The Data-doppelganger and the Cyborg-self: Theorising the Datafication of Education

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In this paper, I use the notion of the data-doppelganger (Williamson, 2014) as a theoretical lens through which to view the datafication of education. The data-doppelganger is the version of the self which exists in the significant quantities of data collected about both children and teachers. A psychoanalytic analysis of the literary genre of the doppelganger identifies the role of the double as a second self, which completes the ego, expresses the repressed desires of the id and regulates the subject as the superego (Dolar, 1991). Using this psychoanalytic understanding of the double, I explore the role of data in the policy document *Bold Beginnings* (Ofsted, 2018). I find that data holds a mirror up to the child, repositioning it as a normalised pupil; play can be understood as a dangerous, chaotic practice which must be suppressed and data functions as a regulatory device to objectify and control both teachers and children.

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Keywords: Datafication; Teacher subjectivity; Child subjectivity; Accountability; Psychoanalysis

Introduction

Data plays an increasingly prominent role in all aspects of our lives. A simple example of this can be seen in a recent advertisement for information services company, Experian (2018). This advert features comedian, Marcus Brigstocke, playing Dan and Dan's data-self. The two do everything together; the self and the data-self are described as 'inseparable'. The data-self harvested by Experian, is presented as an improved version of the self and the strapline for the advert is 'get to know your data-self with

Experian'. The idea expressed in this advertisement is that data, as a controllable, predictable, measurable version of the self is more desirable than the slightly faulty, unpredictable, organic subject. Dan and his data-self need each other. Without the machine-readable data-self, Dan would not be able to get the things he wants in life. Dan and Dan's data-self together form the whole person. Data has become a part of who we are.

Braidotti (2013) explores the posthuman condition in which technology and organic are fused: a new self emerges, which includes a physical and a data-self. She argues that 'all technologies can be said to have a strong bio- political effect upon the embodied subject they intersect with' (p90). Similarly, Jurgenson (2012) posits an 'augmented reality' in which the physical and the digital enmesh to form a new kind of reality. The ontological change conceptualised here is a move towards a posthuman existence in which data not only influences how we think and act but leads to a new kind of being in which humans think through data. Haraway (1987) refers to this as the formulation of a cyborg- 'theorized and fabricated hybrids of machine and organism'(p3).

In order to understand the process of the creation of the cyborg-self, a separation of the data and the organic self is useful. This paper explores the function of the data aspect of the self in forming subjectivity or the concept of who we are. It takes the trope of the doppelganger, a figure from the literary genre of the same name and examines its function within education. The word *doppelganger* means *double* and is useful as an analogy for the data-self. In order to understand this trope, psychoanalytic, literary and film analyses of the genre are used to shed light on its relevance to education. This multidisciplinary, creative use of the doppelganger figure is termed 'doppelganger as method'.

The object for analysis in this case is a report produced by the UK Office for Standards in Education, Children's Services and Skills (Ofsted) into 'good practice' in Reception (the final year of English early childhood education) (Ofsted, 2017). This report, entitled *Bold Beginnings - The reception curriculum in a sample of good and outstanding primary schools* summarises Ofsted's findings of a number of schools which they judged to be good or outstanding. It has provoked a strong, negative response from the early years community in England, who feel that it promotes an approach to teaching which is incompatible with discourses of good early years practice (TACTYC, 2017). Although this report focuses on early years education, its themes are echoed in education as a whole.

Datafication

Cheney Lippold (2017, 9) defines datafication as "the transformation of part, if not most of our lives into computable data". He explores the way people are converted to data, which is then used to measure and predict who they are and will be. Although data is seen to be more authentic, more accurate than human judgement (Beer, 2019) Cheney-Lippold argues that it is less authentic. What is important about data is not so much whether it presents an authentic version of the embodied subject, but whether it can be used to categorise and classify the subject. This impacts on subjectivity as added onto the embodied self are "layers upon layers of …algorithmic identities" (Cheney-Lippold, 2017, 5). These algorithmic identities are comprised of calculations made from the easily measurable aspects of people's lives and used to construct a data version of the self. These data-selves then become the focus of what Beer terms the "data gaze" (Beer, 2019). This is a form of surveillance in which the data-double (Bart, 2005) is the object of surveillance rather than the embodied subject. Beer discusses the regulatory power of

this data gaze, exploring who is empowered to make data speak and what is rendered visible or invisible.

Bradbury and Roberts-Holmes build on this, exploring the role of data in early years education (Bradbury, 2019; Bradbury and Roberts Holmes 2016, 2017a, b, Roberts-Holmes, 2015; Roberts-Holmes and Bradbury, 2016a,b). They define datafication as the increase in volume of data, the changing use of data and the impact this data has on subjectivities. The recent changes in the prominence of data in education reveal both qualitative and quantitative change in its use. The introduction of digital technology has impacted on the role of data, as society expects digital data to improve education (Bradbury and Roberts-Holmes, 2017b).

The inspection and regulation of schools in England and many other countries depends on data, as this is the key performance indicator used to judge a school's effectiveness. For English early years education, the key measure of effectiveness is the Good Level of Development (GLD). This describes children who have met the expected level of attainment in five of the seven areas of learning which constitute the Early Years Foundation Stage (EYFS) curriculum. Data is thus used to judge the child, the teacher and the school. Pierlejewski (2019) argues that this emphasis on data signifies a move from child-centred to data-centred education. This paper takes the conceptualisation of datafication further, positing a new cyborg-self, in which data impacts so much on the teacher and child that their subjectivity fundamentally changes. The creation of the cyborg-child is explored alongside the development of the cyborg-teacher.

Doppelganger as method

The novel, analytical approach developed in this paper, which I call 'doppelganger as method', builds on Burman's 'child as method' (Burman, 2018a and b). The project 'child as method' takes the idea of child or childhood and examines how it functions to reflect

but also constitute socio-political axes and dynamics. It resists the 'traditional, modern and Western abstraction of the child from socio-political relations that position it as other' (Burman, 2018a,18). The child in this sense, is a trope or figure, through which the research topic is viewed. In the same way, the idea of the data-double or doppelganger is used in this paper as a trope through which to view educational policy and practice. It examines the function of data in creating subjectivity; in creating the cyborg-self.

Burman describes 'child as method' as being a 'research analytic' (Burman, 2018b, 3) rather than a particular method. It is not a set of instructions for analysing data. Rather, this approach brings together into a creative dialogue, a range of analytical approaches from many diverse disciplines. An example is Burman's use of psychoanalysis, feminist, postcolonial and childhood studies in her study of Brexit (Burman, 2018a). In a similar way, 'doppelganger as method' utilises analytical devices from literary criticism, psychoanalysis, Foucauldian analysis, digital sociology, education studies and film studies. It takes the genre of doppelganger literature; literary and film analyses of the genre; psychoanalytic studies of the doppelganger; the concept of the cyborg and conceptualisations of data in education studies to investigate the function of data in education.

The development of the data-self, the technology aspect of the cyborg, can be understood through the trope of the doppelganger. The use of the doppelganger in education is not new. Williamson first used the term to describe the impact of datafication on children in his (2014) paper. He argues that education is being made increasingly 'machine readable' (p1). Pierlejewski (2019) builds on this, exploring how some data-doppelgangers are more useful to the teacher than others, leading to disadvantage for children with English as an additional language. However, the full resources of this metaphor as a way of reading current educational policy and practice

have not yet been explored. The first stage in this exploration is an examination of the doppelganger genre in literature and film.

The doppelganger genre developed during the Enlightenment period and was a feature of the Gothic. It can be seen in such stories as E.T.A. Hoffmann's *The Devil's Elixirs* (2008), Edgar Allan Poe's *William Wilson* (2009) and Dostoevsky's *The Double* (2004). It is also extensively explored in film, examples being *The Matrix* (1999) and an interpretation of Dostoevsky's novel of the same name, *The Double* (2013). Rank's (1971) psychoanalytic analysis of the genre identifies several key features of the doppelganger story: all are explorations of identity as they tell us about the relationship between the self and the self; the double is always inextricably linked to the hero, so that one cannot exist without the other; the presence of the doppelganger is a source of great anxiety to the subject, who experiences feelings of deep disturbance at the discovery of another self; the double is always ambiguous, both realising and restricting hidden desires and at the end of the story, the subject kills the double, but as the double is the self, this is an act of suicide.

Psychoanalytic concepts

Following on from Rank (1971) and Tymms' (1949) psychoanalytic study of the doppelganger genre, in which they discuss the narcissistic nature of the double, I use the psychoanalytic concepts of Lacan and Freud as a useful heuristic, through which to understand datafication. Dolar (1991) explores the notion of the double as an example of what Freud (1919) referred to as 'the uncanny'. The German word for this is *Das unheimliche* and Freud goes to great lengths to explain that the meanings of the word *heimlich* (homely, comfortable) can be extended to mean secret, hidden from others and by extension occult and uncomfortable, in other words the opposite of its original

meaning. By *unheimlich,* Freud was referring to occurrences which make the subject feel uncomfortable, strange, disturbed, an example of which could be meeting someone who looks exactly like you. Dolar argues that this word *un/heimlich* references the tradition within psychology of the drawing of a line between exterior and interior. As *unheimlich* is not quite interior (homely) or exterior (strange, occult) it represents a place where the uncanny happens. The doppelganger and the notion of the cyborg challenge this, as does the uncanny in all its forms as the boundaries between exterior and interior are blurred. The doppelganger is an example of the uncanny as the division between the consciousness and the body is blurred (Dolar, 1991). This leads to feelings of great anxiety as the fabric of reality appears to disintegrate. It can also be applied to the cyborg-self as data is not just exterior but becomes a part of subjectivity.

In his paper, Dolar (1991) argues that the double stands for all three parts of Freud's model of the psyche- the ego, the id and the superego. A very simple explanation of these functions is that the ego is the rational, reality-oriented part of the psyche, the id is the instinctual drive and the superego performs a regulatory function. Dolar finds that the doppelganger is an essential part of the ego; it allows the subject to carry out the repressed desires of the id and it regulates the subject as the superego. These functions can be better understood in relation to an example of a story. For this purpose, I will use Edgar Allan Poe's 1839 short story *William Wilson* (2009). A summary of Poe's *William Wilson* follows:

William Wilson

The narrator, referred to as William Wilson, encounters a boy at school with the same name and birth date as himself. The double, referred to as 'Wilson,' at first becomes close friends with William and begins to act more and more like him. As time goes by, William begins to hate Wilson as he feels that he is being increasingly controlled by his

'distasteful supervision' (p157). William then spends some years trying to forget Wilson in a 'vortex of thoughtless folly' (p158). The double however, continues to haunt William, preventing him sinking further into a life of debauchery. An example is his intervention in a card game where William intended to dupe a fellow student.

In a final encounter with the doppelganger, William is just about to seduce his host's wife, when Wilson again appears. William attacks his double, piercing him with his sword but realises that he has attacked himself. The doppelganger utters his last words, saying 'In me didst thou exist- and, in my death, see by this image, which is thine own, how utterly thou hast murdered thyself' (p165).

A psychoanalytic analysis of the story

Building on the psychoanalytic analyses of Rank (1971) and Dolar (1991), I formulate my own psychanalytic analysis of the story of *William Wilson*. The three aspects of the psyche can all be seen represented in the self and the second self. An exploration of each psychoanalytic concept follows:

The ego

The double functions as the ego, as the mirror image of the subject and the subject itself, together become the ego. Dolar (1991) uses Lacan's (1977) theory of the mirror phase to explain the use of the mirror in enabling the subject to see itself as an object. The subject, however, loses something in becoming aware of the reflection of the self. It loses its sense of self-being, the rejoicing in the being, without an awareness of the self as an object in relation to other subjects. Lacan refers to this as a castration or the discovery of lack, a loss of an essential part of the subject. This process is, however, what enables the subject to become 'I' (so inscribing alienation or otherness within the constitutions of self). It is through the double that the ego is formed. In Poe's story, the

presence of Wilson enables William to see himself as an object. He reflects on who is in relation to the double, he sees himself in a different way. The double therefore changes the subjectivity of William.

The doppelganger often represents a rational, measured, morally superior version of the self. This can be seen in the story as Wilson is referred to as possessing a higher moral sense. It contrasts sharply to the immoral, irrational, debauched subject in the form of William.

The id

In some doppelganger stories it is the double who expresses the repressed desires of the id (Dolar, 1991) but in this example, it is the subject who expresses them. These repressed desires are the unconscious, instinctual needs for pleasure which must be satisfied at all costs. In *William Wilson*, the subject- William allows himself to indulge in every pleasure and, in doing so, disregards all others, treating them as mere objects. William 'spurned even the common restraints of decency in the mad infatuation of [his] revels' and in doing so 'out-Heroded Herod' (Poe, 2009, 159).

An aspect of these revels is the card game- a kind of play. This can be seen as reflecting the expression of desires which are echoed in the more id-driven behaviour of children. Games can be seen as an expression of the desire for power over others. The game is a kind of trick, which allows William to dupe his fellow students. This is dangerous play which must be stopped by the double and indeed, in the story, the double steps in and stops the card game.

The superego

The regulatory function of the doppelganger limits the subject's agency. In the story, Wilson acts as the adviser at school, offering advice from a morally superior position.

William finds this 'distasteful supervision' (Poe, 2009, 157) unbearable as his agency is removed by the 'disgusting patronage'. He later laments 'Poor indemnity for natural rights of self-agency so pertinaciously, so insultingly denied' (p163). Wilson intervenes to stop William achieving his desires, convicting him of his folly. William sees this as performing the role of admonisher; destroyer of honour; thwarter of ambition; revenge; passionate love and avarice. Wilson appears to be always there, whispering in William's ear, controlling his behaviour and limiting pleasure. William feels that the presence of the doppelganger prevents the him from carrying out his desires.

A 'doppelganger as method' analysis of *Bold Beginnings*

Following on from this exploration of the role of the doppelganger in literature, I use the psychoanalytic concepts identified by Dolar (1991) to analyse a key document-Ofsted's report *Bold Beginnings* (Ofsted, 2017). This method entails asking the following questions about the data:

- How does the data-doppelganger complete the ego?

- How does the data-doppelganger reveal the repressed desires of the id?

- How does the data-doppelganger regulate the subjects?

Using the executive summary of the report as the main data for analysis, these three questions are applied to each paragraph, with reference to the story of *William Wilson* as an example. The role of the doppelganger in policy is not overt. It is hidden from view in the unsaid and the implied. The analysis is structured around Freud's model of the psyche with each section exploring one of the three aspects.

Doppelganger as ego

The data-doppelganger or data version of the child, like Wilson, is a safe and predictable version of the self. It is constructed from numerical data, it is governed by algorithms and can be manipulated and controlled. The data-doppelganger makes progress in measured steps on a steady upward trajectory towards a standardised goal. It is a decontextualized, normalised, objectified version of the self, untroubled by emotions, culture or socioeconomic status.

To be successful, teachers need to create data-doppelgangers of their pupils. These take the form of a vast collection of data which is used to make judgements about the progress and attainment of the child. The formulation of these doppelgangers must be the primary aim of the teacher as, in so doing, the doppelganger of the teacher will also be constructed. This activity is narcissistic in nature as it involves making the formulation of good data, the polishing of the teacher's doppelganger, the obsession of the teacher. The teacher must spend time gazing into the mirror of this data-double, analysing the data and making it 'right'. The mirror double, in the form of data about children, reflects back to the teacher the quality of the teaching. The mirror of data enables teachers to see themselves as objects and therefore constructs the ego. It is the reflection which enables the teacher to know if practice is deemed worthy. In this way, the data and the subject become 'inseparable companions'- data-self and embodied-self fuse to become the cyborg-teacher. 'My ego identity comes from my double' (Dolar, 1991, 12). Without it, the teacher is unable to know who they are.

The first paragraph of *Bold Beginnings* (Ofsted, 2017, 4) states: 'for too many children…their Reception year is a missed opportunity'. Underlying this, is the assumption that all children have the capacity to meet the early learning goals, the measure of success in early years education. This concept of the child sees children as a homogenous group. They are all the same, decontextualized raw materials whose

function is to formulate data for the school. The subject of the child, the physical embodied child, is less important than the data-doppelganger as it is the doppelganger which will be used to judge the school. Dolar (1991) argues that the mirror image is more real than the subject because it is not constrained to a physical body. The immaterial reflection survives the body and so constitutes the essential self. In a similar way, the data-doppelganger, as immaterial, will outlive the embodied child in the form of data remaining in the virtual world even after the child has grown up. In this way, the doppelganger is more valuable than the actual embodied child.

The recommended assessment practices which *Bold Beginnings* proposes are 'checks…standardised tests…and scrutinies of work' (Ofsted, 2017, 4). These assessments are measures against the norms set by the state. For each aspect of this norm, a binary decision is made about whether the child can meet the norm or not. An example might be the phonics check which assesses whether the child knows all the main phonemes of English. This type of assessment measures the child against a norm, a norm, which is presented as value free, but is actually based on gendered, raced and classed ideas of what the child should be (Burman, 2017). This normalisation process presents the child with data about themselves. It holds the mirror of data up to them. They discover through the question 'do you know this letter?' what they do and do not know in relation to expectations. In this way, data acts as a mirror which presents a new version of the self to the child.

Prior to entry into school, the child's subjectivity can be argued to be primarily dependent on relationships within the family (Burman, 2017). The child's ego is constructed through the 'I' and 'you' of parent and child. As soon as the child enters the education system however, and is measured against norms, they discover in the mirror of data that they are deficient in many ways. They see themselves as the teacher sees

them, as 'they' rather than 'you'. They are compared to other children, to normative expectations and see themselves as an object. Thus, using the Lacan's mirror phase as a heuristic, the subjectivity of the child can be seen as altered. The innocence of the pre-data-self is lost, and a new form of normative subjectivity is created: a fusion of data and embodied self- the cyborg-child.

Bold Beginnings may be paving the way for impending changes to English early years curriculum and assessment. One of these changes will be the introduction of a statutory reception baseline assessment in 2020 (Standards and Testing Agency, 2018). The recommendation of testing as an efficient form of assessment is aligned with the methodology used in this new baseline. The baseline will move the presentation of the mirror of data forwards in time as children discover during their first few weeks of school that they are to be measured against a norm. Indeed, teachers have noted this impact on child subjectivity during trials of the previous baseline in 2015. One teacher reflects: 'Some children looked at me and said "I can't read" when asked to read parts of the assessment. It was heartbreaking to see their reaction to it and I spent a lot of time reassuring children' (Bradbury and Roberts-Holmes, 2016, 16). This account poignantly reveals the moment when the child discovers what they don't know. Prior to this, reading may have been an activity which only adults performed. A pleasant experience of listening to an adult read a story, perhaps. The innocence of the unknown unknown is now lost. The data-doppelganger, like the double in Poe's story, convicts the subject, whispering in the ear 'you are not good enough'.

Once this data-doppelganger has been discovered, once the mirror of data has been held up to the child, it is their personal responsibility to love it and nourish it. The doppelganger is both *heimlich* and *unheimlich,* familiar and strange and the subject thus has an ambiguous relationship with data, both loving it and hating it at the same time.

Educational success is presented as a 'missed opportunity' for some children (Ofsted, 2017, 4). It is the responsibility of the child to take hold of this opportunity. The data reveals this missed opportunity; it exposes the presence of failure. Having a 'disadvantaged background' or any other contextual factor is presented as being no excuse for deficit doppelgangers. Children are presented as a homogenous group who are all capable of creating the same data. Successful schools are those in which 'children, including those from disadvantaged backgrounds achieved well' (p4). These individualised children must ensure that they produce the best data possible. The personal responsibility for the doppelganger lies with the child.

The discovery of a doppelganger in stories such as *William Wilson* (Poe, 2009) always indicates a time of mental anguish. It is often associated with going mad as the self begins to disintegrate. In a similar way, the presence of the data-doppelganger for many children may be linked to mental health problems. If children see themselves as producers of data, as categorised and hierarchised objects rather than unique participants in society, their sense of self could be fractured. This can be seen in Clark and Glazzard's recent research into the phonics check in England (Clark and Glazzard, 2018). This report found that many teachers reported children being affected by the phonics test with one teacher saying 'Children are stressed. Some cry' (p18). This report also found that many parents observed a negative effect of the test on their children's well-being, particularly when they failed the test in Year 1 (aged 5 or 6) and had to retake it the following year. The focus on the doppelganger at the expense of the embodied child can be seen as an act of neglect. The wellbeing of the child is sacrificed at the altar of good data.

Doppelganger as id

In contrast to the data-doppelganger, a predictable, ordered, machine-readable version of the child governed by algorithms, the organic child can be perceived to emerge from the id. The organic child is unpredictable, leaky, chaotic and complex. It is not easily measurable and does not develop according to standardised norms. This dark and dangerous child arising from the depths of the unconscious must be reassembled in order to be measured and controlled. The fear of this uncontrollable organic child can be seen in the attempts to control the child's body. Good practice is described thus: 'They used pencils and exercise books, while children sat at tables, to support good, controlled letter formation' (Ofsted, 2017, 5). The child's mind is also regulated through the use of specific reading and writing programmes. Many children clearly resist, as they do not meet the early learning goals and miss the 'opportunity' to become school-ready pupils.

The vehicle for learning linked to the id-driven child is the equally id-driven and unpredictable notion of play. The pedagogy promoted in *Bold Beginnings* (Ofsted, 2017) exists in sharp contrast to the pedagogy of the *Statutory Framework for the Early Years Foundation Stage* (Department for Education, 2017b, 9). This document states 'each area of learning and development must be implemented through planned and purposeful play and through a mix of adult-led and child-initiated activity'. There is no mention in *Bold Beginnings* of child-initiated learning, despite the fact that it is a requirement of the framework. Child-initiated learning and its associated activity of play can be linked to the idea of the game in *William Wilson* (Poe, 2009)*: where a card game becomes a symbol of William's debauchery and expression of his deepest desires for wealth and power. The game, a type of play, is engaged in by the subject and linked to the id-driven behaviour of children. The role of the doppelganger in the stories is ultimately to stop this kind of behaviour. Likewise, the data-doppelganger limits play, as it does not produce the data needed. Play is an activity which has multiple outcomes

and cannot easily be measured and controlled. It is chaotic, unregulated and dangerous; linked to degenerate behaviour in the doppelganger stories and springing from the id. A function of the data-doppelganger, therefore, is to control and regulate pedagogy. Like Wilson, it must step in and stop the game.

Doppelganger as superego

The importance of data-doppelgangers means that the production of data must be the purpose of education. In order to do this, the chaotic, id-driven child must be suppressed and replaced with measurable, ordered, predictable data. As superego, data is used as a regulatory device in the form of pedagogy. The pedagogy promoted in *Bold Beginnings* is 'direct teaching' (Ofsted, 2017, 4): a one directional act which delivers knowledge from the teacher to the child. Discussions of maths and literacy teaching support this. The direction of action in these discussions is always from the teacher to the child. Listening to stories, poems and rhymes will feed children's imagination, enhance their vocabulary and develop their comprehension. Using practical equipment in maths will support children's grasp of numbers (Ofsted, 2017). This may appear benign, but it denies the children's role in learning. There is no mention of the child as a meaning-maker or learner. Pedagogy is presented as cause and effect. An action is carried out on an object (the child) with a given result. The educational practices which enable children to construct their own knowledge, such as learning through play, cannot be easily measured but are arguably ones which will create the best doppelgangers in the long term. As they don't produce clear data-doubles in the short term however, they are regarded is insufficient.

Clark and Glazzard (Clark and Glazzard, 2018) find that pedagogy takes a new form when dominated by the need for good data. The majority of teachers surveyed by Clark and Glazzard about the phonics check felt that the test had negatively impacted on

their teaching. Comments revealed that teaching to the test and losing a love of reading were the main results of this doppelganger-centred education, with comments such as 'We teach to the test. It's depressing and goes against everything most teachers want to deliver' (p21) summing up the impact on both teacher subjectivity and pedagogy.

The data-doppelganger also regulates the behaviour of the child. It forces itself onto the child from the first encounter with school. Children are assessed on entry at age four, taken at their most vulnerable and measured against norms. The data-doppelganger, like an 'intruder from the shadows' (Keppler, 1972, 3), enters the child's consciousness as they become aware of themselves as objects. The awareness of this data regulates the child's behaviour throughout school as they progress through a further raft of statutory and non-statutory tests which continue throughout their education. Every test ranks the child, categorising them as successes or failures. Foucault calls this the process of 'individualisation' (Foucault, 1977), whereby children are regulated and controlled through the process of the examination, a process referred to by Allen as 'benign violence' (Allen, 2014). The knowledge of their ranking and categorisation within the class is perceived as motivation for the child to improve their educational attainment although for many, the knowledge of their ranking will lead to demoralisation and alienation.

The presence of the data-doppelganger limits the teachers' agency. The requirement to produce the right kind of doppelgangers means that the National Curriculum, the curriculum of the next stage, is driving the experience of early years education. Assessments must be 'quick to collect' and useful to the teacher in the next class. The curriculum must be 'fit for purpose', the purpose being to prepare children for Year 1. Pedagogy must involve 'direct teaching' of reading, writing and maths. All of these recommendations limit the agency of the teacher. Risky, creative pedagogy is

not promoted, as the possibility of not producing the right kind of data is too dangerous. Even the statutory early years curriculum is presented as being not fit for purpose, as it is not aligned with the National Curriculum of the following year. Teachers are not free to follow the existing curriculum; they are not free to use play pedagogy and they are not free to use observational assessment methods to learn about the child. Many teachers may feel, like William, that their 'natural rights of self-agency [have been] so perniciously, so insultingly denied' (Poe, 2009).

Conclusion

The data-doppelganger can be seen as an attempt to understand the posthuman condition. The impact of datafication on education goes far beyond changes to the curriculum and pedagogy; it creates a different kind of subjectivity in the cyborg-self. Children entering the world of school are repositioned as cyborgs. Data acts as a doppelganger to normalise the child, moving the concept of the self from one based on family relations to one based on wider societal and public normative judgements. Through the mirror of data, the child discovers the unknown unknowns and in so doing, the cyborg-self of the data child emerges. Data acts as a regulator of the child, determining how the child will behave and learn. The cyborg-teacher too is regulated by data, programmed or at least pressured to behave in certain ways for maximum efficiency. Agency, creativity and autonomy are limited as the teacher becomes part of the collective consciousness of the data-generating machine.

Thus, 'doppelganger as method' has revealed an educational world in which what it means to be human has been altered in favour of a cyborg existence. This form of cyborg existence is untenable. The doppelganger has become more important than the embodied person and thus both teachers and children are dehumanised.

The cyborg-self, however, is here to stay. The movement towards a data driven world is not unique to education but is an aspect of the posthuman condition. It seems unlikely that we will revert to the past, to the pre-data and pre-technology education of the last century. In light of this, cyborg-teachers need to explore new ways of existing in the dataverse. There may be new and, as yet, undiscovered ways of taking back control of data, of using it to create more positive experiences for cyborg-children. The cyborg-child could be a positive development. Data could be used in many various ways to enhance the learning experience of children. An example of this is Ephgrave's (2018) 'planning in the moment' approach which promotes gathering a wealth of qualitative data in the form of parent and teacher observations, many of which will not be formally recorded, and using these to plan individual learning experiences with each child. Data here is used to enhance learning rather than as a performance indicator. It is present in the mind of the teacher, as part of a relationship with the child, rather than in a computer system. Ephgrave, a practicing teacher, urges her readers to resist the demands of Ofsted for vast quantities of written data. Instead, she reminds teachers that they are professionals and know their children. She states: 'Together we need to take back ownership of our profession and operate from a position of confidence in our pedagogy, rather than from a position of fear and top-down pressure' (Ephgrave, 2018, 135). This revolutionary statement gives some hope that teachers may be able to resist the control and regulation of the data-double and take back control of their profession.

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