection for meeting Amazon's business needs, the Court inadvertently underscored the extent of the dehumanisation of workers in the process.

The decision reiterated how, if a worker works below the 'average performance rate, this deficit must be compensated for by the ad hoc redistribution of employees ….. which in turn is a prerequisite for the frictionless passage of the goods… and thus

ultimately for compliance with the deadline guarantees issued to the customers.'[205] The depiction of a below average worker as a 'deficit' to be fixed is analogous to the fixing of a broken part of a machine, which is reinforced by the multiple references to 'frictionless' production in the judgment, as though workers are cogs in a well-oiled machine.[206] The Court justifies the need for real-time data collection in order for Amazon to 'detect these [deficits] as quickly as possible without any loss of efficiency along the processing chain' and underscores how workers, being trained in all areas of the production process, can be 'deployed in principle and at any time on almost every process path in the logistics centre without major efficiency losses.'[207]

This depiction of workers is arguably antithetical to the humanisation principle, which seeks to prevent workers being deployed as machinery. For example, the humanisation experiments which underpinned the humanisation movement were concerned with how to *humanise* factory line work: ensuring that workers had 'social contact' through group working or had a choice in which area of production was quintessential to adapting work *to the worker*.[208] The 'ad hoc' deployment of employees in immediate response to 'fluctuations' in efficiency, or the notion that the production line ought only to be 'frictionless', is contrary to the very idea that the production line be adapted to *human*, as well as, business needs.[209] It is therefore

[205] VG Hanover (n 4) para 72.

[206] VG Hanover (n 4) paras 66, 72, 106, 137.

[207] VG Hanover (n 4) paras 83 and 127.

[208] Gyllenhammar (n 98) 107.

[209] VG Hanover (n 4) paras 71-72.

arguable that recourse to the humanisation principle within the judgment would have reshaped the very tone of the decision.

To conclude this section, the GDPR – when combined with the humanisation principle – has significant potential in regulating the use of algorithmic pace-rates at Amazon. Given that the GDPR provisions examined (Article 5(1)(c) and Article 6(f)(1)) are procedural in nature, recourse to substantive rights is needed to inform the balancing act. The humanisation principle in Article 13 WTD addresses precisely this type of work, making it a critical interest to inform interpretation – and one which could have significantly enlightened the outcomes of existing national decisions.

Having examined the potential of the humanisation principle in addressing *algorithmic pace-rates*, the chapter will now lastly turn to examine its ability to regulate Amazon's use of *contested time*. Focus is placed on the role of the humanisation principle as a constitutional aid for interpretation, rather than as a standalone principle. It therefore examines an alternative use of general principles, as discussed in Chapter 4.

Applying Article 13 to Contested Time

In addition to algorithmic pace-rates, Amazon uses contested time to reshape working time norms at its fulfilment centres. The key debate within this phenomenon whether the contested time is classified as 'working' or 'rest' time.

Amazon's constant monitoring of workers enables it to identity 'time-off-task', the status of which, as discussed at the beginning of this chapter, is contested. Whilst time-off-time includes all instances of a worker being off-task, this section focuses only on instances where a worker is *intentionally* off-task, for example, they are using their phone, chatting to colleagues, or extending their designated breaks. It is not concerned with borderline or *legitimate* instances for being off-task, such as using the bathroom or talking to a manager.

The CJEU has not yet answered the question of whether the time in which a worker is found to be intentionally off-task would be classified as working or rest time under Article 2(1) WTD.

Were the CJEU to answer this question, it would be of major significance to its existing jurisprudence on the concept of working time. This has been a highly litigated area of EU labour law, due in part to the binary distinction between working time and rest time created by the WTD (as discussed in Chapter 2). Classifying time-off-task as working time would have wide ramifications: it would in effect hold that workers can deliberately prolong their designated breaks and still count it as working time. Holding the opposite, however, would mean that unproductive time or procrastination counts as rest time, blurring the concept of rest with inactivity. Determining the legal position of Amazon's use of contested time is therefore of particular significance.

Using existing CJEU case law, this section analyses whether intentional time-off-task would be classified as working time or rest time. It examines both sides of the argument in turn, and then highlights how recourse to the humanisation principle as an

interpretative aid would assist in settling the debate. It ultimately argues that being off-task is an innately human act, which the humanisation principle recognises and affirms.

Time-off-task as rest time

This section considers the arguments that time-off-task is *not* working time, but rest time. There are three main arguments which run as follows.

The first argument is that, using a literal interpretation of 'working time' under Article 2(1) WTD, time-off-task cannot be considered as working time. Article 2(1) defines working time as 'any period during which the worker is working, at the employer's disposal and carrying out his activity or duties'. Rest periods, under Article 2(2), are 'any period which is not working time': the two categories are therefore 'mutually exclusive'.[210]

If Amazon has explicit data demonstrating that the worker is off-task, then they cannot be regarded as 'carrying out his activities or duties', as required under Article 2(1) WTD. Rather, the worker is doing the opposite – they are shirking their instructed activities or duties. It would bend the wording of Article 2(1) WTD too far to find that Amazon workers who are shown to be off-task are carrying out their duties or activities. It would require the CJEU to explicitly endorse periods when workers are choosing not to work as working time, potentially leading to the illogical consequence that workers could take breaks at will, since such time would still count as working time.

[210] Case C-344/19 *D J v Radiotelevizija Slovenija* [2021] ECLI:EU:C:2021:182, para 29.

The second argument that time-off-task is *not* working time is that the CJEU's existing case law, which applies a 'teleological' interpretation of Article 2(1) WTD, is not applicable to time-off-task.[211] The CJEU's case law on the classification of working time has so far addressed on-call or standby work,[212] vocational training,[213] and peripatetic workers.[214] In these cases, the CJEU has applied a purposive definition of working time – even holding that those who are asleep can still be considered as working.[215] However, this broad approach cannot be applied across to the novel issue of time-off-task.

The reason for this is that, in the cases described above, the workers are doing as instructed: they are 'on-task'. These cases refer to the fact that worker is 'permitted'[216] or 'obliged to obey the instructions of his employer'[217] or 'subject… to the employer's instructions'.[218] The instructions are simply to be on-call, undertake vocational training, or for mobile workers to attend clients. There is an assumption that

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[211] Case C-344/19 *D J v Radiotelevizija Slovenija* [2021] ECLI:EU:C:2020:796, Opinion of AG Pitruzzella, para 46; Case C-580/19 *RJ v Stadt Offenbach am Main* [2020] ECLI:EU:C:2020:797, Opinion of AG Pitruzzella; para 46.

[212] Case C-518/15 *Ville de Nivelles v Rudy Matzak* [2018] ECLI:EU:C:2018:82; Case C-303/98 *SIMAP v v Conselleria de Sanidad y Consumo de la Generalidad Valenciana* [2000] ECLI:EU:C:2000:528; *Radiotelevizija* (n 210); Case C-580/19 *RJ v Stadt Offenbach am Main* [2021] ECLI:EU:C:2021:183; Case C-214/20 *MG v Dublin City Council* [2021] ECLI:EU:C:2021:909; Case C-151/02 *Landeshauptstadt Kiel v Norbert Jaeger* [2003] ECLI:EU:C:2003:437; C-14/04 *Dellas and Others v Premier ministre and Ministre des Affaires sociales* [2005] ECLI:EU:C:2005:728; Case C-437/05 *Jan Vorel v Nemocnice Český Krumlov* [2007] ECLI:EU:C:2007:23.

[213] C-909/19 *BX v Unitatea Administrativ Teritorială* [2021] ECLI:EU:C:2021:89; Case C-87/14 *Commission v Ireland* [2015] ECLI:EU:C:2015:449.

[214] Case C-266/14 *CCOO v Tyco Integrated Security* [2015] ECLI:EU:C:2015:578.

[215] *Jaeger* (n 212).

[216] *Jaeger* (n 212) para 2.

[217] *Tyco* (n 214) para 36

[218] *BX* (n 213) para 46.

the employer 'accrues a benefit' for this working time.[219] This differs from the Amazon workers who are *not* pursuing their activities or duties as instructed, but are instead off-task. This is therefore a fundamental distinction with the CJEU's existing case law and time-off-task.

Moreover, there are a handful of cases which offer further support for the idea that, if a worker is not following the instructions of the employer, then it will not be classified as working time. In *Dublin City Council,* the worker could *choose* to pursue another professional activity during his on-call time. The constraint on the workers' time had not come from the employer but was self-imposed, which affected its classification as working time.[220] Similarly, in *Radiotelevizija,* the CJEU held that factors which constrain a workers' ability to manage their own time which are a consequence of 'his/her own free choice' cannot be taken into account.[221] Relying on these cases, it can be argued that if a worker *chooses* to pursue activities outside of that instructed on company time, then it should not be considered as working time.

The strongest support for this position comes from *Tyco,* which is arguably the first example of the CJEU discussing the early stages of algorithmic management in the workplace.[222] It was held that the time peripatetic workers spent travelling between their home and the premises of the first and last customer was working time. One of the objections to such a finding, raised during the hearing, was that workers could 'take

[219] Case C-266/14 *CCOO v Tyco Integrated Security* [2015] ECLI:EU:C:2015:578, Opinion of AG Bot, para 64

[220] *Dublin City Council* (n 212); Commission, 'Interpretative Communication on Directive 2003/88/EC of the European Parliament and of the Council Concerning Certain Aspects of the Organisation of Working Time' [2023] C 109/01.

[221] *Radiotelevizija* (n 210) para 40.

[222] *Tyco* (n 214).

advantage' of this by using working time for their personal business.[223] The CJEU and Advocate General rejected this, stating that the employer could put in place 'monitoring procedures to avoid any abuse'.[224] The CJEU cited the monitoring of credit card statements for fuel as one option,[225] whilst the Advocate General referred to the fact that, since workers were already required to input into their work mobile phones the hours and work done, they could also input the times at which they left and returned from home.[226]

This decision implies two points: firstly, that 'abuse' or 'taking advantage' of working time classifications by workers – such as taking time-off-task – should not be explicitly endorsed as working time. Were Tyco's monitoring efforts to show that working time had been abused, the suggestion is that this would not count. The second implication is that employers are actively encouraged to monitor the use of workers' working time to identify time-off-task: the system described by the Advocate General in *Tyco* is essentially an early prototype of Amazon's use of scanners.[227] The inadvertent result of endorsing the monitoring of working time through algorithmic management, however, is that it could lead to other health and safety concerns (as discussed in earlier, under algorithmic pace-rates).

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[223] AG Bot in *Tyco* (n 219) para 45.

[224] ibid; *Tyco* (n 214) para 40.

[225] *Tyco* (n 214) para 41.

[226] AG Bot in *Tyco* (n 219) para 46.

[227] ibid.

The last main argument that time-off-task is *not* working time is that, even if a teleological interpretation of working time was applied, Amazon's use of time-off-task does not undermine the purpose of the WTD. The 'essential objective' of the WTD to is ensure rest breaks from work so workers 'recover from the fatigue'[228] and are 'prevent[ed]' from future risks of successive work.[229] Classifying time-off-task as rest time does not undermine this: rather, it allows workers to independently take breaks when they choose. Instead of a scheduled break, time-off-task provides workers with the autonomy to take their breaks anytime, whilst not undermining the managerial prerogative to ensure work is completed. It would therefore not undermine the essential objective of the WTD to classify time-off-task as rest time.

Time-off-task as working time

There are four main arguments to the contrary – that time-off-task *is* working time.

First, looking holistically at the definition of working time under Article 2(1) WTD, it seems likely that time-off-task would satisfy it. This is because the first two criteria – the 'spatial' criterion, and the 'authority' criterion – are met.[230] Amazon workers are at the physical site and are available to work during time-off-task. It is the last criterion – 'carrying out his activities or duties' – that is the disputed one.

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[228] *Case C-585/19 Academia de Studii Economice din Bucureşti v Organismul Intermediar - Ministerul Educaţiei Naţionale* [2021] ECLI:EU:C:2021:210, para 50.

[229] AG Bot in *Tyco* (n 219) para 25.

[230] AG Bot in *Tyco* (n 219) para 31 and AG Pitruzzella in *Radiotelevizija* (n 211) para 56 and *Stadt Offenbach* (n 211) para 56 refer to the definition of working time under Article 2(1) WTD as 'based on three criteria, which… it appears necessary to regard as cumulative: (i) a spatial criterion (to be at the workplace); (ii) an authority criterion (to be at the disposal of the employer); and (iii) a professional criterion (to be carrying out his activity or duties)'.

However, the CJEU's interpretation of this last criterion seems largely to collapse it into the previous two criteria. *SIMAP* held that, if workers 'are obliged to be present and available at the workplace', then they are carrying out their duties.[231] It was similarly held that 'intensity' and 'output' of the employees' work is not amongst the defining characteristics of the last criterion[232] and that, even if the person concerned is 'not continuously carrying on any professional activity', it can still count as working time.[233] In *BX,* the CJEU seemed only to refer to the two criterion, stating that the concept of working time is that the worker is 'physically present' and 'available.. to provide his or her services immediately'.[234]

In light of this, it can be argued that the last criterion largely reasserts the previous two, which time-off-task satisfies. This is supported by the CJEU's consistent upholding of physical location as the 'decisive factor' in identifying working time, suggesting that the last criterion is not critical to the definition of working time.[235] It is therefore arguably sufficient to show that Amazon workers are physically present and available to the employer, regardless of whether they are on or off-task, in order to count as working time.

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[231] *SIMAP* (n 212) para 48

[232] *Dellas* (n 212) para 43; *Vorel* (n 212) para 25, as discussed in Commission (n 220).

[233] Joined Cases C-397/01 to C-403/01 *Bernhard Pfeiffer and Others v Deutsches Rotes Kreuz* [2004] ECLI:EU:C:2004:584, para 93, citing *Jaeger* as the example of this. See also Commission (n 220).

[234] *BX* (n 213) para 40.

[235] *BX* (n 213) para 40; *Radiotelevizija* (n 210) para 33; *SIMAP* (n 212) para 48; *Dellas* (n 212) para 48; *Vorel* (n 212) para 28.

The second line argument is that the CJEU's on-call cases *are* analogous to time-off-task. Rather than seeing on-call cases as a separate area of jurisprudence,[236] it could be argued that all workers are essentially 'on-call'. The CJEU has held that an entire standby period will count as working time if there is the 'a very short time ('a few minutes') required to resume the work in case of need'.[237] Regular workers follow the same logic; they are ready and available to do work as instructed, but it is for the employer to motivate and ensure performance of the worker whilst they are at work. Viewed in this light, time-off-task is essentially the default position of a worker at work – they are on-call and it is for the employer to ensure the resumption of work. Given that at any minute Amazon could call for the resumption of work during time-off-task, this satisfies the notion of working time under *Stadt Offenbach* and other on-call cases.

The third argument is that time-off-task cannot be regarded as rest time since it is not 'adequate rest'.[238] Whilst rest time is characterised as a residual category, it can be argued that there is a quality threshold contained within the WTD. Recital 5 states that 'all workers should have adequate rest periods' and Article 2(9) defines adequate rest as meaning 'regular rest periods … which are sufficiently long and continuous to ensure that, as a result of fatigue or other irregular working patterns, [workers] do not cause injury to themselves, to fellow workers or to others and that they do not damage their health, either in the short term or in the longer term.'

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[236] As done by the Commission's Interpretative Communication (n 220).

[237] As summarised by the Commission (n 220) Section 3, citing *Radiotelevizija* (n 210) para 48 and *Stadt Offenbach* (n 212) para 47.

[238] WTD, Recital 5; WTD, Article 2(9).

There is limited CJEU case law on the notion of 'adequate rest'.[239] The main comments come from *Jaeger,* which appeared to add to the threshold in Article 2(9) by stating that adequate rest must be 'effective' and 'preventive in nature'.[240] This was reiterated by Advocate General Bot in *Tyco,*[241] but arguably rejected by Advocate General Pitruzzella in *Radiotelevizija,* who stated that adequate rest was 'limited to' to definition in Article 2(9) WTD.[242] There are other references in the Opinions and case law which refer to 'effective rest',[243] 'proper' rest[244] and 'quality' rest,[245] but these are not linked to the concept of adequate rest in Article 2(9).

How 'adequate rest' might be used in the future is therefore speculative. However, for the purposes of time-off-task, there is scope to argue that it cannot be counted as rest time because it fails to meet the threshold of providing 'adequate rest'. The short seconds or minutes here or there which are recorded as time-off-task would not provide 'effective' or 'preventive' rest for the worker, as outlined in *Jaeger.* In light of the inadequacy of the rest, it arguably could not be classified as rest time.

The final line of argument is that classifying time-off-task as rest time would interfere with a worker's right to 'free time', which the CJEU has closely protected.

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[239] As acknowledged in Commission (220). The Commission argues that adequate rest in the WTD is relevant to the derogations in Article 20 and 21 WTD, addressing those workers not covered by Articles 3 – 5 WTD. However, arguably this is a restrictive interpretation, given that the concept of 'adequate rest' should apply to 'all workers' under Recital 5.

[240] *Jaeger* (n 212) para 92.

[241] AG Bot in *Tyco* (n 219) para 25.

[242] AG Pitruzzella in *Radiotelevizija* (n 211) para 86.

[243] AG Pitruzzella in *Radiotelevizija* (n 211) para 123; AG Pitruzzella in *Stadt Offenbach* (n 211) para 114.

[244] AG Pitruzzella in *Stadt Offenbach* (n 211) para 82.

[245] Case C-518/15 *Ville de Nivelles v Rudy Matzak* [2018] ECLI:EU:C:2017:619, Opinion of AG Sharpston 57, of which AG Pitruzzella critiques in *Radiotelevizija* (n 211) and *Stadt Offenbach* (n 211).

The CJEU insists that there are two mutually exclusive types of time: working time and rest time.[246] Yet, it clear from case law that there are different types of 'rest'. There are rest breaks conducted at work (captured in Article 4 WTD), and there is rest *outside of work* (captured in Articles 3, 5, 6, and 7 WTD). The CJEU describes rest outside of work as the 'freedom to manage the time during which [the workers'] professional services are not required' and as time to 'pursue his or her personal and social interests' without 'constraint' imposed by the employer. [247] This is 'free time',[248] or unconstrained time outside of work. It clearly differs from rest breaks taken *during* the working day, since taking lunch or 20-minute break does not provide the same freedom as free time *outside of work.*

The CJEU has been critical of 'constraints' on this free time imposed by employers, as seen in its case law on on-call time.[249] Following this, it could be argued that Amazon's time-off-task amounts to a constraint on workers' freedom to pursue social and personal interests outside of work.

By classifying time-off-task as rest time, it could extend the overall hours required to work during the shift. Whilst it does not appear that Amazon uses time-off-task in this manner, there are instances of employers deploying algorithmic

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[246] This phrase is reiterated in most CJEU cases on Article 2(1) WTD: see *SIMAP* (n 212) para 47 for an early example.

[247] *Radiotelevizija* (n 210) para 36-37. Other examples include *Matzak* (n 212) para 63 which refers to as time which a worker can 'devote himself to his personal and social interests'; *SIMAP* (n 212) para 50 refers to it as time where workers 'may manage their time with fewer constraints and pursue their own interests'; *Jaeger* (n 212) para 65 refers to it as the 'freedom to manage the time during which his professional services are not required' and refers to constraints on 'family and social environment'. *Dublin City Council* (n 212) para 38 refers to it time which the work has 'freely to manage … during which his or her professional services are not required and to pursue his or her own interests'.

[248] AG Pitruzzella in *Radiotelevizija* (n 211) para 128. The referring court's question also labels this rest time as 'free time'.

[249] See footnote 212.

management to record time-off-task and then deducting it from the overall hours worked.[250] This has the effect of extending the workers' shift beyond that initially scheduled. This means that rest breaks taken during the day under Article 4 have a constraining effect on rest time outside of work under Articles 3, 5, 6, and 7.

This notion was put to the CJEU in *BX,* where the referring court asked whether the classification of mandatory training time conducted outside of working hours as 'rest time' would interfere with the full and free exercise of the right to rest contained in Article 31 Charter of Fundamental Rights (Charter) combined with Articles 2, 3, 5 and 6 WTD. Since the CJEU did not regard vocational training as rest time, it did not need to address this question. However, it suggests that there is scope to argue that workers have a right to free time outside of work, and that construing certain periods as rest time can infringe this. The argument would therefore be that the use of time-off-task to interfere with workers' unconstrained time outside of work would not be lawful, particularly given that the worker is the 'weaker party', and thus their 'free' time is in greater need of protection.[251]

In light of these four arguments, it can be argued that time-off-task should be regarded as working time.

Role of the Humanisation of Work Principle

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[250] Javier Sánchez-Monedero and Lina Dencik, 'The Datafication of the Workplace' (DATAJUSTICE 2019).

[251] The CJEU regularly refers to the fact that worker is weaker party in its WTD case law, see *Academia di Studii* (n 228) para 51; Case C-55/18 *CCOO v Deutsche Bank SAE* [2019] ECLI:EU:C:2019:402, para 44; *BX* (n 213) para 47.

So far, this section has shown two sides of an opposing argument: whether time-off-task should be classified as working time or rest time. Much of the discussion has relied upon speculative, abstract concepts of working time to address the issue. By interpreting the definitions in Article 2 WTD in light of the general principle of adapting work to the worker in Article 13 WTD, however, the issue becomes simpler.

One of the central functions of a general principle is to act as a constitutional aid for the interpretation of EU law by the CJEU and national courts.[252] The CJEU has relied upon general principles to interpret other provisions of EU law in different areas, including the interpretation of agricultural regulations,[253] staff regulations,[254] the Commission's investigative powers,[255] and employment directives.[256] As Tridimas explains, recourse to general principles as an aid to interpretation is derived from the principle of the hierarchy of norms, where lower norms should be interpreted in compatibility with higher norms.[257] It can therefore be argued that Article 2 WTD ought to be interpreted in light of the humanisation of work principle.

[252] As discussed in Chapter 4 and outlined in Päivi Neuvonen and Katja Ziegler, 'General Principles in the EU Legal Order: Past, Present and Future Directions' in Katja Ziegler and others (eds), *Research Handbook on General Principles in EU Law* (Elgar Publishing 2022).

[253] Case C-201/85 *Marthe Klensch and Others v Secrétaire d'État à l'Agriculture et à la Viticulture* [1986] ECLI:EU:C:1986:439, relying on the general principle of equal treatment; Case C-5/88 *Wachauf v Bundesamt für Ernährung und Forstwirtschaft* [1989] ECLI:EU:C:1989:321, para 22 which held that where 'community regulations in question accordingly leave the competent national authorities a sufficiently wide margin of appreciation', they should 'apply those rules in a manner consistent with the requirements of the protection of fundamental rights'. See Takis Tridimas, *The General Principles of EU Law* (2nd Edition, OUP 2007) 29 for more examples.

[254] Case T-93/94 *Michael Becker v Court of Auditors of the European Communities* [1996] ECLI:EU:T:1996:30, para 26 stated that 'the Staff Regulations must be interpreted in such a way as to ensure that there is no breach of a superior rule of law', applying the principle of equal treatment.

[255] Case C-46/87 *Hoechst AG v Commission of the European Communities* [1989] ECLI:EU:C:1989:337, para 12 which states that 'the nature and scope of the Commission's powers of investigation… cannot be interpreted in such a way as to give rise to results which are incompatible with the general principles of Community law and in particular with fundamental rights', applying the fundamental principle of legal representative, the right to defence and the inviolability of the home.

[256] C-13/94 *P v S and Cornwall County Council* [1996] ECLI:EU:C:1996:170, relying on the principle of equal treatment, and arguably principle of dignity, to interpret Art 5(1) Framework Directive for Equal Treatment in Employment.

[257] Tridimas (n 253) 30.

As discussed, the humanisation principle requires that work organisation be adapted to human needs: work must be *humanised,* workers cannot be treated as robots. Intrinsic to the notion of a human worker, rather than a robot, is that one cannot be productive 24/7. Procrastinating, chatting with colleagues, making mistakes – this is the very nature of being a human. It is inevitable that one will spend time-off-task during the working day.

In light of this, it can be argued that interpreting working time under Article 2(1) as *not* including time-off-task would undermine the general principle of humanising work. If procrastination (ie., time spent off-task) did not qualify as working time, then it would hold workers to the productivity standard of a robot, which is the antithesis of the humanisation principle.

Recourse to the humanisation principle would also aid the CJEU in justifying the classification of time-off-task as working time. In previous cases, the CJEU has validated its teleological interpretations of working time by reference to the WTD's health and safety aims.[258] This approach, however, is dissatisfying when applied to time-off-task. It is stretched to claim that time spent taking a phone call or gossiping should be regarded as working time because it pursues the WTD's health and safety aims. Far more convincing is to state that time-off-task is working time because it pursues the objective of *humanising* work, by preventing workers from being treated as machines. Whilst this is tied up with health and safety aims, it is a more precise articulation of the justification.

[258] See, for example, *BX* (n 213) and *Deutsche Bank* (n 251).

Lastly, as a general 'principle' rather than a right, the humanisation principle inevitably involves an element of proportionality. The CJEU could still interpret certain amounts of time-off-task, for example an afternoon spent off-task, as *not* working time whilst being compliant with the humanisation principle. Humanising work entails a balance between the workers' needs and the employer's, and it remains with the court to decide if the balance has been met by its interpretation of working time in each specific case.

Hence, to conclude this section, Amazon's use of time-off-task could pose a novel legal challenge for the CJEU – one which has potentially major ramifications for its existing jurisprudence on working time and rest time. Using the humanisation principle as an interpretive guiding principle, however, could significantly assist in illuminating the debate, ultimately curtailing the deployment of contested time for purposes running contrary to human needs.

Conclusion

This chapter has demonstrated how Amazon crafts time in its fulfilment centres to ensure that its tight next day delivery targets are met. Using all four mechanisms of algorithmic time – contested time, algorithmic pace-rates, dynamic scheduling and temporal discipline – Amazon is able to reconfigure time in a subversive, highly effective manner. Its 'pervasive emphasis on speed'[259] has resulted in a workplace where 'time is always counting against' you.[260] From the rapid pace of the task, to

[259] HELP Committee (n 7) 40.

[260] HELP Committee (n 7) 39, quoting an Amazon worker.

disciplining for being off-task, Amazon has been repeatedly criticised for treating its workers as robots or machines.

Similar concerns were raised during the humanisation of work movement fifty years ago. Fears that the industrial worker had become 'a sort of robot, repeating the same gestures throughout the day, keeping up with the machine's relentless pace' abounded.[261] These fears cumulated into legislative action, embedding the humanisation principle into EU labour law.

Rather than lying dormant, this chapter has highlighted how the humanisation principle could be used to address algorithmic time at Amazon today. Focusing specifically on algorithmic pace-rates and contested time, this chapter has shown that the principle of adapting work to *human needs* could offer significant protection against regimes which make the worker 'part of the machine'.[262]

This thesis now turns to the final 'application' chapter which applies Article 13 to the remaining type of algorithmic time to be examined – dynamic scheduling. Compared to this chapter which focused on a widely criticised case study, the following chapter relies upon a case study which has been promoted as adopting *humanised* scheduling practices.

[261] ILO, 'Report V (1) Occupational Health Services' (ILC 70th session, 1984) 13.

[262] US Senate (n 83) 28000, quote from Senator Stevenson introducing the Worker Alienation Bill 1972 to counteract jobs that 'have been designed to be so routine that the worker is almost part of the machine'.

Chapter 7

Applying Article 13 to Dynamic Scheduling in Healthcare Work

Introduction

Algorithmic scheduling software has been described as having 'radical potential' in elevating the quality of work.[1] At the same time, algorithmic scheduling software has been accused of plunging workers into a 'chronic crisis over the clock' with erratic hours and little stability.[2] This chapter examines the use of such software – which is a type of dynamic scheduling as outlined in Chapter 1 – in the specific context of healthcare.

The overarching discussion within this chapter is whether the inclusion of worker preferences for certain shifts *within* the scheduling algorithm is a legal requirement under Article 13 WTD or a managerial choice. As it stands, worker preferences for shifts are generally included within the healthcare sector's deployment of algorithmic scheduling.[3] This, however, is not a phenomenon found in all sectors: computing literature has predominantly treated scheduling as an 'optimisation problem

[1] Carrie Gleason and Susan Lambert 'Uncertainty by the Hour' (Position Paper, Future of Work Project 2014) 3.

[2] Jodi Kantor, 'Working Anything but 9 to 5' *The New York Times* (13 August 2014) <https://www.nytimes.com/interactive/2014/08/13/us/starbucks-workers-scheduling-hours.html> accessed 31 July 2025.

[3] Edmund Burke and others state that 'even in the early days of automated nurse rostering… there was an awareness of requirements other than just measurable optimisation objectives. Automated schedule generation needs to be flexible, to consider personal preferences, patient satisfaction, and human effort' in 'The State of the Art of Nurse Rostering' (2004) 7 Journal of Scheduling 444, 447. For further examples, see footnote 20.

with little attention given to the preferences, thoughts and feelings' of the employees involved.[4]

The chapter first outlines the case study of dynamic scheduling within the healthcare sector. It then analyses whether these practices are in accordance with Article 13 WTD, ultimately arguing that algorithmic scheduling software which does *not* allow for the inclusion of worker preferences may fall foul of the obligation to adapt work to the worker. The chapter then goes on to examine how two other EU instruments – the Transparent and Predictable Working Conditions Directive[5] and the GDPR[6] – might also regulate the employers' use of algorithmic scheduling software. It is argued that these instruments, when interpreted in conjunction with the humanisation principle, may well require employers to incorporate worker preferences within the use of algorithmic scheduling software. Of particular note is how the humanisation principle might shape the *implementation* of the Transparent and Predictable Working Conditions Directive, given that the wide discretion for transposition must be done in conformity with general principles.

With the rise in algorithmic scheduling software, there are increasing calls for employers to adopt a 'human-centred' approach[7] to this technology by

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[4] Alarith Uhde and others, 'Fairness and Decision-Making in Collaborative Shift Scheduling Systems'(CHI Conference, Honolulu, 25 April 2020) 1. For further examples, see footnote 22.

[5] Directive (EU) 2019/1152 of 20 June 2019 on transparent and predictable working conditions in the European Union [2019] OJ L186.

[6] Regulation 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data [2016] OJ L 119/1.

[7] Charlotte Haid and others, 'Accommodating Employee Preferences in Algorithmic Worker-Workplace Allocation' (Human Factors in Management and Leadership 2022) 80; Charlotte Haid and others, 'Development of Human-Centered Scheduling in Logistics' [2024] 20 Logistics Journal.

'accommodating' workers' needs.[8] This chapter ultimately argues that employers are *already* required to adopt this approach under the long-standing obligation to humanise working time, and highlights ways in which the potential of the humanisation principle can be realised.

Overview of Dynamic Scheduling in Healthcare Work

In Chapter 1, the concept of 'dynamic scheduling' was outlined. It is one of the four types of algorithmic time and refers broadly to the use of algorithmic management to set work schedules in response to various, often real-time, data inputs.

Algorithmic scheduling software is an example of dynamic scheduling. As described in Chapter 1, the software is a tool which employers can use to automatically generate work schedules. Rather than relying on human managers to set the shift rota, this is outsourced to semi-automated or fully automated algorithmic software.

The deployment of algorithmic scheduling software has had a major effect on the healthcare sector, where scheduling has been a long-standing challenge.[9] Schedules must balance competing factors, from fluctuating patients with varying levels of urgent care needs, to ensuring around the clock care, managing labour budgets, matching staff

[8] Kantor (n 2).

[9] Matthew Willis and others, 'The Future of Healthcare: Computerisation, Automation and General Practice Services' (The Health Foundation University of Oxford 2020); Herlinde Wynendaele and others, 'Systematic Review: What Is the Impact of Self-Scheduling on the Patient, Nurse and Organization?' (2021) 77 Journal of Advanced Nursing 47; Fridolin Kerr and Yvonne Timony, 'Review of an Automated Rostering System from a Nurse Manager's Perspective' (2009) 146 Studies in Health Technology and Informatics 96. Many acknowledge that hospital scheduling has been a longstanding area of complex research: Edmund Burke and Tim Curtois, 'New Approaches to Nurse Rostering Benchmark Instances' (2014) 237 European Journal of Operational Research 71; Andreas Ernst and others, 'Staff Scheduling and Rostering: A Review of Applications, Methods and Models' (2004) 153 European Journal of Operational Research 3; Elina Rönnberg and Torbjörn Larsson, 'Automating the Self-Scheduling Process of Nurses in Swedish Healthcare: A Pilot Study' [2015] Health Care Management Science.

skillsets with tasks, factoring in handover time, complying with statutory working time limits, and many others.[10] Organising effective schedules is therefore a major undertaking, especially against a backdrop of low levels of healthcare staff retention often driven by a lack of work-life balance.[11]

Software scheduling systems, or 'e-rosters', have thus been increasingly heralded as an effective means of managing healthcare schedules.[12] Most NHS trusts use e-rostering, and the Carter Review into the NHS recommended more effective use of the technology, citing examples of NHS trusts which had reduced their reliance upon agency or bank workers who have higher hourly pay rates than regular staff.[13] Other studies have highlighted the benefits of e-rostering over traditional rostering, including the faster processing of staff rotas,[14] better matching of staff skillsets to available tasks[15] and more accurate payroll information.[16] E-rostering has also allowed for real-

[10] Examples of factors are listed in Ernst and others (n 9); Burke and Curtois (n 9); Kerr and Timony (n 9); Wynendaele and others (n 9); Rönnberg and Larsson (n 9).

[11] Wynendaele and others (n 9); Uhde and others (n 4); Martina O'Connell and others, 'The Impact of Electronic and Self-Rostering Systems on Healthcare Organisations and Healthcare Workers: A Mixed-Method Systematic Review' (2024) 33 Journal of Clinical Nursing 2374.

[12] O'Connell and others (n 11); Kerr and Timony (n 9); Burke and others (n 3); Northern Lincolnshire and Goole NHS Foundation Trust, 'New digital shift scheduling system gives staff gift of time' (13 Aug 2021) <https://www.nlg.nhs.uk/news/new-digital-shift-scheduling-system-gives-staff-gift-of-time/> accessed 8 November 2025; NHS England, 'NHS AI expansion to help tackle missed appointments and improve waiting times' (14 March 2024) <https://www.england.nhs.uk/2024/03/nhs-ai-expansion-to-help-tackle-missed-appointments-and-improve-waiting-times/> accessed 8 November 2025; Zahoor Soomro and others, 'Critical Success Factors in Implementing an e-Rostering System in a Healthcare Organisation' (2018) 31 Health Services Management Research 130.

[13] O'Connnell and others (n 11); Lord Patrick Carter, 'Operational productivity and performance in English NHS acute hospitals: Unwarranted variations' (Department of Health 2016) 23.

[14] Soomro and others (n 12); Wynendaele and others (n 9).

[15] O'Connell and others (n 11).

[16] O'Connell and others (n 11).

time reactions to staff absences,[17] advanced notice of shifts,[18] increased transparency, and the smoother facilitation of shift-swaps.[19]

What is particularly interesting in the computing literature on e-rostering within the healthcare profession has been the focus on including worker preferences within the algorithm.[20] There is a default assumption that scheduling in healthcare is most effective when combined with 'preference scheduling' (which is where worker preferences for shifts are factored into the scheduling algorithm).[21] This contrasts with literature in other sectors which do not share the same default position.[22]

The debates in healthcare scheduling focus more notably on the 'extreme form' of preference scheduling – self-rostering – which is where workers themselves take responsibility for the schedule.[23] There are different ways in which this can be done, but it generally involves staff inputting their shift preferences into the system, which is

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[17] Doc Adobe, a scheduling software provider for the NHS, states it has a simple drag and drop functionality that allows NHS providers to deploy staff in real-time: see Doc Adobe, 'Dynamic Scheduling' <https://docabode.com/product/nhs-dynamic-scheduling/> accessed 11 November 2025.

[18] HealthRota, a software provider for the NHS, claims that the use of e-rostering in some NHS trusts lead to doctors knowing their shifts up to a year in advance, see HealthRota, 'Improving Staff Rentention' <https://www.healthrota.co.uk/case-studies/improving-staff-retention-annualised-hours-rotas-for-emergency-department-doctors/> accessed 11 November 2025.

[19] Kerr and Timony (n 9); O'Connell and others (n 11).

[20] See Burke and others (n 3); Ernst and others (n 9); Kerr and Timony (n 9); Lena Wolbeck '*Fairness aspects in personnel scheduling'* (Discussion Paper, Freie Universität Berlin 2019); and Burke and Courtis (n 9).

[21] Rönnberg and Larsson (n 9) 37.

[22] Ernst and others (n 9) compare rostering strategies across industries and highlight that the issues in nursing rostering include accommodating a range of employee preferences but staff preferences are not incorporated into call centre or hospitality literature in the same way; Haid and others' (n 7 (2022)) 81-82 literature review on algorithmic scheduling of tasks found that 'traditional allocation systems have hardly taken employee preferences into consideration' and argued that allocation systems mostly 'optimize by cost to achieve short-term savings' which 'ignores long term consequences' for employees. Similarly, Haid and others (n 7 (2024)) 3 argue that the current literature on shift planning in production and logistics 'lacks a broad human-centred approach' where worker preferences are of central importance in the algorithmic model. For examples of algorithmic scheduling literature in retail which does not appear to include worker preferences, see Peeyush Pandey and others, 'Staffing, Tour Scheduling, and Re-Planning in Specialty Stores with Regular and on-Call Workers' (2025) 204 Computers & Industrial Engineering 111089; Özgür Kabak and others, 'Efficient Shift Scheduling in the Retail Sector through Two-Stage Optimization' (2008) 184 European Journal of Operational Research 76.

[23] Rönnberg and Larsson (n 9) 37.

then incorporated into the algorithm, combined with an ability to digitally swap shifts and negotiate after the initial schedule is released. Whilst advantageous, self-rostering is not without challenges. Traditional self-rostering, which emphasises staff negotiations, can be time consuming, emotionally demanding and lead to issues where only the staff members with the most personal connections or negotiation ability secure shift changes.[24] This critique is also true of e-rostering practices which allow for shift negotiations to occur after the initial schedule is set.

The second major area of debate in healthcare scheduling, particularly in regards to e-rostering, centres around issues of fairness in the allocation of shift preferences. Udhe and others' study examined the difficulties faced in designing an algorithm that can make 'fair' judgments over which healthcare worker's shift preference should met in instances of conflicts.[25] For example, if one worker has a wedding, but the other has a family holiday, then how can the algorithm decide which staff member should be prioritised? The study highlights how most software is designed based on the 'equality norm', i.e., the fair distribution of shifts means every worker gets granted the same number of preferences. In the wedding vs. family holiday example, this would mean that the worker who had had the least number of preferences prioritised previously would be granted the time off. However, the findings from interviews and surveys with healthcare staff suggested that the 'needs norm' was also essential in dealing with scheduling conflicts fairly. This is when the individual's need is examined relative to the other. [26] Taking the earlier example, if it was the worker's

[24] Rönnberg and Larsson (n 9); Wynendaele and others (n 9); Uhde and others (n 4).

[25] Udhe and others (n 4); Wolbeck (n 20) also looks at fairness in the allocation of shift preferences.

[26] Udhe and others (n 4) also identify the 'equity norm' as another approach to fairness (ie., even if one worker has had more preferences granted under the equality norm, they may need more time off for childcare as a single parent, for example).

own wedding, then the application of the equality norm would be inappropriate, as most would argue that this shift preference is more important relative to the other worker's request for a family holiday.

The use of algorithmic software to make these value judgments over what is 'fair' is clearly challenging. Not only is programming this difficult, there may also be unease at the notion of an automated software taking decisions over such sensitive personal matters. As one worker interviewed said, 'I don't like the idea to have an algorithm decide about my free time' [sic].[27]

This then ties into a further challenge identified in Udhe and others' study which concerns the processing of private personal data in healthcare e-rostering. One of the ways of achieving fairness among shift allocation is transparency between workers, referred to by the study as 'informational justice'.[28] Knowing the reason for why the other worker's preference was prioritised limits resentment within workforce teams. The issue with this, however, is that workers may not want this information publicised, or at least submitted through a large data processing software. The issue is reinforced by the use of scheduling software at a large scale: one of the major benefits of deploying the software within the healthcare sector is that it can be used to coordinate across departments, or even hospitals, in a way which would not be possible through traditional scheduling.[29] The flipside of this, however, is that a worker's personal preferences for shifts may be shared widely with limited oversight.

[27] Udhe and others (n 4) 8.

[28] Udhe and others (n 4) 2.

[29] For example, Rotageek, a scheduling software provider, highlighted this as a major benefit of its software enrolment at an NHS Trust, see Rotageek, 'Ashford & St Peters Hospital Trust' <https://www.rotageek.com/customers/ashford-and-st-peters-hospital-trust> accessed 11 November 2025.

A final challenge to note regarding worker preferences in algorithmic scheduling software is the *individualisation* of preferences. As Ernst and others remark, the move away from collective bargaining practices which may promote team preferences in shifts has resulted in new models which accommodate individual worker needs, thus adding to the complexity of rostering algorithms.[30]

In summary, algorithmic scheduling software in the hospital setting has major advantages which are already being realised, particularly when coupled with worker preferences. However, challenges over ensuring 'fairness' in the allocation of individual shift preferences remain.

Comparison can be made with other sectors that have faced considerable criticism for their deployment of scheduling software – notably retail[31] and hospitality[32] – where there has been a reported lack of consideration of worker shift preferences. Some of the most high-profile criticisms of algorithmic scheduling software came after the New York Times coverage of Starbucks' use of the scheduling software Kronos (now UKG) which documented the 'chaos' caused by unpredictable schedules.[33] After its release, there was a widespread campaign to restrict the use of algorithmic scheduling software in this manner,[34] however, the outcome appears to have been

[30] Ernst and others (n 9).

[31] Stephanie Luce and Naoki Fujita, 'Discounted Jobs: How Retailers Sell Workers Short' (Murphy Institute University of New York and Retail Action Project 2012); Annette Bernhardt and others, 'Data and Algorithms at Work: The Case for Worker Technology Rights' (Center for Labor Research and Education 2021; Steven Greenhouse, 'A Part-Time Life, as Hours Shrink and Shift for American Workers'. *The New York Times* (27 October 2012) <https://www.nytimes.com/2012/10/28/business/a-part-time-life-as-hours-shrink-and-shift-for-american-workers.html> accessed 11 November 2025.

[32] Kantor (n 2); Bernhardt (n 31).

[33] Kantor (2).

[34] Jodi Kantor, 'Starbucks to Revise Policies to End Irregular Schedules for Its 130,000 Baristas' *The New York Times* (14 August 2014); Caroline O'Donovan, 'After A Wave Of Bad Press, This Controversial Software Company Is Making Changes' (*BuzzFeed News*, 2 June 2015) < https://www.buzzfeednews.com/article/carolineodonovan/kronos-makes-changes-to-software-accused-of-producing-bad-sc>; The Seattle Times contrasted the company's policy of treating workers through the 'lens of humanity' with its use of just-in-time scheduling software: Ángel González, 'Starbucks Vows to Change Unpredictable Barista Work Schedules' *The Seattle Times* (14 August 2014) < https://www.seattletimes.com/business/starbucks-vows-to-change-unpredictable-barista-work-

minimal.[35] Other criticisms of algorithmic scheduling software were outlined in Chapter 1.

The healthcare sector's use of such scheduling software is therefore an intriguing case study, in that it by default to includes worker preferences within the algorithm (whether these preferences are then adopted, however, is another matter). Given that the healthcare sector is traditionally better unionised with more stable employment contracts than other sectors,[36] it is perhaps not surprising, as unions will have higher bargaining power on issues such as the inclusion of worker preferences within scheduling systems.

What is interesting, however, is whether the inclusion of worker preferences in algorithmic scheduling software is regarded as exclusively an issue of managerial prerogative to be governed through industrial relations, or if this is something that is legally required. Many of the scheduling software providers outline a substantial list of factors that employers can incorporate into the scheduling algorithm, from operating hours to expected demand.[37] Typically within this list is the ability to incorporate workers' shift preferences.[38] The question to be asked therefore is whether this choice is left exclusively to an employers' discretion, or if it is instead governed by the humanisation principle. It has been noted that algorithmic scheduling software is

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schedules/>; Lauren Weber, 'Retailers Under Fire for Work Schedules' *Wall Street Journal* (13 April 2015) < https://www.wsj.com/articles/retailers-under-fire-for-work-schedules-1428890401> all accessed 11 November 2025.

[35] Noam Scheiber, 'Starbucks Falls Short After Pledging Better Labor Practices' *The New York Times* (23 September 2015) < https://www.nytimes.com/2015/09/24/business/starbucks-falls-short-after-pledging-better-labor-practices.html> accessed 11 November 2025.

[36] See Office for National Statistics, 'Trade Union Membership, UK, 1995 to 2024: Statistical Bulletin' (Department for Business & Trade).

[37] For example, Rotageek states that employers can choose from 'hundreds of variables including staff skills, availability, preferences, fairness and pre-defined rules' in 'Auto Scheduling' <https://www.rotageek.com/solutions/rota-auto-scheduling/> ; for another example, see Virto Software, 'Employee Scheduling Software: Simplify Your Workforce Management' < https://www.virtosoftware.com/team/employee-scheduling-software/> both accessed 5 October 2025.

[38] See Rotageek (n 38) and Virto Software (n 38) for examples.

designed to be sold to companies – it is ‘shaped to serve the needs of management’[39] – and unless there is regulation over how it to be used, employers have arguably limited incentive to prioritise worker preferences.[40]

The following analysis takes up this line of enquiry. It firstly examines whether the inclusion of worker preferences within algorithmic scheduling software, as generally seen in the healthcare sector, is required under Article 13 WTD. The chapter then goes on to examine if this requirement can also be found in other EU instruments, highlighting how the Transparent and Predictable Working Conditions Directive and the GDPR may also reinforce this when read in conjunction with the humanisation principle.

Worker Shift Preferences and Article 13 WTD

In his recent article, Kártyás argues that Article 13 WTD is the key EU law provision for addressing the specific issue of including worker shift preferences within algorithmic scheduling software.[41] This aligns with the analysis conducted in Chapter 2, which highlighted Article 13 WTD as the central provision at an EU level capable of substantively addressing scheduling at work. Whilst other instruments focus predominantly on procedural rules, risk assessments or the standard model of working time, Article 13 WTD sets normative guidance on ‘patterns’ of time. It is therefore the starting point for analysing worker preferences within algorithmic scheduling software.

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[39] O’Donovan (n 34).

[40] Luce and Fujita (n 31).

[41] Gábor Kártyás, ‘Less Human but More Effective?’ (2024) Pázmány Law Review 67.

Kártyás then goes on to state that Article 13 WTD likely requires employers to incorporate worker shift preferences within scheduling algorithms, since the provision 'sets the priority of the human perspective over the economic considerations' in scheduling.[42]

This section investigates this claim in depth. It depicts how the humanisation principle might be interpreted, were a preliminary reference to arise before the CJEU requesting an interpretation of whether an employer is precluded from using algorithmic scheduling software which does not incorporate worker shift preferences under Article 13 WTD.[43]

As with the previous two 'application' chapters, this chapter adopts the CJEU's standard approach for examining EU principles: determining first if there is an infringement of the principle, and secondly whether that infringement can be justified by recourse to a legitimate aim pursued in a proportionate (suitable and necessary) manner.[44]

Infringement

Article 13 WTD, as discussed before, requires Member States to 'take the measures necessary to ensure that an employer who intends to organise work according to a certain pattern takes account of the general principle of adapting work to the worker'.

[42] Kártyás (n 41) 76.

[43] In analogy with cases like Case C-585/19 *Academia de Studii Economice din Bucureşti v Organismul Intermediar* [2021] ECLI:EU:C:2021:210; Joined cases C-131/04 and C-257/04 *C D Robinson-Steele v R D Retail Services Ltd* [2006] ECLI:EU:C:2006:177; and C-909/19 *BX v Unitatea Administrativ Teritorială D* [2021] ECLI:EU:C:2021:89 which examine whether an employer's practice is compatible with a directive. See Chapter 5 for more detail.

[44] For evidence of this approach, see footnote 208 in Chapter 3.

This means that working time must be adapted to the human needs of workers through worker input.

As a starting point, it could quite simply be argued that an employer who intends to organise shift patterns through algorithmic scheduling software must take into account the adaptation of the schedule to the *worker*. Thus, a scheduling algorithm which *exclusively* considers the undertaking's needs, without incorporation of workers' shift preferences, is antithetical to the humanisation principle. This is because the schedule is clearly not in conformity with the balancing of the workers' and employer's needs, as required under Article 13 WTD.

The immediate counter to this argument, however, is that the exclusion of worker preferences from the scheduling algorithm cannot constitute an infringement of the humanisation principle because preferences for certain shifts cannot reasonably be regarded as 'human needs'. Shift preferences can better be characterised as lifestyle preferences or matters of convenience. The scheduling software may be adapted to workers' needs in other ways, such as ensuring the correct matching of skillsets with tasks or programming in set breaktimes. It could be argued that worker preferences go beyond the baseline adaptation required by the humanisation principle.

Unpacking this counterclaim further, however, it appears to lack support. Turning to the origins of the humanisation principle, as outlined in Chapter 3, it was clear that the principle was introduced as a way of 'adapting work schedules to social needs'.[45] Concern was placed on the increased operating hours of factories and the

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[45] ILO, 'Information note on the activities of the International Labour Organisation concerning the humanisation of conditions of work' (ILO No. 32 Geneva, 1975) 1.

variable shifts:[46] it was recognised that 'many workers cannot endure shift work because of its social and physiological implications'.[47] The humanisation principle's application to working time was introduced as a way of addressing this. The idea, therefore, that human needs does not extend to workers preferences for certain shifts is not substantiated.

There is clear logic behind this position. Workers with variable schedules face vulnerabilities which are not shared by regular workers.[48] The ability of a shift worker to pursue a life *outside of work* is dependent upon humanised scheduling in a way which can be distinguished from standard workers – being able to attend key milestones, social events, and participate in community life is subject to a schedule which accommodates this. From the vantage point of a shift worker, being granted their preferences in shift choices is not a workplace perk or matter of convenience, but critical to their engagement in society. This is why the humanisation principle, which ensures that the human needs are not dismissed, offers such an important baseline protection.

Furthermore, viewing human needs as inclusive of worker preferences for certain shifts is in keeping with the CJEU's existing case law. The CJEU has consistently emphasised the importance of workers' 'freedom to manage the time during which [their] professional services are not required' in which they can 'pursue

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[46] Commission, 'Proposal for a Council Directive on Certain Aspects of the Organization of Working Time' (Explanatory Memorandum) COM (90) 317 final.

[47] ILO, 'Record of Proceedings' (ILC 67th Session, 1981) 30/3.

[48] The Transparent and Predictable Working Conditions Directive (n 5) even states in Recital 12 that workers with no guaranteed hours are 'particularly vulnerable'.

his or her personal and social interests' without 'constraint' imposed by the employer.[49] This reflects the gravity that the CJEU has placed on the right to paid annual leave as a particularly important and essential principle of EU social law which is enshrined as a fundamental right.[50] In *UK v Council*, the CJEU confirmed that the purpose of the WTD was to ensure the physical, mental and social wellbeing of workers.[51] The protection and importance of workers' ability to pursue a life outside of work is therefore embedded within the EU *social acquis,* as not just something that is desirable but of essential significance. The humanisation principle is the tantamount expression of this in the context of scheduling: it asserts that these needs must be taken into account in the organisation of shifts. It can therefore be argued that an employer who uses algorithmic scheduling software but does not incorporate worker preferences within the algorithm is acting in contrast to the humanisation principle.

This infringement of the principle would be further supported by the fact that the *specific* needs of workers would also not be considered within the scheduling system, despite this being a core strand of the humanisation principle. Working time must be adapted to the specific needs of workers, not just workers as a homogenous whole. Those with particular vulnerabilities or risks who need specific shift adaptations, for instance workers who need shifts organised around medical treatment, would need this to be incorporated into the scheduling algorithm. Failure to do so would amount to an infringement of the humanisation principle.

[49] Case C-344/19 *D J v Radiotelevizija Slovenija* [2021] ECLI:EU:C:2021:182, para 36. For other examples, see footnote 247 in Chapter 6.

[50] C-570/16 *Stadt Wuppertal v Maria Elisabeth Bauer and Volker Willmeroth v Martina Broßonn* [2018] ECLI:EU:C:2018:871.

[51] Case C-84/94 *United Kingdom of Great Britain and Northern Ireland v Council of the European Union* [1996] ECLI:EU:C:1996:431

Lastly, as identified in Chapter 3, the duty within Article 13 WTD is best discharged through the input of workers. Working time can only be truly adapted to their needs if they are consulted. The exclusion of worker preferences, however, vitiates one of the simplest ways in which workers could provide input into the algorithmic scheduling software.

Having outlined some preliminary arguments concerning the infringement of Article 13 WTD, whether such an infringement can be justified will now be examined.

Justification

To show that an infringement of humanisation principle is justified, such infringement must be done in response to a 'real need on the part of the undertaking' in a manner which is suitable and necessary to achieving that need.[52]

It can be argued that the exclusion of worker shift preferences from the scheduling algorithm is done to ensure the smooth operation of the undertaking. This is likely to qualify as a legitimate aim: the need to ensure optimal working schedules that satisfy factors like client demands whilst matching staff skillsets to both tasks and operating hours is intrinsic to the operation of an organisation.[53]

It could then be argued that the exclusion of worker preferences is a suitable means of ensuring the undertaking's smooth operation. Given that worker preferences are not critical to the operation of an undertaking, in the same way that guaranteeing

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[52] Case 170/84 *Bilka-Kaufhaus GmbH v Karin Weber von Hartz* [1986] ECLI:EU:C:1986:204, para 36.

[53] For example, the CJEU accepted 'commercial interests' as a legitimate aim in the context of data processing in Case C-621/22 *Koninklijke Nederlandse Lawn Tennisbond v Autoriteit Persoonsgegevens* [2024] ECLI:EU:C:2024:858. For detailed discussion of CJEU case law on legitimate aims, see Chapter 5.

shifts are filled or demand met, the exclusion can be considered suitable for ensuring the smooth operation. To find otherwise may well be unworkable: given that worker preferences are not core to the undertaking's scheduling needs, their inclusion could have disruptive effect on the workplace.

The counter argument to this, however, may be to argue that excluding worker preferences could, in the long run, disrupt the undertaking's smooth operation. Staff dissatisfaction at the lack of humanised scheduling – from being unable to attend weekly activities with certainty to missing out on planned holidays – could drive low retention rates and lead to high numbers of absences.[54]

Turning to the second limb of the proportionality test – whether the means (exclusion of shift preferences) is necessary for achieving the legitimate aim (smooth operation) – this asks if there are alternative ways in which the same outcome can be obtained.

It could be argued that excluding worker preferences from the scheduling algorithm is necessary because it avoids tensions over which shift requests should be granted in instances of conflict. An outright exclusion thus minimises any workplace tension between staff and avoids issues of having to fairly determine which preferences should be granted. Having to do so otherwise could be unworkable, and thus, disrupt the undertakings' smooth operation.

[54] As suggested by Joan Williams and others' study, who found that eliminating on call shifts and giving staff two weeks' notice of shifts in retail increase in median sales by 7% and increased labour productivity by 5% in 'Stable scheduling increases productivity and sales: The stable scheduling study' (University of California 2018); Millicent Nelson and Richard Tarpey also found that schedule satisfaction in healthcare can improve retention and recruitment rates in 'Work Scheduling Satisfaction and Work Life Balance for Nurses: The Perception of Organizational Justice' (2010) 6 Academy of Health Care Management Journal 25.

Contrary to this, however, it could be posited that the exclusion of shift preferences goes beyond what is necessary for achieving the undertaking's smooth operation. Incorporating shift preferences into a scheduling algorithm does not mean that those preferences are automatically granted. In much of the literature on worker preferences within healthcare scheduling, for instance, it is quite clear that staff expect there to be instances where their preferences cannot be met because the need for the hospital's smooth operation prevails.[55] The starting point, however, is that if all other factors being processed – like tasks required, demands, matching skillsets, staff availability – can be met whilst still accommodating the workers' shift preferences then there is no legitimate reason for *not* doing so. An outright exclusion of worker preferences therefore goes beyond what is necessary for achieving the aim of the undertaking's smooth operation, since the two are not mutually exclusive.

The difficulty becomes when there is no optimal schedule available which satisfies all the criteria. In such a scenario, the proportionality element of the humanisation principle comes to the fore. As the humanisation principle makes clear, workers' needs cannot be subordinated to purely economic considerations.[56] In times of conflict, therefore, the factors that are prioritised over worker preferences need to pursue a legitimate aim (not purely economic) in proportionate manner. What the humanisation principle provides is a guiding norm for scheduling which asserts the importance of workers' preferences in the determination of an optimal schedule.

[55] For examples, see Udhe and others (n 4); O'Connell and others (n 11); Burke and others (n 3).

[56] Based on the link between Recital 4 and Article 13 WTD, as drawn by the CJEU in Case C-84/94 *United Kingdom of Great Britain and Northern Ireland v Council of the European Union* [1996] ECLI:EU:C:1996:431, paras 28-29; and in the Opinion of AG Léger, paras 94–95, discussed in Chapter 3.

Having interrogated both sides of the debate, it can be argued that the outright exclusion of worker preferences in use of algorithmic scheduling software appears to be a disproportionate infringement of the humanisation principle. As Kártyás has stated, Article 13 WTD asserts that the worker is 'not only the subject of the employers' working time schedule, but his/her preferences shall be taken into account'.[57] In deploying new technology to set schedules, these preferences ought to be incorporated.

This section has therefore laid a roadmap for arguing that the decision to include workers' shift preferences within algorithmic scheduling software should not be exclusively left to the managerial prerogative, but should instead be subject to the humanisation principle. The following sections build upon this by exploring whether an obligation to consider worker preferences in scheduling algorithms can be found in *other* EU instruments, when read in light of the humanisation principle. It begins with an examination of how the humanisation principle might shape the *implementation* of the Transparent and Predictable Working Conditions Directive so as to required greater consideration of worker preferences.

Worker Shift Preferences and the Transparent and Predictable Working Conditions Directive

Under the Transparent and Predictable Working Conditions Directive as it stands, there is little requirement for an employer to incorporate worker shift preferences within its algorithmic scheduling software. This is because the key provisions which could address this – information on schedules, the right to refuse shifts or request predictable

[57] Kártyás (n 41) 76.

working conditions, and the introduction of national measures to tackle on-demand contracts – do not on their own appear to require employers to incorporate worker preferences.

This is indicative of the wider criticisms of the Transparent and Predictable Working Conditions Directive, which were discussed in Chapter 2. Whilst the directive was introduced as the EU's pioneering instrument on working time scheduling – tackling issues of precarity,[58] instability and unfair practices[59] – it ultimately fell short in meeting these expectations. Instead, much of the directive's impact is dependent upon a worker-centric implementation by Member States.

However, if interpreted in conjunction with the humanisation of work principle, the provisions of the Transparent and Predictable Working Conditions Directive may have greater impact. As a general principle of EU law, the humanisation principle performs several roles. The most traditional role of a general principle is to provide an 'auxiliary' and 'hermeneutic role' with regards to other provisions of EU law.[60] As discussed in Chapter 6, the CJEU has relied upon general principles to interpret other provisions of EU law under the hierarchy of norms.[61] The Transparent and Predictable Working Conditions Directive ought therefore to be interpreted in accordance with the humanisation of work principle.

[58] Transparent and Predictable Working Conditions Directive, Recital 2.

[59] Commission, 'Explanatory Memorandum: Proposal for a Directive on Transparent and Predictable Working Conditions in the European Union' (2017) COM(2017) 797 final 3.

[60] Filippo Fontanelli, 'General Principles of the EU and a Glimpse of Solidarity in the Aftermath of *Mangold* and *Kücükdeveci*' (2011) 17 European Public Law 233 and 239, as discussed in Päivi Neuvonen and Katja Ziegler, 'General Principles in the EU Legal Order: Past, Present and Future Directions' in Katja Ziegler and others (eds), *Research Handbook on General Principles in EU Law* (Edward Elgar Publishing 2022) 19.

[61] Takis Tridimas, *The General Principles of EU Law* (2nd Edition, OUP 2007) 30.

The hierarchy of norms rationale also applies to the implementation of EU measures by Member States. As Tridimas explains, when Member States implement EU law they act as 'agents' of the Union, and therefore must observe general principles.[62] A clear example of this is the case of *Klensch,* where Luxembourg had the discretion to choose which date to calculate a levy on milk required under an EU regulation. The CJEU held that, although Member States did have the ability to choose how to implement the regulation, it had to comply with the principle of equal treatment (and therefore, Luxembourg could not use the discretion to choose a date which might favour its largest dairy producer).[63]

In light of this, the implementation of the Transparent and Predictable Working Conditions Directive must also be done in observance with the humanisation principle. This is reinforced by the fact that the directive itself is directly linked to the humanisation principle: many of the provisions are aimed at regulating 'work patterns',[64] which is defined as the 'form of organisation of the working time and its distribution according to a certain pattern determined by the employer'.[65] Article 13 WTD is titled 'pattern of work' and addresses employers who intend to 'organise work according to a certain pattern'. The provisions are therefore closely related, making it logical to draw upon the general principle for interpretation. The requirement in Recital 36 of the Transparent and Predictable Working Conditions Directive to 'take into

[62] Tridimas (n 61) 36.

[63] Case C-201/85 *Marthe Klensch and Others v Secrétaire d'État à l'Agriculture et à la Viticulture* [1986] ECLI:EU:C:1986:439, paras 9 – 10.

[64] Transparent and Predictable Working Conditions Directive, Recitals 30; 32; 34; Article 4(2)(l) and (m); Article 10.

[65] Transparent and Predictable Working Conditions Directive, Article 2(a).

account the needs of the employer and of the worker' in the context of predictable work patterns furthers this, as it also relates closely to the sentiment of the humanisation principle.

Recourse to the humanisation principle as an interpretative aid could have a particularly influential effect on the reading and implementation of the Transparent and Predictable Working Conditions Directive, as it is an instrument which gives substantial discretion to Member States, especially when compared with other directives.[66] The Transparent and Predictable Working Conditions Directive provides only scaffolding for regulatory action; the substance of many of the provisions are left to the discretion of Member States. The humanisation principle could therefore considerably shape this discretion.

Given these findings – that the directive must be interpreted and implemented in conformity with the humanisation principle – the next question to ask is how this might impact certain provisions. For the purposes of this chapter, the focus is only on the provisions that could relate to the issue of worker preferences within the use of algorithmic scheduling software. There are three provisions which are most relevant, and each will now be examined in turn.

Article 12 of the Transparent and Predictable Working Conditions Directive is arguably of most relevance to the question of worker preferences within scheduling software. The provision states that Member States shall ensure that a worker with at

[66] The WTD or Directive (EU) 2019/1158 of 20 June 2019 on work-life balance for parents and carers [2019] OJ L188/79, for instance, are more prescriptive (see analysis below).

least six months' service can 'request a form of employment with more predictable and secure working conditions where available and receive a reasoned written reply'. It could therefore be argued that a worker could request a predictable shift pattern which incorporates their preference for certain childcare hours or weekly sports club, for instance.

The strength of the right to request predictable work, however, is limited. The framing of Article 12 is procedural: the request can be made after certain conditions are met, and there must be a reasoned reply within a set timeframe. The quality of the reasoning, the type of reasons, or guidance on how to reach a balanced decision, however, are not provided.

Contrast can be made with the right to request flexible work contained in Article 9 Work Life Balance Directive.[67] Issued on the same day as the Transparent and Predictable Working Conditions Directive, the right to request flexible work is similarly procedural in nature, applying only to specific caregivers, but offers more guarantees to its holders than the right to request predictable work. It states that workers with children up to at least eight years of age have the 'right to request flexible working arrangements for caring purposes' and that the employer must 'consider and respond to the requests… taking into account the needs of both the employer and the worker'. This is furthered by Recital 34, which states that 'workers should be able to adapt their working schedules to their personal needs and preferences'.

[67] Directive 2019/1158 (n 67).

Against this backdrop, the right to request predictable work looks particularly weak. There is no similar requirement for employers to 'consider' the request nor take into account the workers' needs. Whilst the corresponding Recital 36 states that the written response should take into account the 'needs of the employer and of the worker', the absence of this from the substantive article reduces its impact. Taken together, it appears that a worker could request a shift preference under Article 12 to which an employer could reject without proper consideration of the workers' needs.

Interpreting Article 12 in compliance with the humanisation principle, however, would alter this. The humanisation principle requires working time to be adapted to the worker: the purpose is to ensure that shift work is adapted to workers' human and social needs. In order for the right to request predictable work to conform with the humanisation principle, it would need to be interpreted in a way which ensures this aim – that workers' needs are taken into account in the organisation of time. A restrictive interpretation of Article 12, in which an employer could ignore workers' needs without proper consideration, would therefore not be compliant with the humanisation principle.

The humanisation principle would also affect the proportionality approach within Article 12. The provision states only that an employer is required to give a 'reasoned written reply', meaning that the quality threshold for the decision making is low. The reply does not strictly have to contain convincing reasoning nor a clear demonstration of the balancing between the worker's request and the business needs. Under the humanisation principle, however, there is a higher threshold of proportionality. The starting point is that working time is adapted to human needs:

infringement of this principle can only be done if there is a legitimate aim being pursued in a suitable and necessary manner. If Article 12 is read in conjunction with the humanisation principle, this could therefore elevate the scrutiny threshold for the written reasoned reply. A reply which did not identify a legitimate aim pursued in a suitable and necessary manner may fall short of what is required. It would also not be possible for the legitimate aim to be exclusively economic considerations under the humanisation principle (as discussed earlier). In the written reasoned reply therefore, the employer would need to highlight a legitimate reason for rejecting the worker's request for shift preferences that went beyond its economic interests.

It has thus been shown that, whilst Article 12 of the Transparent and Predictable Working Conditions Directive is a skeletal provision, recourse to the humanisation principle adds flesh to questions of the quality, nature and type of reasoning put forward by the employer.

The same rings true of how a Member State may transpose the right to request predictable work into national law. Not only should Article 12 be *interpreted* in light of the humanisation principle, it should also be *implemented* in compliance with the general principle of adapting working time to the worker.

To take an example, Ireland appears to have implemented the provision *verbatim.*[68] Under national law, employers simply need to provide a reasoned written reply to the worker's request. There is no strict requirement to consider the needs of workers, nor is there a quality threshold for the decision making. Given the discretion

[68] S.I. No. 686/2022 - European Union (Transparent and Predictable Working Conditions) Regulations 2022.

that Member States have in implementing the provision ('Member States shall ensure that a worker… may request'), it could be argued that this implementation uses the discretion in a way which is not in accordance with the humanisation principle. Analogy can be made with *Klensch,* discussed earlier, which held that national transposition had to be done in a way which was in conformity with general principles of EU law.

Lastly, the relationship between Article 12 Transparent and Predictable Working Conditions Directive and Article 13 WTD as an ordinary directive provision should be considered. The right to request predictable work is framed as an individualised right which can only be requested when predictable and stable work is 'available'. This contrasts with the generalised principle in Article 13 WTD to adapt work to the worker which kicks in at the very beginning when the employer '*intends*' to organise working time. In the context of algorithmic scheduling software, this would mean consideration of the humanisation principle *before* schedules have been set. The right to request predictable work is therefore an additional layer of worker-centric scheduling, rather than the baseline EU provision on worker preferences in determining schedules. The two provisions (Article 13 WTD and Article 12 Transparent and Predictable Working Conditions Directive) complement each, however, as the employer's ability to justify its reasons for refusing a request for workers' shift preferences would be more persuasive if it can demonstrate that the initial distribution of shifts had taken into account the humanisation principle.

Analysis now turns to the second provision in the Transparent and Predictable Working Conditions Directive which may be influenced by the humanisation principle.

Article 10 gives workers the right to refuse work subject to certain conditions. In a limited sense, this does allow for the provision of worker preferences within scheduling as they are able to turn down certain shifts without adverse consequences. However, Article 10 itself provides significant discretion to Member States. It states that workers shall not be required to work if the proposed shift is outside of the 'predetermined references hours and days' and the worker was not informed within a 'reasonable notice period'. Neither of these qualifiers are given numerical limits by the directive and there is no requirement to pay higher remuneration for hours outside of the reference period: this is left to the Member States. As discussed in Chapter 2, this ultimately means that a Member State could implement a narrow temporal duration for notice and a wide reference period, or indeed leave this to the discretion of employers, without requiring additional pay.

If this was the case, it could be argued that such a transposition would fail to give proper effect to the humanisation principle. A notice period which does not allow for workers to meaningfully re-organise their time in light of a shift change would arguably not be a considerate balance of human needs with business needs. If an employer is allowed to provide a wide reference period and few guaranteed hours, without additional remuneration for hours outside of the guaranteed hours, then the provision will have limited practical impact. Such a narrow implementation of the provision would be contrary to the very purpose of the humanisation principle, which is to adapt working time to human, not just business, needs. This therefore suggests that, despite the discretion given to Member States in the directive, a restrictive implementation would circumvent the humanisation principle and therefore may not be permissible.

A final provision which may be re-examined in light of the humanisation principle is the discussion of 'abuse' in the use of unpredictable schedules. For the purposes of this analysis, the aim here would be to argue that exclusion of worker preferences from algorithmic scheduling software amounts to an 'abusive practice'.

The term appears several times in the Transparent and Predictable Working Conditions Directive, for instance, Article 11 requires Member States to take measures to prevent 'abusive practices' in the use of on-demand or similar contracts; Recital 2 refers to the 'prohibiting of abuse of atypical contracts'; and Recital 35 also reiterates the need to prevent 'abuse' from unpredictable contracts which give employers the flexibility to call workers as and when.

The term 'abuse', however, is not defined in the directive and it was not used within the Commission's initial proposal.[69] It appears to have been inserted by the Council to mimic the 'anti-abuse' clauses in the atypical work directives, which also do not define abuse.[70] The CJEU has largely interpreted 'abuse' to mean the use of atypical contracts to deliberately avoid providing permanent employment contracts, for instance, through the repeated use of agency contracts to circumvent direct employment.[71] The fact that the measures suggested under Article 10 to prevent 'abusive practices' include a rebuttable presumption of employment based on average

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[69] Commission (n 59).

[70] Council, 'Cover Note: Commission Staff Working Document Impact Assessment' (Interinstitutional File 2017/0355 (COD)) 167-8.

[71] See, for example, Case C-681/18 *JH v KG* [2020] ECLI:EU:C:2020:823 on the successive issuing of temporary agency work contracts. This is also implicit in the directives themselves: Council Directive 1999/70/EC of 28 June 1999 concerning the framework agreement on fixed-term work, Recital 14, Clause 1(b) and Clause 5 refer to the 'abuse arising from the use of successive fixed-term employment contracts'.

hours or limitations on the duration of on-demand contracts supports the interpretation of 'abuse' as the intentional withholding of employment rights.

This therefore sets a high bar for what is meant by abuse in the context of scheduling. It would suggest that the failure to include worker preferences within scheduling software does not meet the standard for an 'abusive practice'. The implementation of measures like a rebuttal presumption of employment is therefore of limited assistance if, like in the healthcare example, most shift workers are employees where the issue is the lack of formal regulation governing the employer's prerogative to distribute shifts, not employment status.

It is argued, however, that a restrictive interpretation of 'abuse' in the context of scheduling is unwarranted in light of the humanisation principle. As discussed above, the CJEU has consistently emphasised the importance of workers' freedom to pursue social, family, and personal interests *outside of work.* The gravity placed upon this freedom is encapsulated in the humanisation principle – workers with irregular patterns of work are beholden to schedules which accommodate their needs, otherwise their ability to participate in life outside of work is diminished.

Hence, whilst on first glance it might not seem like the failure to incorporate worker preferences is an 'abuse' of flexible scheduling, the reality is that shift workers, working asynchronously to their peers, are dependent upon their preferences being taken into account. The stakes of preferences being excluded run high human costs, such as missing milestones, community time, and critical moments. The prevention of 'abuse' of atypical scheduling in the Transparent and Predictable Working Conditions

Directive should therefore be interpreted in a way which is rooted in the humanisation of scheduling, rather than being restricted to a high threshold. To do so otherwise would belie the impact that scheduling has on workers' quality of life and ultimately undermine the humanisation principle as a guiding interpretative norm.

In light of this, it is possible to read the provisions in the Transparent and Predictable Working Conditions Directive which concern 'abuse' – for instance, Article 11 which requires the implementation of national measures to prevent 'abusive practices' – as also including instances of failing to take into account the humanisation principle. This would ultimately mean that protective measures to ensure the incorporation of worker preferences in the use of algorithmic scheduling software would be necessary to prevent 'abuse' under the Transparent and Predictable Working Conditions Directive.

To conclude this section, the Transparent and Predictable Working Conditions Directive appears as a threadbare instrument, which does not strictly necessitate the inclusion of worker preferences into algorithmic scheduling software. However, when read in conjunction with the humanisation principle under the hierarchy of norms, the potential of the instrument can be re-envisaged. As was shown, the ability to request predictable shift preferences or measures to address abusive practices could be interpreted in line with the guiding aim of the humanisation principle. This would also have significant implications for how the directive is implemented, as the discretion given to Member States is shaped in accordance with the humanisation principle.

In the following section, a similar form of analysis will be undertaken, but instead relying on the GDPR. It will examine how certain provisions in the GDPR, when read in light of the humanisation principle, could also facilitate worker preferences in algorithmic scheduling software.

Worker Shift Preferences and the GDPR

Algorithmic scheduling systems are dependent upon the processing of data. This means that many of the provisions of the GDPR, which govern the lawful use of data processing, come into play when employers use such software.

The application of the GDPR to algorithmic time was discussed in Chapters 2 and 6. As outlined, given that the GDPR is not geared towards employment specifically, it offers limited substantive guidance on shift setting. There are, however, a few provisions which may be relevant, particularly when used in conjunction with the humanisation principle.

If a worker sought to argue that, under the GDPR, their shift preferences ought to be incorporated in the use of algorithmic scheduling software, two provisions would be of most use. The first is the requirement that the data processing be done in 'fairly' under Article 5(1)(a), and the second is that certain automated decisions must involve a human decision maker under Article 22. Alone these provisions do not seem to require the inclusion of worker preferences within the use of algorithmic scheduling software. However, when read in conjunction with the humanisation principle, the provisions could have a more substantive effect.

Starting firstly with Article 22 GDPR, this is one of the most discussed provisions within the regulation.[72] As outlined in Chapter 2, it states that a data subject shall have the 'right not to be subject to a decision based solely on automated processing … which produces legal effects concerning him or her or significantly affects him or her'. This is caveated by Article 22(2) which states that this right does not apply if the decision is necessary for a contract, authorised by the Member State, or subject to the data subject's explicit consent.

There are four main steps to analysing the application of Article 22 GDPR to algorithmic scheduling software. The first is to examine whether the employer's scheduling software is 'solely automated'.

There is substantial debate over what constitutes a 'solely' automated decision.[73] In the main CJEU authority on Article 22 – the *SCHUFA* case – it was held that if the human decision-maker 'draws strongly' on the automated decision in fact, then it would still satisfy Article 22(1) GDPR despite some human involvement.[74] This reflects the essence of the debate which concerns the level of human involvement required to sufficiently ensure adequate oversight of automated decisions. As the Article 29 Working Party Guidelines explain, 'solely' automated means when there is

[72] Halefom Abraha refers to it as 'the single most important safeguard against harms posed by algorithmic management' in 'Regulating algorithmic employment decisions through data protection law' (2023) 14(2) European Labour Law Journal 172, 180.

[73] See, for example, Reuben Binns and Michael Veale, 'Is That Your Final Decision? Multi-Stage Profiling, Selective Effects, and Article 22 of the GDPR' (2021) 11 International Data Privacy Law 319; Diana Sancho, 'Automated Decision-Making under Article 22 GDPR: Towards a More Substantial Regime for Solely Automated Decision-Making' in Martin Ebers and Susana Navas (eds), *Algorithms and Law* (Cambridge University Press 2020); Jeremias Adams-Prassl and others, 'Regulating algorithmic management: A blueprint' (2023) 14 European Labour Law Journal 124.

[74] Case C-634/21 *OQ v Land Hessen, intervener SCHUFA Holding* [2023] ECLI:EU:C:2023:957, para 48.

no 'meaningful' human oversight.[75] In the context of algorithmic scheduling, it could be argued that where the software sets the initial schedule but this is then evaluated by a human manager, it may still be considered 'solely' automated if the human intervener draws strongly on the initial schedule.

The use of algorithmic scheduling software, however, adds a further new dimension to this debate. If a workers' preferences for shifts are incorporated within the automated decision, then does this constitute 'meaningful' human involvement? The aim of Article 22 GDPR is to ensure that there is human oversight when someone is 'subject to' an automated decision which has a significant effect on them. However, if the workers' preferences are incorporated within that automated decision, then are they still 'subject' to the decision, if they have participated in it? Arguably, the most meaningful human involvement that could be achieved in the use of algorithmic scheduling software is to ensure that workers have input within the final schedule. It can therefore be argued that compliance with the humanisation principle, through the inclusion of worker preferences within algorithmic scheduling, may ultimately implicate whether the algorithmic scheduling system is caught by Article 22 GDPR or not.

Assuming nonetheless that this first criterion is met, the next stage of analysis is whether the use of algorithmic scheduling software meets the threshold of having 'legal' or 'similarly significant' effects on the data subject (the worker in this case).

[75] Article 29 Working Party, 'Guidelines on Automated individual decision-making and profiling for the purposes of Regulation 2016/679' (17/EN WP251rev.01 2018) 20-21. The Article 29 Working Party Guidelines were cited several times by the Advocate General in *SCHUFA* underscoring the continued relevance of the guidelines to judicial interpretation: Case C-634/21 *OQ v Land Hessen, intervener SCHUFA Holding* [2023] ECLI:EU:C:2023:220, Opinion of AG Pikamäe, footnotes 6 and 25.

There is ambiguity over what types of decisions would satisfy this criteria[76] and, as Aza argues, *SCHUFA* 'leaves much to be desired' in terms of addressing this ambiguity.[77] The CJEU stated only that the decision must affect, 'at the very least, the data subject significantly'.[78]

Ebert and others argue that the 'deployment of automated scheduling software… falls within the Article 22 prohibition as they will frequently involve 'decisions that deny someone an employment opportunity or put them at a serious disadvantage'',[79] citing the Article 29 Working Party Guidelines which were subsequently endorsed by the European Data Protection Board.[80] The fact that scheduling software may also affect the 'financial circumstances' of the worker, for example if they receive a payment per shift rather than as a salaried worker, then this would also fall under the Article 29 Working Party Guidelines, and thus may reach the threshold required under Article 22(1) GDPR.[81] If this is the case, then it would *prima facie* render automated scheduling software unlawful.[82]

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[76] Binns and Veale (n 73); Abraha (n 73).

[77] *SCHUFA* (n 74) predominantly focused on the definition of a 'decision' and nature of being 'solely' automated rather than legal or similarly significant effects, although Asymina Aza argues that the CJEU's interpretation suggests that it only applies to actual not predictive effects in 'Scores as Decisions? Article 22 GDPR and the Judgment of the CJEU in SCHUFA Holding (Scoring) in the Labour Context' (2024) 53 Industrial Law Journal 840, 857.

[78] *SCHUFA* (n 74) para 49.

[79] Isabel Ebert and others, 'Big Data in the workplace: Privacy Due Diligence as a human rights-based approach to employee privacy protection' (2021) 8 Big Data & Society 1, 4.

[80] Article 29 Working Party (n 75) 22.

[81] ibid.

[82] There was a debate over whether Article 22 introduces a prohibition or a right which needed to be requested (see, for example, Abraha (n 73); Adams-Prassl and others (n 73); Aza (n 77); Luca Tosoni, 'The Right to Object to Automated Individual Decisions: Resolving the Ambiguity of Article 22(1) of the General Data Protection Regulation' (2021) 11 International Data Privacy Law 145), however, this was addressed in *SCHUFA* (n 74) where the CJEU characterised Article 22 as a prohibition.

Contrary arguments, however, might be that the setting of a rota for work shifts cannot convincingly be equated to decisions like a 'refusal of an online credit application' or 'e-recruiting practices' outlined in Recital 71 GDPR.[83] These decisions imply a long-lasting or irreversible impact that is not comparable to the more immediate and short-lived impact of scheduling decisions. The issue with algorithmic scheduling software is the *cumulative* effect that a schedule which fails to satisfy workers' preferences would have (eg., missing a single important social event might not appear 'significant': missing *multiple* important social events may add up to having a significant impact on the individual).

Recourse to the humanisation principle as a guiding interpretative norm, however, may overcome this impasse. As discussed previously, the humanisation principle requires working time scheduling be adapted to the human needs of the worker. The purpose of this principle is to recognise that shift work has a uniquely significant impact on workers' ability to form personal, family and social lives outside of work, relative to standard workers, and therefore scheduling must be cognisant of these human needs. As a specific expression of the right to dignity at work, the humanisation principle articulates the importance of *humanised* scheduling: it can thus be argued that the interpretation of algorithmic scheduling as having a 'significant' effect on the worker is in keeping with the interpretative guidance of the humanisation principle.

It is also worth noting that, if an employer incorporates worker preferences within the algorithmic scheduling system, this might in turn affect the concept of a

[83] The CJEU in *SCHUFA* (n 74) relied particularly Recital 71 to identity what was 'significant'.

'significant' affect under Article 22(1), since the gravity or significance of the effect is arguably reduced if workers are involved in making that decision.

Moving to the third stage of analysis, even if the use of algorithmic scheduling is *prima facie* prohibited under Article 22(1) GDPR, it may be exempt under Article 22(2) GDPR. Paragraph 2 provides three avenues for avoiding the prohibition, namely if the automated decision making is necessary for a contract, authorised by national law, or based on the data subject's explicit consent.

Starting with 'explicit consent' under Article 22(2)(c), it is questionable whether an employer could rely upon this in the employment context. Consent as a legal basis for permitting automated decision making at work has been widely criticised by academics and data protection authorities who argue that workers' subordinate position to their employer and often lack of knowledge on how data is being used undermines the effectiveness of the consent.[84]

When applied to algorithmic scheduling, this opens out into an even wider, largely underexplored, debate over whether employees *ought* to be able to consent to waive certain employment rights.[85] In the previous section, it was argued that failure to incorporate worker preferences within algorithmic scheduling software would likely

[84] Abraha (n 73) 184 states that there is 'widespread agreement among policymakers, data protection regulators and practitioners that 'employees are almost never in a position to freely give, refuse or revoke consent'. See also Adams-Prassl and others (n 73); Article 29 Working Party, 'Opinion 2/2017 on data processing at work' (WP 249 adopted 8 June 2017); European Data Protection Board, 'Guidelines 05/2020 on Consent under Regulation 2016/679 Version 1.1' (4 May 2020); Michele Molè, 'Lost in Translation: Is Data Protection Labour Law Protection?' (2025) 45(3) Comparative Labour Law and Policy Journal (forthcoming); Waltraut Kotschy also argues that consent is unlikely to be accepted in the employment context under Article 6(1)(a) GDPR in 'Article 6 Lawfulness of Processing' in Christopher Kuner and others (eds), *The EU General Data Protection Regulation (GDPR): A Commentary* (OUP 2020).

[85] Limited research has been done explicitly on consent in employment law, see for example Guy Davidov and Maayan Niezna, 'Consent in Contracts of Employment' (2023) 86 Modern Law Review 1134.

amount to an unjustified infringement of the humanisation principle. As a specific expression of human dignity at work, the humanisation principle upholds an important constraint on the managerial discretion to determine patterns of work. It therefore seems arguable that, in examining the interaction between Article 22(2)(c) GDPR and the humanisation principle, it would not be possible for a worker to consent to undermining this general principle.

An alternative would be to rely upon Article 22(2)(a) GDPR and argue that algorithmic scheduling is necessary for the performance of the (employment) contract and therefore exempt from the prohibition. Taking the healthcare example, it could be argued that it is simply not feasible for a human manager to examine every shift schedule set and, even if it were, the human involvement would be superficial since the algorithmic scheduling software is better able to compute the optimal schedule. This is supported by the growing studies that show scheduling software to be preferred by healthcare management and employees.[86]

A distinction, however, could be made between algorithmic scheduling software which incorporates worker preferences and a system which does not. In the latter case, it could be argued that a system which infringes the humanisation principle cannot be regarded as 'necessary' for an employment contract. To hold otherwise would undermine the operation of the humanisation principle.

Moreover, in order to rely upon Article 22(2)(a) GDPR, the employer must show that there were suitable measures introduced to safeguard the employees' 'rights

[86] O'Connell and others (n 11); Kerr and Timony (n 9).

and freedoms and legitimate interests', with the minimum being the right to obtain human intervention, express their views and contest the decision.[87] In examining the interaction between Article 22 and the humanisation principle, it could be argued that worker preferences would need to be included within the algorithmic decision-making software, otherwise the workers' right to a humanised schedule under Article 13 WTD would not be safeguarded.

Assuming that the Article 22(1) prohibition is met, and thus an employer has to include human intervention within scheduling software, the fourth point of analysis to examine is the impact that a human decision-maker would actually have on the use of algorithmic scheduling.

Lazcoz and de Hert argue that Article 22 GDPR risks treating human intervention as a 'panacea' when, in reality, human intervention alone is insufficient: 'human governance' is also required.[88] This critique rings true in the context of algorithmic scheduling software. The notion of having human oversight in the distribution of shifts does, on first glance, appear to make the system more *humanised.* It speaks to the intuitive idea that 'having a good line manager makes people feel more secure . . . you can't tell a computer that your childcare arrangements are up in the air at the moment.'[89] There is something particularly *dehumanising* about the notion of an algorithmic system informing you that you will miss a friend's wedding or yet another milestone: the idea that a staff member has involvement upholds an element of

[87] GDPR, Article 22(3).

[88] Guillermo Lazcoz and Paul de Hert, 'Humans in the GDPR and AIA governance of automated and algorithmic systems' (2023) 50 Computer Law & Society Review 1, 2-3.

[89] Sarah O'Connor, 'When Your Boss Is an Algorithm' *Financial Times* (8 September 2016) <https://www.ft.com/content/88fdc58e-754f-11e6-b60a-de4532d5ea35> accessed 12 November 2025.

accountability or human touch in how shifts are distributed. It placates concerns that algorithmic scheduling systems will 'treat humans like machines… [because they] lack human empathy and cannot make subjective decisions based on the consideration of the employees' individual (or personal) circumstances'.[90] It ultimately appeals to the concept of *humanising* shift work within the humanisation principle.

The issue, however, is that requiring human intervention does not then mean that last minute childcare issues or pleas to attend a friend's wedding are accommodated, nor that the human intervener will show empathy. The GDPR does not offer substantive guidance on how the decision-maker should act once they are 'in the loop'.[91] This is where the humanisation principle becomes critical, as Article 13 WTD offers substantive guidance on how algorithmic scheduling software should be deployed. Once in the loop, the decision-maker would need to take into account the general principle of adapting work to the worker. Human needs would need to be accommodated, unless a legitimate aim was identified and pursued in a proportionate manner.

This section has thus demonstrated how the interaction between the humanisation principle and Article 22 GDPR could inform the use of algorithmic scheduling software to require worker preferences within the distribution of shifts. There is one further provision within the GDPR which could also assist in regulating algorithmic scheduling software, which will now be briefly discussed.

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[90] Adrienn Lukács and Szilvia Váradi, 'GDPR-Compliant AI-Based Automated Decision-Making in the World of Work' (2023) 50 Computer Law & Security Review 1, 5.

[91] Phrased used by Adams-Prassl and others (n 73) 126.

Article 5(1)(a) asserts that data processing must be done 'fairly' in order to comply with the GDPR. In Chapter 2, the various interpretations of 'fairly' were discussed, notably whether this is a procedural or substantive duty to ensure fairness. It was ultimately highlighted that the fairness principle is an underdeveloped area of the GDPR which could offer significant possibility. Much would depend upon a CJEU interpretation of the notion of fairness in a data processing context.

Without this interpretation, however, it could be speculated that the data processing undertaken by scheduling software which does not include worker preferences would not satisfy the principle of 'fairness'. The European Data Protection Board has stated that the principle of fairness has an 'umbrella function'[92] and that processing which is 'detrimental, unlawfully discriminatory, unexpected or misleading' is unfair.[93] It has listed several 'fairness elements' which include that data subjects should have the highest degree of 'autonomy' to determine the use made of their personal data; that processing should correspond with their 'reasonable expectations'; that it should not 'exploit the needs or vulnerabilities' of data subjects; that 'power imbalances' should be avoided with suitable countermeasures; 'risks' should not be transferred to the data subject and their 'fundamental rights' should be respected.[94]

[92] European Data Protection Board, 'Guidelines 03/2022 on deceptive design patterns in social media platform interfaces: how to recognise and avoid them Version 2.0' (14 February 2023) 11.

[93] European Data Protection Board, 'Guidelines 4/20219 on Article 25 Data Protection by Design and by Default, Version 2.0' (20 October 2020) 17.

[94] European Data Protection Board (n 92) 18.

In light of this, it could be argued that as an ‘umbrella function’, there is sufficient scope for fairness to substantively regulate the use of algorithmic scheduling software. Drawing on the European Data Protection Board’s ‘fairness elements’, if worker preferences are *not* included in the data processing required for algorithmic scheduling, then this arguably fails to provide adequate autonomy over the use of their data, as well as failing to meet the workers’ reasonable expectations that their needs will be considered in the distribution of shifts. This moreover reflects the other fairness elements – that the imbalance of bargaining power means worker preferences ought to be incorporated in order to avoid the transfer of risks to the worker and their potential exploitation.

Most compelling, however, would be to interpret the notion of fairness in light of the humanisation principle. As was argued previously in this chapter, the exclusion of worker preferences within the scheduling algorithm is likely to amount to an unjustified infringement of the humanisation principle. Data processing which is not done in compliance with the humanisation principle thus should not be regarded as ‘fair’, since it fails to respect the fundamental principle governing scheduling in EU law.

There is a further interesting line of discussion over the notion of ‘fairness’ within algorithmic scheduling systems that *do* incorporate worker preferences. As outlined earlier in this chapter, how an algorithm makes judgments over which worker preferences to prioritise in times of conflict depends on different notions of fairness. Udhe and others outlined three ways of achieving fairness – applying the equality norm, equity norm or needs norm – all of which might result in perceived unfairness

depending on the context.[95] There has been the suggestion that, in practice, employers choose to retain the ability to make the final decision over schedules rather than fully automated them;[96] this may be in order to avoid the risk of perceived unfairness amongst staff members. In this sense, it could thus be argued that the only way to 'fairly' process the schedules is to ensure that there is a human in the loop.

To summarise this section, it has been argued that the interaction between the humanisation principle and the GDPR (specifically Articles 5 and 22) could inform the use of algorithmic scheduling software. The analysis has ultimately shown that the use of such scheduling software *without* the inclusion of worker preferences seems unlikely to be justified under the GDPR, when read in conjunction with the humanisation principle.

To Conclude

Rotageek, a major scheduling software provider, was founded by NHS doctors frustrated by chaotic hospital scheduling and intent on improving it.[97] The benefits that such scheduling software can bring, as discussed in this chapter, are 'enormous'[98] – from advanced notice of shifts to a smoother workplace operation.

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[95] Udhe and others (n 4).

[96] Alex Wood, 'Algorithmic Management: Consequences for Work Organisation and Working Conditions' (JRC Working Papers 2021) 1

[97] Rotageek, 'The Rotageek Story' <https://www.rotageek.com/about> accessed 12 November 2025.

[98] Ernst and others (n 9) 3.

Critical to realising these benefits, however, is the incorporation of worker preferences within the scheduling algorithm. Whilst this is common practice in industries like healthcare, it is not a universal approach.

The decision to include worker preferences is often depicted as a managerial choice. Rotageek's website, for instance, encourages employers to factor worker preferences into their scheduling algorithm because 'asking about availability and preferences can go a long way in building trust and satisfaction.'[99] There is a concern, however, that if worker preferences are not incorporated into the scheduling algorithm then it can result in a dehumanising form of work organisation. As one healthcare worker stated, she felt treated as though she was 'just a robot that needs to function … I'm not allowed to have a private life'.[100]

The humanisation of work principle, contained in Article 13 WTD, was introduced to prevent workers being treated as machines. As the former ILO Director-General explained, the humanisation of the 'organisation of work time would reduce the feeling of being a slave to work and would allow other aspirations and needs to be met'.[101] It is clear that there has been a long-standing principle to ensure that shift work is adapted *to the worker* and that the incorporation of worker preferences within shifts is not just a managerial choice, but a guiding general principle. The key to ensuring

[99] Rotageek, 'Shift Rota: The Secret to Scheduling' <https://www.rotageek.com/blog/shift-rotas-secret-to-scheduling#:~:text=If%20you're%20using%20a,night%20shifts%20or%20morning%20shifts> accessed 12 November 2025, which goes on to state that 'if you're using a digital rota scheduling system, it might even have a feature that lets employees input their preferences.'

[100] Udhe and others (n 4).

[101] ILO Director-General, 'Making Work More Human: Working Conditions and Environment' (ILO 1975) 33.

humanised scheduling, as one nurse explained, is ‘considering the needs of every human being’.[102]

This chapter has ultimately debunked the idea that worker preferences are something that ought to be included as a good practice, but not a strict requirement. It has been argued that it would not be compatible with Article 13 WTD to exclude worker preferences as one of the ‘hundreds of variables’ that could go into the scheduling algorithm.[103] It has further been argued that there are other obligations under the Transparent and Predictable Working Conditions Directive and GDPR which reinstate this, when read in conjunction with the humanisation principle.

Given that algorithmic scheduling software is growing in use[104] – rising in popularity with claims that it can result in ‘agile’, ‘fluctuating’ schedules which ‘align your people to customer demand’[105] – the humanisation principle can act as an important grounding principle in governing how these systems are used. Without it, there’s a risk that scheduling reflects to the frustrating, chaotic systems that the NHS doctors who founded Rotageek sought to address.

[102] Udhe and others (n 4) 6.

[103] Rotageek (n 38).

[104] Javier Sánchez-Monedero and Lina Dencik state that it is being ‘deployed rapidly’ in ‘The Datafication of the Workplace’ (DATAJUSTICE 2019) 17.

[105] Quotes taken from the following major scheduling software providers webpages: Dayforce, ‘Reduce employee scheduling headaches’ <https://www.dayforce.com/mu/how-we-help/dayforce/empower-and-mobilize-an-agile-workforce/scheduling>; UKG, ‘Employee scheduling software: Balance shifts, boost success’ <https://www.ukg.com/solutions/employee-scheduling-software>; Doc Adobe (n 17); all accessed 11 November 2025.

Conclusion

This thesis began with the proposition that the obscure and overlooked principle in Article 13 of the Working Time Directive held significant potential in regulating the rising use of algorithmic management to organise working time. This thesis closes by decisively affirming that claim.

Far from being an 'unglamorous' and 'mundane' topic, the question of working time organisation is fundamental to modern life.[1] As outlined in Chapter 1, control over working time is central to everyday labour relations: it is 'hardly possible to pick up a newspaper or to turn on the radio without hearing something about the relationship between time and work'.[2]

It was argued, however, that the increasing deployment of algorithmic management risks derailing hard-won working time norms. The use of algorithmic software to determine when, how long, and at what pace, workers work stretches the societal shift from standard to flexible models of time even further. The four types of 'algorithmic time' – dynamic scheduling, contested time, algorithmic pace-rates, and temporal disciplining – can generate harms if not adequately regulated. Fears that the use of algorithmic management results in the 'dehumanisation' of workers, where

[1] As argued by Alan Bogg, 'The Regulation of Working Time in Europe' in Alan Bogg and others (eds), *Research Handbook on EU Labour Law* (Edward Elgar 2016), 278.

[2] Rubery and others, 'Working Time, Industrial Relations and the Employment Relationship' [2005] 14 Time & Society, 89.

algorithms end up 'capturing the body, soul and mind of workers' have been well voiced.[3]

Within the EU regulatory framework, Article 13 WTD emerges as the most salient provision to abate these concerns. As explained in Chapter 2, this is due to its ability to offer normative guidance on 'patterns' of non-standard working time, rather than procedural or risk mitigation solutions.

Despite its relevance, Article 13 WTD has not yet been developed by the Court of Justice. An examination of its drafting materials, however, reveal that the principle has a rich history and influential legal status. The 'general principle of adapting work to the worker' was the legislative response to the humanisation of work movement, which called for an end to 'soulless' scientific management and the alienation of factory-line workers.[4] Captured in this simple principle was the culmination of a socio-political movement to 'humanise' work, which sought to ensure workers live 'not just as robots or machines, but as men and women who are human beings'.[5]

Notwithstanding the 'conceptual fuzziness' of the movement,[6] its translation into a widespread legal principle requires that work organisation be adapted to the human needs (be it psychosocial, physical or specific) of workers through worker input.

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[3] Adrián Todolí-Signes, 'Making Algorithms Safe for Workers: Occupational Risks Associated with Work Managed by Artificial Intelligence' (2021) 27 Transfer: European Review of Labour and Research 433, 447 and 440 respectively.

[4] John Houck, 'When Work Is Soulless' (1974) 36 The Review of Politics 458.

[5] Quote from US Senator Ted Kennedy in US Senate, 'Worker Alienation: Hearings before the Subcommittee on Employment, Manpower, and Poverty of the Committee on Labor and Public Welfare' (92nd Congress, 25 July 1972) 79.

[6] David Guest and others, 'Humanizing Work in the Digital Age: Lessons from Socio-Technical Systems and Quality of Working Life Initiatives' (2022) 75 Human Relations 1461, 1466.

Given the fundamental nature of the humanisation principle, it can be regarded as a 'general principle' of EU law, established through either the traditional route or as a specific expression of the right to dignity at work, as outlined in Chapter 4.

In light of the substance and status of Article 13 WTD, the humanisation principle thus holds significant scope for regulating algorithmic time today. Chapters 5, 6 and 7 illustrate this through case studies taken from platform, warehouse and healthcare work, which show how certain uses of algorithmic management risk infringing Article 13 WTD.

The requirement to 'make rate' by working at speeds set by algorithmic software;[7] the allocation of working time shifts based on being in the top ranking 'badge';[8] and the exclusion of worker preferences from the 'hundreds of variables' fed into scheduling software algorithms[9] all amounted to concerns that, as one worker stated, they were treated 'like robots rather than people'.[10] These *prima facie* infringements of the humanisation principle were then examined under the proportionality principle, to see if they could be justified by balancing the employer's needs with the workers' human needs. Introduced to prevent the industrial worker from 'becom[ing] a sort of robot',[11] the application of the humanisation principle highlighted

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[7] Term used by the international company Amazon, see Steven Vallas and others, 'Prime Suspect: Mechanisms of Labor Control at Amazon's Warehouses' (2022) 49 Work & Occupations 421, 423.

[8] Term used by food delivery platform Foodora, see Mirela Ivanova and others, 'The App as a Boss? Control and Autonomy in Application-Based Management' (Arbeit, Genzen, Fluss 2018) 15.

[9] As outlined by Rotageek, a major scheduling software provider in 'Auto Scheduling' <https://www.rotageek.com/solutions/rota-auto-scheduling/> accessed 11 November 2025.

[10] Jack Shenker, '"To them, we are like robots. The things that make us human are ground out of you": the inside story of a strike at Amazon' *The Guardian* (29 July 2023) <https://www.theguardian.com/technology/2023/jul/29/to-them-we-are-like-robots-inside-story-of-a-strike-at-amazon> accessed 12 November 2025.

[11] ILO, 'Report V (1) Occupational Health Services' (ILC 70th session, 1984) 13.

how the employer's right to manage is subject to the requirement to *humanise* work organisation.

Not only is Article 13 WTD an important directive provision, it also plays an influential role as a general principle or specific expression of one. As was shown, Article 13 WTD's potential could extend to guiding transpositions of the Transparent and Predictable Working Conditions Directive; informing interpretations of data protection rights in the GDPR through the prism of *humanising* work; and influencing the definition of 'working time' in the WTD to ensure that strict constructions of 'time-off-task'[12] adhere to the notion that workers are, after all, only human.

In a world of work where workers' time requires the 'efficiency of a machine',[13] this thesis has ultimately developed the timely reinvigoration of Article 13 WTD. Whilst the 'danger of dehumanization at work in the era of artificial intelligence is very real',[14] legislative attempts to humanise the 'man-machine relationship' are long-standing.[15] Harnessing this legacy, and ensuring that Article 13 WTD is no longer obscure and overlooked, may well be timeless in shaping modern models of working time.

[12] A term used by Amazon, see Vallas and others (n 7) 435.

[13] Heather Stewart, '"The Job Is Not Human": UK Retail Warehouse Staff Describe Gruelling Work' *The Guardian* (25 January 2023) <https://www.theguardian.com/business/2023/jan/25/the-job-is-not-human-uk-retail-warehouse-staff-describe-gruelling-work> accessed 16 April 2023.

[14] Annette Bernhardt and others, 'Data and Algorithms at Work: The Case for Worker Technology Rights' (Center for Labor Research and Education, University of California, Berkeley 2021)17.

[15] ILO, 'International Programme for the Improvement of Working Conditions and Environment' (Governing Body, GB.200/PPA/10/S, 1976) 10.

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