RUNNING HEAD: AT THE CROSSROADS OF THE SENSES

BOOK REVIEW: Polina Dimova (2024). *At the Crossroads of the Senses: The Synaesthetic Metaphor Across the Arts in European Modernism*. The Pennsylvania State University Press.

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Introduction

Paulina Dimova's volume on synaesthesia, synaesthetic metaphor,[1] and the arts around the turn of the 19th Century is clearly a labour of love. Almost two decades in the writing, and with a host of intriguing details and trivia concerning the artistic fascination with the crossing of the senses c. 1900. The period of interest – European Modernism – refers to a time of experimental and avant-garde trends in literature and the arts that stretches from the late 19th century through the mid-20th century, particularly after World War I (though see Brain, 2015). Dimova's (2024, p. xii) stated aim is to explore "the intersections of literature and music, history and semiotics, mysticism and science". It is a treasure trove of period details and surprising connections between the arts, what might be described as an example of 'intermediality' (Young, 2021). Indeed, one of the 'Twenty theses on synaesthesia' that Dimova opens her book with is that "Synaesthetic metaphors anticipate adaptations across the arts by translating between the senses and the art forms in the generative process of *intermediality*." [italics in original] (Dimova, 2024, p. 1).

Dimova's approach is not novel inasmuch as there has long been scientific interest in the connection between synaesthesia and the arts (e.g., Mulvenna, 2007; Van Campen, 2010). Furthermore, the notion of the synaesthetic synergy in the arts continues to resonate in the contemporary era (e.g. Deutsch, 2012), meaning that it is surprising nowadays to realize that synaesthetic art was once considered degenerate (Nordau, 1898), indicating a failure to distinguish the senses (at least that was the view of by a small number of often-cited critics; Aschheim, 1993).

Dimova's intriguing volume throws up some pertinent questions around the phenomena of synaesthesia and who gets to decide how the term, or condition, should be defined and how it is used. Dimova (2024, pp. 6-7) herself starts her work by stating that: "In the most general terms, synaesthesia is the confusion or conflation of the senses, where one sense is experienced or described in terms of another. It is a neurophysiological and psychological trait, due to which a sensory, affective, or conceptual trigger (a sound, emotion, or idea) induces a concurrent sensation in a secondary modality (a color or a form)." Given that Dimova is herself a synaesthete, she speaks from first-hand experience. However, this does

[1] According to Sean Day (1996, p. 1): "In a synesthetic metaphor, a certain perceptual mode is initially specified (or may be assumed), but the imagery is linguistically related in terms belonging to one or more differing perceptual modes. Commonplace examples of synesthetic metaphors in English include phrases such as "loud colors", "dark sounds", and "sweet smells"."

not necessarily equate to a position of authority on the subject. Dimova's crossmodal definition, while clearly fitting with the thesis underpinning her volume ('At the crossroads of the senses'), and matching the claims one sometimes finds coming from the cognitive neuroscientists that synaesthesia is fundamentally a crossmodal phenomenon (e.g., see Ramachandran, Hubbard, & Butcher, 2004), does not map onto the statistics concerning its actual manifestation. Note here only that the most common form of synaesthesia is actually intramodal, namely coloured graphemes (see Day, 2005, for the suggestion that coloured graphemes are experienced by almost 70% of synaesthetes).[2]

There is plenty of interesting historical discussion of *fin de siècle* arts including, of course, synaesthetic artists such as Baudelaire with his sonnet 'Correspondences' (*Correspondances*, ca. 1852-1856) from The Flowers of Evil (Baudelaire, 1857; see also Meadows, 2011), Kandinsky with his 1912 opera *Der Gelbe Klang* (The Yellow Sound; D'Arcy & Hand, 2012), and Scriabin. The latter's *Poem of Fire* (1910), incorporated a luce, a light score. Before his death Scriabin even contemplated adding fragrance to the performance to create the *Gesamtkunstwerk*, the Total Work of Art (Spence & Di Stefano, 2025a). However, there is also discussion of Auguste Rodin's sculpture, Rainer Maria Rilke's modernist German poetry, the Russian novelist and poet Andrei Bely's *Petersburg*, and František Kupka's abstract visual art. Oscar Wilde, once an Oxford student (he studied Classics at Magdalen College from 1874-1878), also makes an appearance with his version of Salomé, a play published in 1891. This biblical story has served as the inspiration for symbolist plays,[3] poetry, paintings, etc. (see Spence, 2021, for a review). However, it is the coloured music that would appear to

[2] Dimova apparently experiences this intramodal grapheme-colour form of synaesthesia writing that: "I chose to spell *synaesthesia* with ae for its striking red-green colouring. In my associations, *synae* is blue-red-green as opposed to the pleasant but plain blue-green *syne*." (Dimova, 2024, p. xvi).

[3] On the 10th and 11th December, 1891, two performances of the Old Testament text of the Cantique des cantiques (Song of Songs) of Solomon by Paul-Napoléon Roinard were given at the Théâtre des Arts in Paris. Beautiful young symbolist poets wafted fragrances that supposedly synaesthetically-matched the vowel sounds that were sung on stage (see Roinard, de Labrély, Champagne, & Deák, 1976). Needless to say, this kind of synaesthetic artistic experience did not catch on amongst the general public. Roinard apparently had in mind an almost synaesthetic multisensory work in which original music, words, vowel sounds, colours, and scents were all to be harmonized (Halperin 1988, p. 199; Stokes 1972, p. 167). For each of the eight poetic sections (or 'mystic devices'), Roinard provided details of the exact combination of color (e.g., 'pale purple'), scent (e.g., 'frankincense'), speech (e.g., 'in i illuminated with o (white)'), and music (e.g., 'in C') that were to be presented in synchrony (Fleischer 2007, p. 111). In this case, a total of nine scents (frankincense, white violets, hyacinth, lilies, acacia, lily of the valley, syringa, orange blossom, and jasmine) were released into the theatre, while the audience listened to words and music (Roinard et al. 1976), Roinard wanted to realize the ideal of a synthetic and perfect union of the arts and of the senses. However, as various commentators have subsequently made clear, practical constraints with trying to deliver, and thereafter to clear, a sequence of scents would seem to have limited the audience's appreciation of these early performances (Deak 1993, p. 156, Fleischer 2007; Shepherd-Barr 1999). Here, one might also want to question whether the crossmodal mappings suggested by Roinard really did correspond, or whether instead they were based on nothing more than idiosyncratic (possibly synaesthetic) combinations of stimuli instead.

be much more relevant to those artists operating in *fin de siècle* Europe, and is still of interest to both artists (Deutsch, 2012) and researchers today (Lee, Latchoumane, & Jeong, 2017).

Synaesthestic metaphor

Polina Dimova uses the term ‘synaesthetic metaphor’ as a heuristic device. She groups congenital synaesthesia, literary synaesthesia (aka pseudo-synaesthesia; see also Marks, 1978; Marks & Mulvenna, 2013), intermediality in the arts, and cultural synaesthesia together. As David Howes (2025, p. 147) puts it, she: “engages with them contrapuntally, in the manner of a fugue. The right-thinking neuroscientist would be aghast at such heterodoxy and abominate it”. As an experimental psychologist myself, I am all for challenging the ‘neuromania’ (Legrenzi & Umilta, 2011) or ‘cerebrocentrism’ (Howes’ terminology) of so much contemporary cognitive neuroscience research. I agree with Dimova when she notes that neuroscientific, or clinical,[4] definitions of synaesthesia, are overly constraining when considering the crossmodal augmentation, or translation, of art (e.g., see Howes & Classen, 2014; Spence & Di Stefano, 2024). It can be argued that what is needed is rather more of a social/structuralist account of synaesthesia, consistent with the views put forward by Lévi-Strauss (1997). At the same time, however, it should also be noted that what is commonly referred to as ‘synaesthetic metaphor’ would actually appear to have more in common with the crossmodal correspondences (Spence, 2011)[5] that with clinical synaesthesia.

Synaesthesia as a neurological (clinical) condition

It has been suggested that the repopularization of the study of synaesthesia in the 1990s (i.e., following the era of Behaviourism in psychology, Harrison, 2001) can be attributed to the emergence of the ‘criterion of consistency’ test introduced by Baron-Cohen, Harrison, Goldstein, and Wyke (1993), along with early neuroimaging results highlighting activation in

[4] According to Casini (2017, p. 1): “Clinical synesthesia is commonly defined as the experience of having perceptions in one sensory modality triggered by a stimulus from another.”

[5] Crossmodal correspondences refer to the crossmodal associations between sensory attributes or features, either perceived or merely imagined, in different senses (Spence, 2011). Much like synaesthesia proper, these crossmodal associations between seemingly-unrelated sensory stimuli in different sensory modalities can seem surprisingly when first one comes across them. However, unlike the idiosyncratic inducer-concurrent mappings experienced by synaesthetes, the crossmodal correspondences tend to be consensual (that is, they are shared across groups of people).

colour cortex (V4) in response to colour concurrents (Paulesu, Harrison, Baron-Cohen, Watson, Goldstein, Heather, et al., 1995). In fact, the Criterion of Consistency test has rapidly become the gold standard to determine who is a ‘genuine synaesthete’ and who is merely faking (see also Johnson, Allison, & Baron-Cohen, 2013; Root, Chkhaidze, Melero, Sidoroff-Dorso, Volberg, Zhang, & Rouw, 2025; Svartdal & Iversen, 1989).

However, even within the scientific literature there are grounds to question both sources of evidence. In terms of the criterion of consistency, one might question why consistency need be a defining (i.e., rather than just a characteristic feature) of the condition. Certainly, if one goes far enough back in time, one can find occasional reports from doctors concerning their patients, such as the one that appeared in the pages of the science journal *Nature* in 1898, of an individual who experienced coloured music, but for whom the colours that were triggered by the music were most vivid in the opening movements of the work and had faded away entirely by the final act (Macdougal, 1898; see also Starr, 1893; Underwood, 1893, for early interest in colour music). At the same time, however, if synaesthesia, and synaesthetic tendencies were thought to fall along a continuum of crossmodality then what is striking today is how few cases of a disappearing concurrent (or, for that matter, other borderline cases) have been reported in the literature (see Deroy & Spence, 2017). In retrospect, one might at least question whether such a strict definition should necessarily be held as the gold standard for the condition, especially given the widespread acceptance of the reality of this form of neurodiversity nowadays. At the same time, however, it does not feel that there are many individuals claiming to be synaesthetic who fail to pass the criterion of consistency, which is perhaps surprising (see Deroy & Spence, 2016).

In a highly-critical review of the published literature of neuroimaging studies that have claimed to report activation of the colour area V4, as a result of synaesthetically-induced colour-concurrents, Hupé and Dojat (2015) argue that there is currently no good evidence in support of the claim. They highlight that most published studies were statistically underpowered (not altogether surprising given the rarity of the condition), and, at the same time, the neural activation sites have often been wrongly identified as being in V4 (a case of wishful thinking).

Synaesthesia as a cultural phenomenon

At the end of the book, Dimova (2024, p. 236) writes: “To circle back to my initial questions: What is synaesthesia? And who is a synaesthete? ... Ultimately, I do not argue for artistic synaesthesia and against neurological synaesthesia, and I do not claim that there is no difference between synaesthetic sensations and synaesthetic metaphors. But I do suggest that the distinction is irrelevant for the study of culture.” Here, one might consider the case of Scriabin and the ongoing debate about whether or not he was a genuine synaesthete (Galeyev & Vanechkina, 2001; Harrison, 2001; Myers, 1911, 1914), as well as the question of whether his putative synaesthesia informed the specification of his *luce* (Peacock, 1985; Plummer, 1915; Spence & Di Stefano, 2024). I agree with Dimona here that there would appear to be more explanatory value in considering Scriabin’s *luce* as a natural response to the interest in crossing, and unifying, the senses that pervaded the arts during the period referred to as European Modernism (Triarhou, 2016).

One might also think of the way in which other philosophers and cultural commentators (i.e., non-cognitive neuroscientists) use the term synaesthesia, such as Merleau-Ponty (Abath, 2017) and architectural historian Pérez-Gómez (2016). Of course, there is an important difference here between synaesthesia as a cultural phenomenon, and synaesthesia as a phenomenon through which to study human culture. The notion that synaesthesia should be considered as a cultural phenomenon is not new. Back in 2017, for instance, Casini (2017, p. 1) writes: “This paper adopts a particular orientation toward synesthesia, exploring it as a cultural phenomenon common to us all, as an ability that can be learnt instead of an accidental neurological condition.”[6] Casini (2017, p. 2) notes that: “Namely, in ancient Greek the prefix “with”, which accompanies the verb “to sense, to perceive” (*aisthanesthai*), gives the word synesthesia the nuance of perceiving together with others rather than an individual cross-modality type of perception, turning synesthesia into a form of “feeling in common” (Heller-Roazen 2007, 81). Before being circumscribed to a purely neurological understanding, therefore, synesthesia coincided with a shared capacity of perceiving one’s own perceptions, anticipating Merleau-Ponty’s (1969) chiasmatic intertwining of the two hands touching each other. Merleau-Ponty argued that “synesthetic perception is the rule, and we are unaware of it only because scientific knowledge shifts the centre of gravity of experience” ([1945] 1962, 229), opening the way for an understanding of this phenomenon as a normal, quite common brain function emerging from our shared biological roots.” A little over a decade ago, Howes and Classen (2014) were already arguing for the cultural

[6] Casini (2017, p. 2) continues: “This article adopts a particular orientation toward synesthesia, responding to Whitelaw’s call for exploring synesthesia as a cultural phenomenon (Whitelaw 2008)”

construction of the senses, while Williams, Gumtau, and Mackness (2015) use the term synaesthesia to argue for modality-free learning and knowledge.

Sensory translation and crossmodal Gestalts

According to Casini (2017, p. 3) “Synesthesia is one of the means in which a different politics of the senses could be created, allowing an individual to perceive cross-sensory Gestalt patterns, become more aware of the hidden correspondences among ourselves and the physical environment, and thus interact with it differently.” Unfortunately, however, the last century or so has thrown up remarkably few, if any, examples of crossmodal Gestalts (see Spence & Di Stefano, 2025b, for a review). Chapter 8 of Dimova’s *At the crossroads of the senses*, entitled ‘Translating the senses’ turns out not to be about a literal translation which anyway, is seemingly impossible in any sense other than capturing the broad emotional tone of one work of art in another modality/medium (see Spence & Di Stefano, 2024). Dimova (2024, p. 235) concludes the book writing that: “Thus, modernist synaesthetic metaphors continue to anticipate transpositions of artworks across mediums.” I would argue that the goals of those artists who have engaged with synaesthesia (as a crossing of the senses) have singularly failed to be realized: As a case in point, just take the failure of every attempt to translate music into a light show through the use of colour organ (see Spence & Di Stefano, 2022, for a review).

Synaesthesia, synaesthetic marketing, and crossmodal correspondences

As I have argued at length elsewhere, talk of synaesthesia in the arts and of synaesthetic design is really a misnomer (Haverkamp, 2014; Merter, 2017; Spence, 2012, 2020). Others, note, have argued for a distinction between ‘weak’ and ‘strong’ forms of synaesthesia (Martino & Marks, 2001; see also Mulvenna, 2007). A quarter of a century ago, Martino and Marks suggested that synaesthesia comes in two kinds: “Strong synaesthesia is characterized by a vivid image in one sensory modality in response to stimulation in another one. Weak synaesthesia is characterized by cross-sensory correspondences expressed through language, perceptual similarity and perceptual interactions during information processing.” (Martino &

Marks, 2001, p. 61).[7] I would argue that many of the examples may be better considered in terms of the crossmodal correspondences the synaesthesia-like associations, that are shared across individuals (Spence, 2011). Indeed, Dimova connects with the notion of universal correspondences in her first chapter, and hence, for me, it was disappointing that she did not come back to revisit the theme and the controversial relationship between synaesthesia and the crossmodal correspondences at the end of her work.

The artistic spirit of synaesthestic arts in European Modernism has since been corrupted by synaesthetic marketing (cf. Howes, 2005; Spence, 2012). Dimova (2024, p. 234) talks of "predatory synaesthetic marketing". The sense is that we can never return to the golden age of synaesthesia and the arts. Much of what falls under the header of synaesthetic marketing is based on what is commonly referred to as 'synaesthetic metaphor'. Importantly, however, unlike the idiosyncratic crossmodal connections that are experienced by synaesthetes, synaesthetic metaphors are widely understood (Bolognesi & Strik Lievers, 2018a, 2018b; Nelson & Hitchon, 1995, 1999). However, I would argue that this is because they are based on crossmodal correspondences (Spence, 2011).

Conclusions

Ultimately, Dimova's (2024) *At the crossroads of the senses* provides a thoroughly engaging overview illustrating how synaesthesia and synaesthetic thinking pervaded the period referred to as European Modernism from the late 19th to mid-20th centuries. That said, I would argue that many of the artistic examples she discusses may be better conceptualized in terms of crossmodal correspondences (Spence, 2011), rather than synaesthetic metaphor. Ultimately, it would have been interesting to consider whether Dimova's position would have changed had she engaged with the explosion of research on the crossmodal correspondences that has emerged in the scientific literatures since she started writing her book two decades ago (see Motoki, Marks, Velasco, 2023).

Ultimately, I would argue that what one sees in European Modernism and beyond, is that artists have for too long been seduced by the phenomenon of synaesthesia. I would argue that

[7] Other synaesthesia researchers have argued along similar lines, e.g.: "Synaesthetes may differ from non-synaesthetes in terms of the consistency of their responses, their automaticity, and their reported phenomenology, but the mechanisms that guide the choice of cross-modal associations appear to be common to both synaesthetes and non-synaesthetes." (Simner, Ward, Lanz, Jansari, Noonan, Glover, & Oakley, 2005, p. 1070)

in many cases what they were really interested in was the crossmodal correspondences. As such, I would argue that it does matter how the phenomena we study are labelled. It is time to give up on the notion of synaesthetic art, and instead embrace design based on the crossmodal correspondences, as shared mappings across the senses which find their way into language as the mis-labelled 'synaesthetic metaphor, which should not be confused, nor conflated with synaesthesia proper. That being said, I would argue that despite longstanding theoretical and artistic interest, it may be impossible to meaningfully translate between the senses (Spence & Di Stefano, 2024), as evidenced by the failure of colour organs to capture the public imagination in quite the way that Father Castel (1725)[8] once suggested (Rimington, 1895, 1911, 1915).

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[8] In the 18th Century, Castel predicts that every home in Paris would 1 day have an Ocular Harpsichord for recreation purposes (Moritz, 1997).

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