The invention, gaming and persistence of the *hensachi* ('standardised rank score') in Japanese education

Introduction

The release in May 2015 of the film *Biri Gyaru* (known in English as 'Flying Colors') directed by Doi Nobuhiro sparked what became known as a '*biri-gyaru senpū*' (whirlwind) in Japan which is still felt today. The film attracted a million viewers in its first 11 days and went on to be the eighth highest-grossing Japanese film of all time. The film was based on a bestselling novel published in 2013, by Tsubota Nobutaka, the director of a private cram school, who described the experiences of a real-life student, identified as Kobayashi Sayaka, who, in just eighteen months, improved from a high school student with the academic grades of a fourth-year elementary student to passing the entrance exams to Keiō University, one of the most difficult-to-enter institutions in the whole of Japan.

Both the title of the book and the synopsis of the film have, at their core, a concept of evaluation which is very hard to translate directly for a non-Japanese context. The title of the book in Japanese *Gakunen biri no gyaru ga ichi nen de hensachi wo yon-jū agete Keiō daigaku ni gen'eki gōkaku shita hanashi* literally translates as 'The Tale of a "Fashion Girl" who had the lowest score among her cohort, who improved her standardised rank score (*hensachi*) by 40 points in just one year, and who got straight into Keiō University'. A clue to the popularity of both Tsubota's account and Doi's film can be seen in the advertising which has been added to the cover of one of the more recent editions of the book (see Figure 1). *Kono kiseki wa anata ni mo koru* (This miracle can also happen to you); *Damena ningen nado imasen; damena shidōsha ga iru dake na no desu* (There are no useless people; it is just that there are useless mentors). All Japanese readers will know that the 'miracle' referred to is the increase in the *hensachi* score (from 30-70) which led her to Keiō University that Sayaka achieved in such a short space of time and the 'useless mentors' are those who are unable to help students achieve such improvements.

There has been a huge market in Japan for many years which has played on showing students how they can improve their *hensachi* scores. Among some of these publications in recent years, Okamoto Masayoshi (2008) argued how greater control over one's respiratory rhythm has a positive benefit on *hensachi* scores (*hensachi wa agaru*); Ōtani Masaru (2005), a professor at Tokyo University, set out to demonstrate how changes in dietary habits and the intake of appropriate nutrients, such as amino acids and vitamins, contribute to improved *hensachi* scores (*hensachi up*); Miyaguchi Kimitoshi's (2011) 'Miyaguchi method of memorisation' supposedly improved a student's *hensachi* scores to such an extent that they are able to get into Tokyo University, the most competitive of all universities in Japan.

So, what exactly is *hensachi* and how and why has it become such a commonplace concept in Japan that it needs no explanation? In purely technical terms, *hensachi* is a norm-referenced test score standardised to have a mean of 50 and standard deviation of 10.[1] The most common formula for deriving it is:

Hensachi = $(\frac{(X-\mu)}{\sigma} \times 10) + 50$, where X is test score, μ is the mean of the distribution of test scores, and σ is the standard deviation of the distribution of test scores. [2]

In order to understand why the *hensachi* has been so influential in Japan, it is necessary to have an understanding of both how the education system has been designed (since the late 19th century) and how bell curve distributions work.

Japan is a country with very few natural resources other than its people. Investment in education has, therefore, significance at both a national level – where the state has sought since the Meiji period, to create a system which could produce an effective workforce to lead the country's drive for modernisation – and at the personal level where, as individuals are ranked largely according to their educational background (*gakureki*) rather than their family standing, education is the key to social status and financial security. By the end of the nineteenth century, over 95% of Japanese children were receiving five years of education at the elementary level. Entrance to the middle schools which followed, however, was much more restricted and provided a sorting device for the few who were able to continue to higher levels. Competition – particularly for places in the top schools – was fuelled by the realisation that success could lead to rapid social advancement. The origins of what became known later as 'examination hell' (*juken jigoku*) began to appear.

The 'examination hell' culture in Japan became particularly conspicuous in the post-war period. The link between doing well in examinations to get into the top universities and the exclusive recruitment from those universities by the largest companies and public sector offices which offered the best pay, security and status was extremely transparent. Put the other way around, most people in Japan accepted that those in the top (public and private sector) jobs in Japan had got there by merit through doing well in exams which were fair because they were based on memorising and reproducing objective facts rather than making subjective interpretations. Anyone, it was believed, regardless of their background, could do well in these exams if they put in the effort.

As we will see, the pressure on school students to well in exams became particularly intense in the 1960s as the bubble of 18-year-olds in the second post-war baby boom moved through the education system. While the supply of senior high school and university places had increased very substantially in the post-war period, mainly through the development of the private education sector, demand far outstripped supply. Competition to get into the top universities reached fever pitch. Parent, teachers and students all needed high quality information which would enable to them to apply to the right universities. This information needed to let them know not only how they were doing in their own right but also how they were doing *relative* to others. The only way in which this data could be collected was if large cohorts of students took the same tests under the same conditions as those which they would need to take for university entrance in order to allow the collection of enough data to place them on a bell curve of relative ranking. At the same time, institutions, senior high schools

and programme at universities, would need to have a relative ranking so that students could make informed choices about which schools and programmes they should apply to. These tests became known as *mogi shiken* (practice tests) and the relative ranking scores of institutions, programmes and students as their *hensachi*.

The *hensachi* system, as we will see, served the interests of many players. For the education system as a whole, it complemented what was being taught and tested in schools. For parents, teachers and students, it provided clarity regarding to which institutions and programmes applications should be made; most students would apply for institutions a bit below, exactly at and a bit above their *hensachi* in order to maximise and insure their chances. For the private companies which ran the *mogi shiken*, it provided a lucrative market based on the insecurity of families and teachers; the greater the insecurity, the more practice tests they would need to take and hence the greater the income for the companies.

Mogi shiken continue to play a key role in the Japanese education system. They are generally taken at the weekend or during holidays when students do not have school, and often take a whole day. The price of a full day of *mogi shiken* varies, depending on whether they are being taken as part of a broader package of educational support or independently, currently range up to 6,500 yen (65 USD). *Mogi shiken* are almost always taken in the five most important subjects for high school or university entrance: English, maths, Japanese, science and social studies (history, geography and civics). They come in two main variants, both of which complement the exams which students take to enter senior high school or university: multiple-choice style or short-answer style (see Figure 2 for examples). For the multiple-choice tests students fill in a computer-processing card with a pencil which is fed through a machine reader to deliver a score (see Figure 3). Following each *mogi shiken*, students receive a report card (see Figure 4). This shows the student's raw scores as well as their standardised rank score (*hensachi*), both in each individual subject as well as overall. The card also shows the probability of getting into the university of his/her preference, based on their *hensachi* and the *hensachi* of each school/university course.

Put simply, *hensachi* has a major impact on guiding an individual's life chances. It is curious therefore – especially given the huge literature on Japanese education which has been produced over the past thirty years – that there has been no systematic study of *hensachi* in English, only the occasional reference, the most detailed being Dore and Sako (1999: 21-37). Indeed, there has been very little systematic study of *hensachi* in Japanese either. While there are some studies that touch upon *hensachi* as part of research on other topics such as meritocracy, selection and inequality (e.g. Nakamura, 2011; Yoshino, 2012) or that study particular implications of *hensachi* (e.g. Kawano, 2004 which looks at *hensachi* tests in his study of the commercialisation of academic evaluation, drawing on Foucault's theory on the mechanism of discipline), the *hensachi* system has yet to be studied holistically. We posit that *hensachi* has become such a taken-for-granted assumption in Japanese education that its true significance has become virtually invisible. In this paper, therefore, we set out to explain the background of *hensachi*, how it became such an accepted part of the education system in Japan, and how it has been manipulated, gamed and abused.

The Emergence of **hensachi** *in Japan*

Figures 5 and 6 document the occurrence of the word *hensachi* in the headlines of two of the largest databases of mainstream Japanese newspapers, the Asahi and the Nikkei, starting with a single mention (in the Asahi) in 1963.

In helping their students decide on which institutions they should target, individual teachers until the early-1960s made judgements on pupils' chances without any obvious objective and external assessments. Their rough assessment on whether students would be able to get into the high schools or higher educational institutions of their choices was based on their intuition, experience, and other rather ambiguous criteria (Kuwata, 1995). Even though students took multiple practice tests, this was not a reliable guide to how they were doing compared to others who would be applying to the same institutions.

It was the lack of a reliable measurement tool to assess students' progress in their study that led a school teacher, Kuwata Shōzō, widely known as the 'Father of the *hensachi* or just 'Mr. Hensachi', to invent the *hensachi* system. He saw the need for a norm-referenced relative ranking system to help students make the best possible choice of the next educational institution that they should aim for.

The key point about the *hensachi* system which made it immediately attractive to teachers was that standardized rank scoring could be applied to any normally distributed data. Scholastic attainment could be analysed on the basis of such curves, and probability theory gave a good idea of the likelihood of attaining any given score on a test as well as how someone who had that given score stood in relation to their peers. An objective rationale for making pass/fail decisions about student placement could be obtained on the basis of the bell curve distributions. Unlike absolute scoring systems (such as A level grades), *hensachi* gave an indication of the *probability* of getting a place on a particular course at a particular university or senior high school rather than just informing applicants where the bar sat that they needed to get over in order to have a *chance* of being offered a place.

In understanding the spread and the early development of the *hensachi*, there are two key points which need to be borne in mind: the educational context of the 1960s and the role of private companies in Japanese education. It is doubtful if the *hensachi* would have come about the way it did without these two variables in play.

The 1960s was the period when Japan first became a 'mass' education system. The decade saw the post-war baby boom come through the high school system: the total number of 18-year-olds in the population increased from 1.4 million in 1964 to 2.49 million in 1966 while the number of senior high school graduates expanded from 870 thousand to 1.56 million over the same two year period (Nakamura, 2011: 84). This rapid 'massification' of high school education meant an equal intensification of competition. As competition for university places increased, so students' anxieties intensified; according to Nakamura (2011: 119-21), *hensachi*

mainly gained popularity as a tool to help increasingly anxious students objectively assess their ability and make properly informed choices about which university course they should aim for. Reliance on a *hensachi* score for making decisions on school and university entrance, however, could also *provoke* anxiety because one's *hensachi* could change from one mock test to another. People quickly realised though that the more mock tests one prepared for and took, the more confidence one could have in one's *hensachi* score. The emergence of the *hensachi* in the 1960s helped the development of what came to be called an 'entrance exam industry' in Japan.

Private supplementary education companies were already very active in Japan in the immediate post-war period. It was a competitive industry that required companies to continually look for new products and so it should have been no surprise that they quickly took full advantage of the new opportunities afforded by the development of the *hensachi*. In order for *hensachi* scores to have statistical value, they needed to be based on very large samples, the larger the better. The development of new computer technologies in the 1960s also enabled companies to process massive amounts of data in ways that they had never been able to do in the past and thereby substantially improve the process of their *hensachi*-based pass/fail predictions (Nakamura, 2011: 117). Japan's system of cram schools (*juku* or *yobikō)* at that time was consolidated around four big companies, Yoyogizemi, Kawaijuku, Sundai and, after 1965, Daishinken (Zeng, 1999: 162). *Hensachi* calculated by these major cram schools became accepted as the most accurate.

The higher education system in Japan in the 1960s was already very stratified, Kuwata (1995: 125) insisted that it was never his intention to support the development of hierarchies of institutions based on their *hensachi* level, but only to quantify a pass-or-fail border line for each institution and thereby help students decide on – and prepare for – the most appropriate for them to apply to. Nonetheless, not only students but also high schools and universities quickly found themselves ranked based on the *hensachi*. As the data sets grew, so the gradations between institutions became ever finer, what Dore and Sako (1998: 21) called 'sausage slicing'. *Hensachi* helped, therefore, to create and solidify a clear hierarchy of universities and senior high schools in Japan; it became a proxy for quality and, as we shall see, hugely influenced but also restricted student choice and ambition.

The 'banning' of hensachi

Hensachi … is a quantifying method that determines one's relative rank, not actual ability. Hensachi status, however, painfully suggests to many students that they are inferior to others. Its impact on them and on their attitude to life is so strong that it often lingers throughout their lifetime. (Kawanishi, 2009: 79).

Hensachi purported to be simply a method for comparing the results of mock tests on a regional or national scale but, at particular points since the 1960s, it has been blamed for a wide variety of social ills. It has been blamed for underpinning an education system based not on learning but on fact cramming, multiple choice examinations, teaching to the test and

obsessed by educational scores. It has been blamed for violence and bullying in schools.[3] It has been blamed for preventing the development of other forms of assessment of the potential of young people, such as communication skills and life skills. It has been blamed for limiting students' educational and social choices, through a process which Kariya (1986), in his study of elementary and junior high school students, has referred to as 'self-selection'. As Sugimoto (2010: 137) explains, '[B]ecause the emphasis on *hensachi* marks generates a culture in which scholastic ability is viewed as the only measure of individual competence, low *hensachi* performers also tend to have low self-esteem'. The expression '*hensachi ningen'* (*hensachi* humans) came to refer to the idea that products of Japanese education system were best thought of as nothing more than their *hensachi* scores. According to Dore and Sako (1999: 25), indeed, the *hensachi* education became what they called the 'boo-word par excellence', summing up all that was stifling, uncreative and anti-educational in the school system. We will explore some of these charges against the *hensachi* system in the context of three periods when they gained particular media attention.

The first public wave of criticism against the *hensachi* system arose in the mid-1970s, particularly in Osaka and Tokyo. In public junior high schools in Osaka, by that time, school guidance counselling, through which teachers advised parents on which schools to apply, was already largely based on *hensachi* scores.[4] Schools allowed private companies to use their classrooms when conducting *mogi shiken*. The close relationship between public schools and private test companies – including the leaking of students' marks and results of senior high school entrance exams to test companies, as well as an over-reliance on the *hensachi* scores themselves – came to be seen as problematic not only by the mass media but also Osaka's Board of Education (Okamoto, 1985: 90-1, 100-1, 109-11). The Osaka Prefectural Board of Education asked local school principals to refrain from using *mogi shiken* in 1976. An investigation by Tokyo's Board of Education also revealed that *mogi shiken* were taking place in most of the city's junior high schools, with 80% of them being conducted during actual class hours (Nakazawa, 2004: 151). The Tokyo Board also asked junior high schools to stop conducting *mogi shiken* during class hours and not to rely on *hensachi* in guidance counselling.

The media in Tokyo particularly criticised private senior high schools for using *mogi shiken* and associated *hensachi* scores to pre-screen and assess applicants *before* their official entrance exams (Ogawa, 2000: 132). One news report featured the story of a junior high school student (student S), who wanted to go to a private senior high school (P senior high school) in Tokyo:

> While this was kept secret from students and parents and was shared only between P senior high school and junior high school teachers, P senior high school took as many as 80% to 90% of its students through *tangan* recommendation (a system that meant students must go to P school if they were accepted), which, in the case of P school, was primarily based on the *hensachi* which reserved places for students with a *hensachi* score of 57 or above before the formal written entrance exam. Student S started his preparation for entrance exams later than other students, and so his overall *hensachi* score was

> relatively low (53) for P senior high school, but his recent *hensachi* score was increasing by leaps. Knowing the 'secret' of P senior high school's entrance exam, his teacher (Teacher G) recommended him to apply to other senior high schools. But he decided to apply to P senior high school via a formal written exam and studied hard for the exam, without knowing the 'secret' that there were in fact hardly any places still open at this point, despite P senior high school *officially* saying 500 places were available. Although he achieved the highest score among all the applicants to P senior high school from his junior high school, including those who already had reserved places at P senior high school, student S was not offered a place (Asahi Shinbun, 1975, 23 December).

As a result of intensifying criticisms against the *hensachi* and *mogi shiken* in the mid-1970s, the Ministry of Education undertook the first ever nationwide investigation, which showed that *mogi shiken* were being conducted in all of Japan's 47 prefectures, and that 60% of them were being taken during class hours (Nakazawa, 2004: 151). The Ministry subsequently notified regional education boards in 1976 that junior high schools should not 'rely' (*izon suru*) on *mogi shiken* in guidance counselling; that it was 'undesirable' (*nozomashikunai*) for junior high schools to organise *mogi shiken* during class hours; and that teachers and private companies should refrain from behaviour that looked like 'collusive relationships' (*yuchaku*). Local education boards, however, were required to comply with the notification only on a voluntary basis, and many simply ignored the recommendations (Nakazawa, 2004: 152).

A second wave of criticism of *hensachi* occurred in 1983 and was linked to wider concerns which were being expressed in Japan at that time about 'examination hell' and the intensifying pressure that was seen as being applied to students. A large part of the blame for this situation was laid on the *hensachi* system and the *mogi shiken*. Given the mounting criticism against the examination hell, the Ministry of Education, under instruction from Prime Minister Nakasone Yasuhiro who was in the process of setting up a major review of the whole of Japanese education (see Schoppa, 1992), issued a new notification. This notice was primarily a reissue of the 1976 notice against *mogi shiken* and the use of *hensachi* scores, but, acknowledging its ineffectiveness, was promulgated at a higher administrative level (Nakazawa, 2004: 153).

Despite these interventions, *hensachi* and *mogi shiken* remained an active tool in preparation for senior high school and university entrance. Following the introduction of the first-stage university entrance exam for all applicants of national and public universities in 1979 (changed to *sentā shiken* from 1990), data provided by private companies became increasingly important for students at senior high school. After students finished their first-stage university entrance exams, they would mark their own papers (based on results which were published in the newpapers) and send them, together with the names of the universities to which they were considering applying, to private companies which would then predict their chances of entry based on their *hensachi* (Takashima, 1983: 44-7). This information helped students decide which universities to apply to in the second-stage entrance exams which took place at each individual institution. One private company claimed that it received data from the self-marked papers of 170,000 out of all the 350,000 test-takers of the first-

stage university entrance exam in a particular year (Takashima, 1983: 48). The market for the companies which ran the *hensachi* system was massive; from *mogi shiken* for elementary school children to the sales of 'pass underpants' (*gōkaku pantsu*), one of the largest companies claimed to be earning more than 10 billion yen (93 million USD) in a single year by the early 1980s (Takashima, 1983: 75).

As Takashima (1983) explains, teachers increasingly came to rely in guidance counselling sessions on the so-called 'bibles' (*tora no maki*) produced by private companies which has the *hensachi* of every school and programme in Japan. They were important because students could risk getting into no schools if all their choices were pitched too high. Hence they tended to be advised to choose one institution which their *hensachi* score suggested was a bit too high, one which appeared just right, and an insurance choice which appeared a bit too low. Teachers' reputations were affected by getting students to the next level of the system which often meant dampening down student ambition for better schools which might be their real first choice. Teachers, as well as students and their parents, therefore needed robust *hensachi* scores on which to base their judgments; as a result, by the mid-1980s, third-year junior high school students were taking between six and ten *mogi shiken* every year in at least half of Japan's prefectures (Hurst, 1985: 9).

The third and, as it turned out, the most significant wave of protest against the *hensachi* system began in 1992 and was responsible for the peak in reporting shown in Figures 5 and 6. The background to the protest lay in Saitama Prefecture where, it was reported, teachers at public junior high schools and private senior high schools had been having private meetings to discuss individual students' probability of passing senior high school entrance exams based on their *hensachi* scores (Ogawa, 2000: 134-5). Since the mid-1980s, teachers had been making pass/fail judgements based on the result of these scores during these preliminary meetings which were held *before* the formal entrance exams (Ogawa, 2000: 134-5). Private senior high schools had been making agreements with junior high school students, for instance, that the students would not apply to any other senior high schools if they were pre-allotted a place on the basis of their *hensachi* (Takeuchi, 1993: 17). Such a system had actually been in place for decades in various prefectures, including Tokyo and Aichi. However, the head of Saitama's Board of Education, Takeuchi Katsuyoshi, publicly condemned it for its lack of transparency and the involvement of private companies in the process of senior high school selection, and the Board moved to officially prohibit junior high schools in Saitama from passing on the *hensachi* scores to private senior high schools. Takeuchi (1993: 4) further blamed parents who, he said, overly relied on *hensachi*, although, according to Nakazawa (2004: 153), the real issue was probably Takeuchi's concern to stop the drain of students to private senior high schools at a time when the fifteen-year-old population was rapidly decreasing. In any case, according to Ogawa (2000: 135), the majority of private senior high schools in Saitama boycotted the briefing sessions organised by Saitama's board of education in relation to the prohibition, and the Principals of the prefecture's junior high schools ignored the ban.

When the Minister of Education, Hatoyama Kunio, heard about the Saitama case, however, he set up a further investigation. This confirmed that junior high schools in most of Japan's prefectures were still conducting *mogi shiken*, in many cases during class hours, and that junior high schools in at least nine of Japan's 47 prefectures were still providing *hensachi* scores to private senior high schools. This time the Ministry took more decisive action. In 1993, the Ministry banned *mogi shiken* from public junior high schools (which constitute 97% of all junior high schools in Japan) and prohibited the use of *hensachi* data in guidance counselling and in the admissions process to private senior high schools.

After the Ministry directive of 1993, schools in some prefectures, including Iwate, Hokkaido, Tokyo, and Kyoto, began to organise their own tests at the school district level to replace the *hensachi* tests (Ogawa, 2000: 146). These tests were used to assess the academic achievement of junior high school students and to help the students and their teachers decide to which high school they should apply. As Dore and Sako (1999: 25) pointed out, the only difference from the *mogi shiken*, was 'cosmetic', in that the teachers [did] not normalise the scores and 'the calculation of a "standard deviation score" [was] studiously avoided'. *Mogi shiken*, though banned from public junior high schools, were also still taking place at other venues, such as private senior high schools, vocational schools and *juku*/*yobikō*. They continued to be particularly important for junior high school students in urban areas where there was a wide choice of senior high schools and the prefectural tests organised at a school district scale were inadequate for providing statistically reliable data on which students could make decisions about which senior high school to apply (Ogawa, 2000: 146-7; Sugimoto, 2010: 133).

Even if private companies were banned in 1993 from doing their *mogi shiken* in schools, therefore, the *hensachi* remained alive and kicking among both junior and senior high school students. Ironically, the ban on private companies' tests in public junior high schools probably intensified the power and influence of private companies over junior high school students in Japan. Since junior high school teachers were officially banned from referring to *hensachi* data in their guidance counselling, junior high school students relied even further on cram schools (*juku)* for guidance about which senior high school they should apply to, similar to the way that senior high school students (and *rōnin* students) relied on *juku* and *yobikō* for advice on which university they should apply to (Ogawa, 2000: 147; for a good overview of the link between *juku* and university see Stevenson, Lee and Baker, 1992).

The persistence of **hensachi** *since 2000*

As Japan entered the 2000s, the demise of the *hensachi* was widely predicted. Just as the *hensachi* had been introduced in the 1960s to help guide student choice as demand for high school and university places rapidly outstripped supply, so the rapid decline in the number of young people passing through the education system in the early 2000s implied the opposite, namely that the supply of places at senior high school and university would outstrip demand, and that the *hensachi* could therefore become a redundant tool. The drop in the number of 18-year-olds in the population in Japan - over 42% in the 20 years between 1992-2012 - is well-documented and it was widely predicted that by the end of 2008 the number of places at

university would be equal to the number of applicants and hence competition for places and the contingent 'examination hell' would disappear (see, Goodman, 2005). Some of the biggest ranking agencies, such as the *Asahi Daigaku Ranking*, proposed that it was time for universities to move away from rankings based on input factors (such as *hensachi*) to rankings based on experience while at university (such as student satisfaction surveys) or on output factors (such as the employment records of students on graduation).[5]

These predictions proved wrong, in part because the proportion of high school graduates who went to university went up by 25% between 1992 and 2000, which largely compensated for the smaller cohort size. What did change, however, was the way that universities recruited students. From the late-1990s onwards, lower-tier universities realised that they were now in a competitive market to get students to apply. While competitive written exams were still widely used for selection to *elite* universities, alternative forms of entrance exams such as via the recommendation of particular schools, were increasingly used at the less elite institutions to fill their places (Nakamura, 2011: 145). By around 2010, one out of three students were offered places at university through recommendation entrance exams. Ironically, though, some students were submitting the results of *mogi shiken* as part of their recommendation materials (Kuroishi and Takahashi, 2009: 8) for which there was still huge demand as suggested by the following statistics. According to the company Kawaijuku, 3.07 million first, second, and third year senior high school and *rōnin* students took at least one *mogi shiken* they had set during 2016 (Kawaijuku, n.d.). According to the company Benesse, nearly 448,000 university applicants took one of their *mogi shiken* in June 2017; this accounted for almost 76.8% of those who applied to take the *sentā shiken* (National Center Test for University Admissions) in January 2018 (Benesse, n.d.).

Despite the introduction of new forms of university entrance, schools and mock exam companies remain inseparable. Many senior high school students still apply to take *mogi shiken* through their schools even if they do not take them at the school itself. Nearly 95% of senior high schools from which more than one student entered national and public universities in 2017 continued to support *mogi shiken* organised by a private company (Benesse, n.d.). The main means of ranking institutions and programmes remains their *hensachi* score. This can be seen not only in the annual *Asahi Daigaku Ranking* which continues to publish the *hensachi* score for every university programme but also in publications such as *Abunai Daigaku Kieru Daigaku* (Going Broke Universities, Disappearing University) published annually since 1993 by the journalist Shimano Kiyoshi which lists universities by a single overall *hensachi* score and places them into one of ten categories from most to least selective (the most selective including just 15 of Japan's 778 universities).[6]

As for students at junior high school, despite the various attempts over the years to ban the use of *hensachi*, a survey of nearly 3,000 first year students in full-time public senior high schools in Saitama prefecture in 2011 showed that about 80% of these students had used *hensachi* scores, calculated from *mogi shiken* taken outside of school, when they chose a senior high school to which to apply (Yoshino, 2012: 451-2). Indeed, despite specific

government instruction not to do so, public junior high schools in multiple prefectures have reportedly continued to host *mogi shiken* in their schools and, indeed, a newspaper reports a case where a junior high school partially subsidised the fees of *mogi shiken* with a budget from their local board of education (Okayasu, 2016: 9).

Conclusion

There remain many negative perceptions of *hensachi* in Japanese society today. So-called '*hensachi* elites' (*hensachi erīto*) – those who held the top jobs in both the public and private sectors largely because they had had high *hensachi* when at school which got them into the top universities and jobs - were criticised as one of the causes of the bursting of the bubble economy and economic stagnation in the early 1990s (Ochiai, 1997). The fixation on *hensachi* scores and the standardised knowledge it tests have been held responsible for hindering the nurturing of individuality (*kosei*) and the ability to 'think outside the box'. As Sugimoto (2010: 133) puts it, 'Just as ability-based salaries increasingly represent the human worth of each employee, so too are the numerically calculated *hensachi* marks treated as though they were the sole indicator of the total value of each student'. One neuroscientist has even argued that people with high *hensachi* scores tend to have developed their left temporal lobe more than other parts of the brain and this unbalance leads to a lack in communication skills (Katō, 2015).

The influence of *hensachi* on educational remains very strong in Japan. It both underpins and undermines the ideology of educational meritocracy which many have seen as key to Japan's modernisation in the Meiji period and its rapid economic growth in the post-war period (see, for example, Vogel, 1983). According to Zeng (1999: 119), such meritocracy provides transparency and efficiency, fuels economic growth, maintains social equilibrium and legitimacy of authority, and produces an intensely motivated, high achieving and hardworking workforce. The *hensachi* underpins this meritocratic educational system because - as the father of *hensachi*, Kuwata Shōzō claimed was its only purpose - it improves the transparency and efficiency of the system and helps guide individual students (and their teachers and families) through it.

On the other hand, *hensachi* also undermines the ideology of educational meritocracy in Japan because it upholds and consolidates the structural inequalities which exist in Japanese society. Only those with access to resources can afford the kind of support which the real-life student in the film *Biri Gyaru* , with which we started this paper, received which enabled her to get into Keiō University. It is well documented that the children of parents who are in professional jobs or who have been to university study much harder out of school than the children of parents in non-professional jobs who have not been to university (Sugimoto, 2010: 136; Kariya, 2013). The *hensachi* system, with its supposed objective measurement of effort and academic achievement, masks these social inequalities. Like all systems of ranking, it has clearly been open to abuse and has been used by some teachers, in particular, to game the complicated process of graduating students from one level to the other in the education system.

Whether one sees *hensachi* as a positive or a pernicious influence on Japanese education, depends in large part on whether one starts with a functionalist (based on social consensus) or a Marxist (based on class conflict) view of education systems. What is uncontestable, though is that *hensachi* has had an influence far beyond the purely educational sphere for which it was designed. A quick internet search, for example, demonstrates the wide use among young people in Japan of the slang expression '*ganmen hensachi'* (facial *hensachi*) to refer to the *relative* attractiveness of people's looks. Indeed, we would propose that, as a result of *hensachi*, almost everyone in Japan implicitly understands the difference between a requirement (an absolute score) and a probability (a relative score) even if they do not fully understand the way in which probabilities are derived. These are important transferrable skills in a society which can already claim to have among the highest rates of numeracy in the world. The reason why *hensachi* has been so little studied as an educational and social phenomenon is, we suspect, simply because it has become so taken for granted. We hope this paper sheds some light on such an important element of Japanese society.

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[1] There is no definitive English translation for *hensachi* so, for the purposes of this paper, we have decided to translate *hensachi* as 'standardised rank score' since the idea that *hensachi* provides a ranking based on a standard deviation bell curve distribution of a wide population of students all taking the same test is how it is most commonly understood in Japan.

[2] For example, if in a maths test, student A = 76, B = 55, C = 58, D = 100, E = 65, F = 60, G =50, H = 0, then, average (for all the students) = (76 + 55 + 58 + 100 + 65 + 60 + 50 + 0) ÷ 8 = 58, and standard deviation =

$$\sqrt{\frac{(76-58)^2+(55-58)^2 \ldots+(0-58)^2}{8}}=26.41$$

So, student A's *hensachi* = $(\frac{(76-58)}{26.41}\times 10)+50=56.8$. Likewise, Student D = 65.9, and student H = 28 (Zeng, 1999: 107).

There are no official or government (local or national) sanctioned *hensachi*, but every senior high school, commercial school, technological school, and every programme at a higher educational institution will have a *hensachi* score ascribed to it by different commercial players. The way in which companies calculate the *hensachi* of programmes varies considerably. In some cases, the *hensachi* score show the score you need to have a 50% probability of gaining entry; in some cases an 80% chance; in some cases, the probability is not clearly presented at all. *Hensachi* scores in most cases, however, range around 10 marks above or below 50 for each standard deviation, and statistically only 5% of any sample can in total be either above 70 or below 30. A high *hensachi*, say 70, means a student is better than at least 97% of the population on that test. In 2018, the highest recorded *hensachi* entrance course for a university course was 80 for the University of Tokyo Science III programme. At the other end of the scale, a course with a *hensachi* entry score in 2018 in the 30s or even low 40s would probably be able to offer a place to anyone who applied. The *hensachi* of every course at every university in Japan can be seen at: http://daigakujyuken.boy.jp/ which works on a scale of 35 to 80.

While *hensachi* is generally associated with entry to senior high school or university, some junior high schools and even elite private elementary schools now have *hensachi* scores attached to them to guide those preparing for their entrance exams. For some children, therefore, the concept of *hensachi* may be familiar even as young as the age of five.

[3] In a collection of comments from fellow 14-year-olds about the so-called Kobe 'school killer' who murdered two schoolchildren in May 1997, one appears to express empathy with the killer in saying, 'I have not gone so far as to take revenge on school or teachers but I often feel stressed with school or *hensachi*….I understand the boy's feeling' (Yoneyama, 1999: 4).

[4] Although, technically, compulsory education in Japan is only until the end of junior high schools, over 90% of students since the mid-1970s, and today over 98% of students, continue to senior high schools. All senior high schools are ranked hierarchically based on their academic level and they function as the key institutions of selection and allotment of children

in Japan (Arakawa, 2001: 167). Moreover, as Ogawa (2000: 145-6) has pointed out, unlike senior high school graduates – who can retake university entrance exams several times as what is known as *rōnin* (literally, masterless samurai, since they no longer had a 'master institution' to which they belong) – junior high schools have always felt a responsibility to send their students directly to senior high schools without a gap.

[5] The annual Asahi *Daigaku Rankingu* (University Ranking) has since 1994 actually provided around 80 indicators of the comparative quality of universities from the number of overseas students to the assessments of high school teachers to patents registered to the number of references in fashion magazines. The annual *Daigaku no Jitsuryoku* (The Real Power of Universities) published since 2008 by the Yomiuri newspaper group focuses more on the quality of education provision, curriculum design and teaching in its rankings and has rankings of indicators such as dropout rates, remedial education programmes, job placements supported by alumni associations and class sizes for language education. The weekly magazine *Shūkan Tōyō Keizai* also regularly puts out comparative data on Japanese universities, concentrating on financial indicators such as expenditure on education and research per student, research income, student-faculty ratios, annual income of alumni at age thirty as well as the ratio of increase/decrease of applications and capital adequacy ratios.

[6] Shimano also publishes another ranking book based on the employment records on graduation of university students under the title *Shūshoku de Toku suru Daigaku, Son suru Daigaku Ranking* (Ranking of Universities by those which Win and those which Lose in Job Placements).

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