COMPETENCE BASED EDUCATION AND TRAINING (CBET) AND THE END OF HUMAN LEARNING

The Existential Threat of Competency

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Preface

The first time that I heard about competency-based education and training (CBET) was when I was a lecturer in Further Education in the United Kingdom teaching 16–18-year-old young people in the 1990s. The introduction of General National Vocational Qualifications (GNVQ) into Further Education colleges with their emphasis on behavioural outcomes had fundamentally changed the way in which teaching and learning was conducted. These quasi-academic qualifications altered the nature of the classroom with a focus on what students could *do* rather than what they might *know*. Students were busy building portfolios of evidence and completing activities. Whilst my students were keeping busy, if learning little, and I was assessing their activity, whilst teaching little, a whole academic critique was forming around the CBET movement criticising its epistemology, pedagogy and practice. By the end of the 1990s, CBET was effectively dead at least as a pedagogically plausible approach to vocational education.

Now CBET is back in ways that even its strongest advocates in the 1990s could not have imagined. Online learning platforms use CBET, Advocates have called for the end of curriculum, the classroom and time-sensitive learning. CBET is in nursery education, in Higher Education and in programmes for the development of cultural skills and competencies. We are in the domain of 'CBET 3.0' where we need to demonstrate what we can do to survive in an uncertain and unpredictable world. CBET promises the world in terms of employability, skills, student satisfaction and liberation from the tyranny of the teacher, the school and the

curriculum. It offers a radical and revolutionary form of education redefining what we understand by this term.

This book argues that CBET does have a radical project, but one that involves the jettisoning of many of the things that we would positively associate with human civilisational endeavours. Our conceptions of pedagogy have historically been based on the idea that learning involves some kind of change in our mind, body or spirit, that learning takes place over time and that it can be manifested in human ways. Our conception of humanity, at least since the Enlightenment, has been one that values autonomy and reflection. CBET, tacitly, represents the end of learning as we understand it as a human activity. It neglects body, mind and spirit, causality and the subtlety of human action. It represents a divergent path for humanity, where learning is no longer necessary, and in that way it represents an existential threat. Although in our technological era there seems to be something quaint about hanging onto notions of the human, there is nothing utopian or positively post-human about the future offered by CBET. It offers only a downward spiral where people's mediation with the world is reduced to digitally providing continuous streams of value with no regard to consciousness or purpose. Indeed, CBET cannot be understood as a *human* theory of learning.

The purpose of this book is not to consider the utility of CBET in economic terms. It is not an argument based on empiricism. It presents an argument that strips CBET down to its core assumptions in order to consider its relevance in terms of human learning and human existence. I expect that it will not only be of interest to educationalists, but also to those interested in philosophy, sociology and social theory as well as to educational activists. Beyond this I hope that it will be of interest to policymakers and practitioners in terms of considering what is gained and lost by employing CBET methodologies. I would want the book to give pause to arguments which value CBET purely due to its immediate economic benefits without considering the pedagogical and societal losses involved.

CONTENTS

Introduction

Abstract The purposes of education, learning and pedagogy in human societies are varied. Some societies may have systems of education which do not necessarily concern themselves with learning, pedagogy or human futurity. This provides a context to discuss whether competence-based education and training (CBET) is congruent with learning and pedagogy and what are the implications of this. The chapter considers the structure of the book as a whole.

Keywords Competence · Learning · Futurity

EDUCATION AND FUTURITY

In this book I ask a fundamental question originally considered by Dewey in 1938 in 'Experience and Education': 'what anything must be to be worthy of the name *education*' (Dewey 1997, p.90). Dewey's italics suggest that education is something more than rote learning, or skill acquisition. In this short book, I consider whether one particular type of educational strategy 'competence-based education and training' (CBET) is indeed worthy of that name. I conclude that while in a minimal sense it can indeed be considered to be education it is not worthy of association with learning or pedagogy and is not what Dewey intended as education – even in terms of what he refers to as the 'traditional' kind. In Dewey's time, and especially today, education was often discussed in instrumental

terms with the primary principle being to make things better in the future. The cognitive development of children and adults, their happiness and social functioning are partly products of our education system. Education is considered to be central to earnings, economic growth and competitiveness. Even in terms of community and social cohesion education is a key component. All of these things might be important but perhaps the most fundamental feature of education is that it is part of what makes us human. This point might seem trite but it is so central to the relation between people and their history that to neglect it would be a negation of our humanity. As humans we have a fundamental desire to learn, communicate and to share symbols and language with others. Education, as a formal and informal system of learning is one of the most powerful ways in which we do this. This issue may seem sentimental and mawkish, but it is centrally important to recognising our humanity and its relation to education. So the central question of this book is whether CBET is a form of human learning and relatedly its implications for human existence as we currently know it.

There are identifiable systems of education that are neither concerned with learning or humanity. In extremist theocratic systems of education, where people are considered to be unthinking tools of some deity, education can forgo any contact with human agency. The rote learning of scriptures and their recitation may be a sadist's idea of education but it wilfully ignores the thinking, human subject. Relatedly, training in how to break rocks in a forced labour camp may be called 're-education' in some regimes that claim to foster human liberation but obviously any notion of the human, or humanity, has been erased. The minimum, it seems, for a system of human education is a belief in the human and in human agency, autonomy and freedom, as associated with the Enlightenment.

This book is based on a humanist conception of the individual that considers humans, and individual consciousness, to be valuable but also argues that humanity is not a transhistorical phenomenon. As long as there is human consciousness, agency and autonomy, then the game is not yet up and there is the possibility of progress and justice. However, there is no reason to expect humanity to continue in this manner and in this book I examine exactly why we are a precarious species, even given our economic and technological progress. The claim made here, that education is central to humanity (without education, or at least learning, there are no humans) and that humans and individual consciousness are valuable things that are worth having, may be thought to be so fundamental to philosophies and

practices of education and training that it is not relevant to discuss them. However, this book argues that a very tangible system of what masquerades as 'pedagogy' or 'learning' seeks to displace each and every one of them, forcibly assuming humanity and individual consciousness away. This is an unusual, and perhaps hyperbolic, position to take. Of course, we might consider that there are some historical and contemporary forms of education which are associated with real existential threat. The first, and most obvious, category of education as existential threat would be forms which have a genocidal or millennial (apocalyptic) intent such as the Nazi programme of education in Germany or in terrorist training camps. Education that promotes the genocide of a group of people, or of activities to bring about the end of the world (such as a terrorist attack involving a deadly pathogen), is clearly existential. However, there are other forms of education that bring into question the human subject. That is, rather than bring about an end to the human genome they might cause the erasure of a defined version of humanity. For example, the full capitalisation of humanity (Rikowski 2002) constitutes the human as merely a vessel for the production of labour power with no regard to consciousness or resistance. This is akin to caging, or capturing, humans so that we have no freedom of action.

CBET is obviously not applied for some kind of dictatorial, genocidal purpose but rather with the best interests of people, the economy and society in mind. The tragedy is that embarking on this wider programme of 'education' threatens learning and human experience, being an existential threat. At the very least, the threat is already with us and threatens those individuals who are marginalised due to their racial and/or class position and those who are treated poorly by the education system, the types of vocational learning associated with CBET are common. Theories of warehousing (Avis et al. 2016) already consider the ways in which vocational education acts as a means of hiding unemployment for students of Black Asian and Minority Ethnic (BAME) and/or working-class backgrounds. Coupled with ideas of educational eliminationism whereby the purpose of education is to exclude (Blacker 2013) these ideas present a very bleak picture for a marginalised group of students. However, although these students may be at the brutal cusp of CBET, it threatens to destroy learning and meaningful existence in *all* human societies where it is adopted. There would seem to be very little way of preventing it. In fact, given the efficiency and perverse beauty of the CBET virus it spreads rapidly

(Mulder 2017). In short, it is very good for business but not for humanity. It is hoped that this book gives a humanist foundation to those who oppose CBET who would otherwise be referred to as 'cynics' (Burke 1989, p.124).

In case there is any doubt as to the seriousness of the language used, or whether this is a parody or satire of CBET, I am absolutely certain that we face such a profound threat. As I will show, and as should be obvious with some prior thought, an 'existential threat' does not mean that humanity will be wiped from the face of the planet. In some respects following the existential threat of CBET described in this book, life will *seem* to be better in a multitude of ways. People will appear to be happier, the economy will appear to grow and there will be an increase in people gaining educational qualifications. However, what appears to be real is merely a pastiche of what a self-conscious species should be like. We will have assumed away the concept of humanity, caging individuals in modes of interaction with the world that are pre-determined and digital. Taken to its logical extremes it will no longer be possible to infer that there is intelligent life on planet earth even if we seem to be surrounded by it. If all of our mediations with the world were premised on CBET techniques then we would be a digital species, incapable of the analog production of behaviours, with no interest in the internal nature of our being.

Like Skynet in the *Terminator* films, a technology which seems benign before its sinister intent is known, CBET is the seed of pedagogical destruction. We have survived the first waves of the assault on our being from CBET but the latest wave threatens to wipe us out as experiencing beings within a generation or so, leaving us with no conception of learning. This may be considered to be a reductive argument, and it is certainly true that without other social forces (particularly capitalism) CBET would not have its pernicious effect. However, it is in this world, here and now, that CBET has its impact. This impact is extensive. CBET has spread to every aspect of education from initial schooling (Sornson 2016) to Higher Education (HE). Concerns of affordability and accountability have brought about a revival of CBET at the highest levels of learning (Burnette 2016). This colonisation of broad educational arenas by CBET means that it has spread much more widely than the vocational arenas to which it was initially applied. CBET is increasingly seen to be a revolutionary, rather than a reactionary, educational movement. Writing in 2001, Richard Voorhees stated:

> We are in the early stages of a learning revolution. New learning pathways have been forged by intense competition from organizations whose sole purpose is to deliver learning (anytime and anywhere) and by rapid advances in information technology. (Voorhees 2001, p.5)

This learning revolution takes CBET into places very different from the vocational courses for which it was originally intended. In terms of HE, for example, Wolf (1995, p.31) considers that in the 1990s it was not correct to consider a '"competency crusade" to take over the whole of higher education'. Rather, she argues that CBET was most appropriate for vocational areas stating that

> the core of competency based approaches has always been professional and vocational education. It is here that the concept of competence can be given a coherent meaning, and operationalised with some real success; and it is here that the arguments for adopting competence-based reforms can be made with force and conviction. (Wolf 1995, p.31)

This bounding of competence implies that CBET was never necessarily intended to be applied to universities. However, as Barnett (1994) discusses, as early as the 1990s the CBET 'framework of concepts is now being extended to higher education' (Barnett 1994, p.71). This does not mean that it *should* be and Barnett goes onto say that 'higher education is not just (or at all) a matter of developing competences for particular professions' (p.72), although targets for employment and employability have changed this to a greater degree. Worryingly, Barnett (1994) also considers that '[a] higher education designed around skills is no higher education. It is the substitution of technique for insight; of strategic reason for communicative reason; and of behaviour for reason' (p.61). Despite these concerns, CBET has spread rapidly in HE. In a foreshadowing of this, Oates (1989) considered the various ways in which work on competence and the framework of the National Council for Vocational Qualifications (NCVQ) impacted on UK Higher Education in the 1980s. The role of partnership, teacher education courses at some universities (Sussex and Ulster) and the Enterprise Initiative are cited. One area, the rise of competency-based learning courses was perhaps the least theoretically developed but the fastest growing. CBET has since expanded to areas of education, particularly HE, going far beyond the claims made for it in the 1990s. The growth of private sector providers and online learning platforms for CBET is

promoted in terms of reducing the amount of 'seat time' that students have and to increase the speed with which they complete their degrees. CBET is big business, an educational technology that promises to liberate students from modes of assessment and linear forms of learning.

STRUCTURE OF THE BOOK

In Chapter 2 I consider the history and educational philosophy of CBET. I argue that the unique nature of CBET is a philosophy of education that focuses on behaviour rather than any necessary change to the individual. The argument is that CBET is a theory of non-learning that is radically different to any pre-existing pedagogy.

In Chapter 3 I discuss the notion of existential threat as both a visceral and a philosophical threat, considering how a threat to existence can occur whilst humans still appear to be functioning beings. I discuss from various perspectives how existential threat is proposed in three 'critical humanisms' (Marxism, black existentialism/critical race theory and transhumanism).

In Chapter 4 I return to the arguments of Chapters 2 and 3 to consider that CBET is radical, but is certainly not liberating. CBET is an educational philosophy with a view of the human as a digital being possessing no internality (mind, organs, spirit) which is distinct from any other educational philosophy. The view of the subject in CBET is not as human, but is best described as alien. Indeed, exopedagogical may be the most appropriate way of describing how CBET practitioners view their subjects (Lewis and Khan 2010). This leads to circumstances that present an existential threat to humanity. Existential threat through CBET does not mean the physical erasure of humanity as a genome or in a genocide but a displacement of the human in three ways. The acceleration of the processes of the capitalisation of humanity and the redefining of human capabilities as labour power as part of the continuing social domination of capital, the caging of human capacities in a digital frame and the acceleration of the transformation of humanity into a dystopian form of transhumanity. All of these are a threat to our future.

REFERENCES

Avis, James, Kevin Orr, and Paul Warmington. 2016. "Race, 'Warehousing' and Vocational Education and Training: a European Issue?" Paper presented at European Conference on Educational Research, Dublin, Ireland, August 22–26.

Barnett, Ronald. 1994. *The limits of competence: Knowledge, higher education, and society*. Buckingham: Society for Research into Higher Education & Open University Press.

Blacker, David J. 2013. *The falling rate of learning and the neoliberal endgame*. Winchester, UK: Zero Books.

Burke, John. 1989. "The Introduction of NVQs." In *Competency based education and training*, edited by John Burke, 109–31. London: Falmer Press.

Burnette, Diane M. 2016. "The Renewal of Competency-Based Education: A Review of the Literature." *The Journal of Continuing Higher Education* 64, no. 2: 84–93.

Dewey, John. 1997. *Experience and education*. New York: Simon & Schuster.

Lewis, Tyson E., and Richard V. Kahn. 2010. *Education out of bounds: Reimagining cultural studies for a posthuman age*. New York: Palgrave Macmillan.

Mulder, Martin. 2017. *Competence-based vocational and professional education bridging the worlds of work and education*. Switzerland: Springer Verlag.

Oates, Tim. 1989. "Emerging Issues: The Response of HE to Competency Based Approaches." In *Competency based education and training*, edited by John Burke, 186–96. London: Falmer Press.

Rikowski, Glenn. 2002. "Education, Capital and the Transhuman." In *Marxism against postmodernism in educational theory*, edited by Dave Hill, Peter McLaren, Mike Cole, and Glenn Rikowski, 111–43. Lanham, MD: Lexington Books.

Sornson, Robert. 2016. *Over-tested and under-prepared: Using competency based learning to transform our schools*. New York, NY: Routledge.

Voorhees, Robert. 2001. "Competency-Based Learning Models: A Necessary Future." *New Directions for Institutional Research* 100: 5–13.

Wolf, Alison. 1995. *Competence-based assessment*. Buckingham: Open University Press.

CBET as a Theory of Non-Learning

Abstract Competence-based education and training (CBET) has an extensive history from its origins in teacher education and its application to vocational areas through to the contemporary situation where it is applied throughout the education system, including Higher Education (HE). The philosophical routes of CBET are also traced through Taylorism and behaviourism. It is argued that all manifestations of CBET are concerned with the assessment of a performed behaviour. CBET is not a human theory of learning as it is does not have a theory of mechanisms (bodily, mental, spiritual, relational) through which learning occurs, is digital (rather than analog) and does not consider causality.

Keywords Competence · Learning · Humanism

INTRODUCTION

Competency is a familiar trope in contemporary education. Although there have been many definitions of the concept, the central idea of competence-based education and training (CBET) that the *evidenced past behaviour of an individual is a direct indicator of their competence to perform a future process*, has been highly influential. Writing in the mid-1990s regarding yet another return of CBET, Hyland remarks on its durability (Hyland 1994, p.2). Indeed, in the current context we are witnessing another return of CBET, this time in Higher Education (HE)

(amongst other areas) with a global move towards increasingly vocational curricula (Bhopal and Danaher 2013). CBET is one area of education (claims to it being a form of *learning* are spurious as I will argue here) that never quite seems to go away. Even though it has been critiqued in terms of its ontological assumptions, epistemology, application and slim evidence base it never quite seems to die and lingers, zombie like, on the fringes of educational practice. Every decade or so suddenly CBET is everywhere in educational institutions, at specialist conferences and pushed by consultants and international agencies. The contemporary educational arena is one such time where the zombies of CBET theory and practice have suddenly become a full-scale zombie apocalypse.

When first encountered, work on CBET seems to be highly scientific and technical with an emphasis on procedural logic. It draws from disciplines that are on the boundaries between social science and the work of consultants. These 'consultancy arts' include areas such as occupational analysis, job role analysis, forms of behavioural assessment and the setting of standards. These are areas in which educationalists, psychologists and sociologists all have skin in the game, and sometimes it can be difficult to distinguish where social science starts and when the words of consultants and advisers take over. Examining the history and philosophy of CBET can be slippery and it is easy to mistake rhetoric with ontology, epistemology and method. In this chapter I tell the story of CBET and consider the main contentions of the theory. Primarily, I argue that CBET is not a theory of human learning. It ignores internal changes in personhood (mental, physical, spiritual) associated with learning, assesses only digital mediations with the world (rather than analog behaviours) and does not consider notions of causality in learning. This is distinct from any existing human conception of learning which considers people to have internal capacities, to be fundamentally analog beings and where there is cause and effect.

Firstly, I consider the history of CBET from its origins in teacher education, through its promise of skill development and qualification reform in the 1980s, to its position today where it is being repackaged as a radical method of lifelong learning. The history of CBET is nonlinear. Rather than a straightforward progression where one element of the theory builds on another over time there are breaks in continuity. CBET is often rediscovered at supposed times of crisis: in governance, economy and education. This makes following the history of CBET difficult as similar concepts appear in different countries with different names for

the same thing. CBET is one form of this approach, but acronyms such as competence-based learning (CBL) and performance-based learning (PBL) are used. There may be differences in method, but the basis of the theory, that behaviour is key and behaviour is assessed by whether it meets a set level of standards, is universal.

After considering the many returns of CBET in educational history, I then move to discuss the main principles of the theory, its philosophical grounding and concepts. Despite the many definitions of competence the use of the term in CBET is both central and, in itself, unproblematic. Although competence in CBET is very different from dictionary, or common sense, conceptions it does have a defined meaning in terms of a set of standards, or performance, which an individual is expected to meet to pass an assessment in that area. Depending on the ways in which the qualifications are designed areas of competence can be nested into a qualification, award or apprenticeship but the structuring of these qualifications (although relevant to different occupations) does not detract from the notion of competence as central. Competence can only be assessed through observed behaviour and this reveals the radical behaviourist origins of CBET which actually goes further than the theories of this extreme group of psychologists in terms of dismissing even physiological mechanisms. This emphasis on behaviour and the way in which it is assessed produces a distinct form of ontology and epistemology, unlike any other which is found in educational theory (even behaviourism). It is one that adopts a view of the human which does not take into account any internal physiological, psychological or spiritual mediators or processes, allows only digital mediations with the world and rejects certain claims to knowledge whilst hanging onto the idea that the correlation between a person and a behaviour is sufficient to award a competence. Attempts to develop conceptions of knowledge or mind within CBET, such as introducing knowledge as a form of behaviour or bizarre concepts such as meta-competences, produce their own forms of abstractions and paradoxes which take us still further from the notion that CBET is a human form of learning.

The Persistence of CBET

As CBET links mechanically the demands of the economy with what the individual can allegedly do, it has appeared and reappeared at key times when a crisis in economy or society calls for technical solutions. Rather

than seeking solutions in forms of pedagogy that emphasise knowledge, or capability, CBET considers that the emphasis should be, exclusively, on what people can *do*. It is the pragmatic, common sense and populist nature of CBET that makes it appealing. By taking the demands of the economy and business as a starting point and using this as a basis to define how people should act, CBET appears to be a common sense solution to crisis.

Politically, Hyland (1994, p.2) considers that, the original rationale behind the origins of CBET can be seen to be 'a conservative philosophy. A foundation in behaviourist psychology and a determination to serve the specific needs of industry'. This is certainly true of the return of CBET in the National Vocational Qualification (NVQ) system in the 1990s which was motivated by pressure from a Conservative government driven by the requirements of industry for greater degrees of competitiveness and a distrust of standard educational theory. However, competency has also been endorsed by Social Democratic administrations such as the Labour party in the United Kingdom (UK) in the 1990s. Indeed, there is much about CBET that appeals to a social democratic or statist conception of an education and training system. In some respects CBET also finds favour with those motivated by social justice, due to its potential to prescribe for societal, as well as economic, needs through concepts such as cultural competence. The value of CBET for social democrats is primarily because the mapping of competence with the needs of industry seems to imply a societal planning approach to education with the 'needs' of society or industry being fulfilled through the specific provision of certain types of skill. This view of coordination and societal planning fits comfortably with the views of those who consider that society and education can be co-designed to maximise efficiency and human potential. This is a position that has been criticised by those of varying political and pedagogical positions. The educational philosopher John Dewey, for example, believed that it was not possible to plan education to meet the specific needs of industry (Hyland 1994, p.4). Dewey's criticism seems apt as CBET appears to be related to the manpower planning approach to human capital planning, or a structural form of reading of the relationship between the economy and education where the needs of employers, or at least industrial trainers, can be directly imposed upon the content of qualifications. As such it is open to all of the libertarian critiques of the manpower planning approach in terms of the impossibility of reading market signals in the future due to the dispersed and subjective nature of

market information. It is perhaps incorrect to consider CBET in its origins as a neoliberal form of education. It can equally be a corporatist or statist form of qualification when employed as part of state policy. The qualification may also be a commodity sold for profit in the market by an educational provider as is increasingly the case in its most recent manifestation in HE. Despite this CBET represents an important step in terms of a Marxist conception of labour power under capitalism in that it represents the final break in the chain that associates labour with a specific and located human capability (use value) making it instead a quantified and necessarily mysterious form of labour power (exchange value) as will be considered later in this book.

According to Hyland (1994) the historical origins of CBET in education can be located in attempts to quantify the performance of teachers in the 1960s United States (Hyland 1994, p.1). 'There is general agreement that the more immediate origins of CBET are to be found in the performance-based teacher education movement which gained prominence in American educational circles in the 1960s' (Hyland 1994, p.1). Tuxworth (1989, p.10) states that at this time it was not known as CBET, but was more properly known as performance-based education, or performance-based teacher education (PBTE). In fact there is little difference between the two and Tuxworth concurs that they are 'virtually synonymous' (Tuxworth 1989, p.10). Although PBTE was the first 'educational' manifestation of CBET, there were earlier forms of industrial training that were similar. Hyland considers that the approach had its origins in what was known as the 'social efficiency' movement (Hyland 1994, p.1) that aimed to apply the same principles to society as had been applied to factory labour under Taylorism. Tuxworth also makes this link to Taylorism and 'industrial/business models centred on specification of outcomes in behavioural objectives form' (Tuxworth 1989, p.10). The conceptual origins of PBTE, and CBET, are ostensibly in Taylorism and behaviourism but applied through the filter of competence.

Taylorism rejected mental models of the person and '[i]n essence Taylor turned workers into robots, mindlessly but efficiently repeating routinized movements' (Leahey 1987, p.336). Its origins were, appropriately, in the Chicago slaughterhouses through which Henry Ford obtained his ideas for the Ford production line. In terms of later (non-industrial) applications, by fully specifying components of the labour process and subjecting them to scientific analysis, teaching could be

made more efficient and disconnected from the liberal/humanist assumptions that had dominated education since the Enlightenment. Tuxworth considers that the priority was to specify teacher competences that would lead to higher pupil achievement and efficiency (Tuxworth 1989, p.11). It would be the 'means of creating and enforcing the standards so long talked about, but, until then not politically acceptable or enforceable' (Tuxworth 1989, p.11). Wolf (1995, p.2) considers that an emphasis on CBET in teacher education was also concerned with demands for greater accountability. The utilitarian routes of this approach to education are clear and Hyland (1994, p.2) considers that this was due to the perceived need to increase the intensity of industrial production. However, CBET differs from Taylorism as the emphasis is on competence which may (or may not) be derived as a result of the observation and division of jobs into specific tasks. Competence can be based on what the employer desires, or at least a set of industry standards, which may or may not have been rigorously constructed from observation.

CBET was also motivated by the belief that behaviourist psychology, or habit psychology, could provide a methodology for training humans to meet the demands of industry (Smithers 1993). As the broad definition of CBET, stated above, shows, the concept is strongly driven by behaviour, or what people can do. However, even within behaviourism there are different strands and it is apparent that CBET was driven by a simulacrum of the most radical strand of behavioural psychology, beginning with the work of Watson and Skinner. In some ways, the application of CBET (particularly in its Cold War period applications in PBTE) mirrors the rise of behaviourist psychology, in particular adopting its most radical critiques of individual subjectivity and mentalism.

Associating CBET with behaviourism, without further qualification, means very little as behaviourism, like CBET, is a broad church with many different approaches and alternatives (albeit with a common core). Leahey (1987) considers that behaviourism is not a coherent discipline in psychology:

> [B]ehaviorism as it is usually used is becoming useless as a philosophical category and unworkable as a historical entity. While it has always been recognised that the various behaviourists disagreed on various points, it has only been recently been shown how many and how deep these disagreements were. (Leahey 1987, p.259)

Leahey (1987, p.308) uses the term 'infinite elasticity' to consider the various ways in which behaviourism can be used in practice. Leahey states that behaviourism can mean:

> psychological reductionism, or just the study of behaviour by objective means; it might mean a significant break with the past, or it might be very old; it might mean seeing mind as a causal actor in determining the behaviour, or it might mean the denial of mind as a causal agent. (Leahey 1987, p.308)

Such a 'broad church' view of behaviourism is very similar to the ways in which CBET has been considered as an inclusive educational philosophy in which various, eclectic, approaches can be contained although CBET's 'common core', an emphasis on behaviour as an indicator of competence makes it very difficult, if not impossible, to combine it with other forms of educational theory without invalidating its key ontological and epistemological assumptions. If behaviour is the sole criteria for assessment (as CBET contends) then either other entities (such as knowledge) need to be dismissed (or used as proxies for behaviour) or the contention that behaviour is the sole criteria for assessment is invalid. If what an individual can 'do' becomes contaminated with what an individual 'is' then we introduce the possibility that CBET is an invalid method of assessment (this point will be considered in depth later in this chapter).

One way of distinguishing between different forms of behaviourism, and to consider their relation to CBET, is to examine the basis for the generally held view of behaviourists that behaviour is the most important factor in psychology rather than mind. It can be considered that there are two types of behaviourism – methodological and metaphysical (Leahey 1987, p.260). Methodological behaviourists consider that although ontologically a concept of mind might exist, they do not find it a suitable concept for scientific study. Metaphysical behaviourists, on the other hand, argue that the concept of mind does not exist, 'that mind is just a myth to be banished from any proper understanding of the world, along with angels, demons and spirits' (Leahey 1987, p.260). In terms of CBET, it seems that most theorists and practitioners of this movement are methodological behaviourists. They may believe in a concept of mind, but unlike behaviour, mind can't be accessed or measured in any sense (although for some models of CBET evidence of knowledge might count as a proxy for behaviour, but even in these models the knowledge

must be evidenced *as* behaviour so everything is behaviour in the end). Therefore knowledge and other mental constructs must be 'inferred' through behaviour. As Leahey states, methodological behaviourists do sometimes consider 'constructs' and intervening processes that produce behaviour (p.260), whereas metaphysical behaviourists consider that there are no intervening mental processes and so-called internal, subjective, states can only be explained with reference to behaviour. Perhaps CBET practitioners are best considered to be instrumentalist behaviourists. For 'educational' reasons, they focus on behaviours rather than on internal psychological processes. This makes them close to the methodological behaviourists, but it can be argued that their neglect of the concept of mind makes them de facto metaphysical behaviourists.

Watson and Skinner completely dismiss theories of mind and so their models of behaviourism are close to CBET, although there may be even closer correspondence with fundamentalist behaviourists who considered human action to be more closely related to physics and engineering rather than psychology or biology. In dismissing mental processes completely, Watson (1913) argued that consciousness was not relevant to work in psychology and that attempts to include mental processes were 'absurd' (Leahey 1987, p.302). Like CBET, which markets itself as a pragmatic and 'hard' form of education (Sornson 2016) as opposed to those educationalists who dabble in idealism, the real concerns of psychology should be the improvement of the functioning of human society. Presciently, Watson praised educational psychology as being one field which was not so dependent on introspection (Leahey 1987, p.303). Indeed, the pragmatic nature of behaviourism in terms of responding to the problems of society and economy, like CBET, made it somewhat above criticism. This gave the approach considerable traction in terms of its applicability. As Leahey (1987, p.306) considered after the First World War, the practicality of the approach made sure that 'the question was no longer whether behaviourism was legitimate, but what form behaviourism should take'. Whether Watson's radical approach was grounded on a sound ontological or epistemological basis at least it adopted the familiar tropes of psychology in terms of stimulus, response and psychological argument. On the extreme fringes of what became a significant psychological discipline, some behaviourists went even further than Watson (1913) in attempting to consider a radical behaviourism, more akin to physics than psychology, which stated that the facts of consciousness (even experientially) 'do not exist'

(Leahey 1987, p.307). Lashley (1923), for example, thought that a purely mechanistic theory of human behaviour was possible where every aspect of behaviour could be ultimately reduced to mechanical principles. Human experience would no longer be regarded as a science, but would be part of the arts, a fantasy, where 'consciousness, purpose and cognition were myths' (Leahey 1987, p.315). Although most CBET theorists do not go as far as this in principle, giving their work the cosmetic appearance of education, the ultimate aim of CBET is similarly reductionist. In the case of CBET, this is to reduce every acquired form of human action that is valuable to industry (or, for the enlightened, society) to a set of behavioural statements. Just as extreme behaviourism acquires the features of a new science independent of psychology, CBET appears to be a new discipline independent of education or pedagogy. This will be expanded later, as it is an important reason why CBET is such an existential threat as it seems to exist outside of modernist conceptions of social science. Extreme behaviourism seems to imagine a non-human subject without a mind, either pre-mind or a post-sentient (post-mind) subject. Similarly, CBET is both pre- and post-pedagogical. Pre-pedagogical as it does not attempt to engage with any internal human characteristics at all, treating the internality of the body and mind as unknowable, or not worth knowing. This is a position that seems to pre-date not only psychology but also physiology and anatomy, with empty, unknowable, bodies being assumed. Post-pedagogical as it indicates that the age of pedagogy is over to be replaced with a new discipline of competence which is absent from considerations of mind and internality. This post-pedagogical presentation of CBET makes the differences between humans and machinery less distinct. Humans are not just 'like' machines (in that their anatomy and physiology are analogous to machinery) but they *are* presented as special kinds of machine in CBET (assessed in terms of their ability to produce a certain binary output or not – the *competence*).

Behavioural psychology, like CBET with pedagogy and education, seeks to disassociate previous areas of psychology with science, at least a science of hypothesis and conjecture, replacing theory with pure empirical observation:

> In place of the fantastic, secretly religious, traditional mentalistic psychology, behaviourism substituted a positivistic, scientific psychology of description, prediction and control of behaviour. (Leahey 1987, p.309)

In particular, Skinner's radical behaviourism not only went beyond rejection of mental categories from psychology in general, but made a particular point of rejecting mentalist theories of learning. Skinner did not think that mental models added anything to the analysis of behaviour and considered that theoretical and hypothetical entities mediating, or above, behaviour were not even 'necessary fictions' (Leahey 1987, p.380) and could be completely rejected. Skinner offered a descriptive behaviourism, with clear implications for the control and enhancement of humanity (Leahey 1987, p.382). Learning theory could similarly be rejected as it made use of those hypothetical entities (Leahey 1987, p.384).

In conclusion, behaviourism was obviously a huge influence on the development of CBET in its initial applications. As behaviourism is sceptical concerning affective and cognitive process and individual qualia, CBET is sceptical concerning pedagogical process and favours the behavioural (even reducing knowledge to a variant of behaviour).

After the PBTE/CBET revolution in Cold War America, which was related not only to behaviourism, but also to the belief in rationality in science (Erickson et al. 2013), CBET was largely dormant during the 1970s, at least at the level of policy, only to emerge in the 1980s as a 'new' method of vocational education. This revival of CBET in the 1980s and 1990s was referred to by Burke (1989, p.1) as a 'quiet revolution' in vocational education and training. The paucity of research in this area was compensated for by the circulation of CBET ideas via a 'small networks of consultants and researchers' (Burke 1989, p.1). Wolf (1995) considered that the revival of CBET in the 1980s and 1990s was not dissimilar to the original ways in which it was conceived of. Although there were institutional differences, the key definitions and motivations for this change were similar (Wolf 1995, p.6).

The motivation for CBET in the 1980s and 1990s was inspired, at least in the UK, by government anxiety regarding the economic position of the country. The UK government considered that the nation would not succeed in terms of competitiveness and economic growth unless education and training met the needs of business. This position was influenced by the manpower planning approach to the economics of education (Parnes 1962) and a perceived need to displace the existing qualification structure with a more employer-friendly version (Debling 1989).

This government support for CBET led to the creation of a new state apparatus to produce a structure for vocational qualifications. Under the oversight of the National Council for Vocational Qualifications (NCVQ) a

new system of vocational qualifications (National Vocational Qualifications (NVQs)) was devised which would involve employers in specifying the competences which would be required to successfully fill occupational roles. These NVQ qualifications could be awarded by a range of providers, freeing the awarding of competence from educational context. Qualifications comprised 'performance criteria' (the behaviour to be assessed) given a set of 'range statements' (the contexts in which performance should be demonstrated) which, in combination, could produce 'units' which would add up to whole qualifications. The NVQ was not only broad (in terms of covering a range of occupational contexts) but also covered every level of educational achievement from basic to postgraduate. In a consistently logical fashion, the devising of new NVQ units of assessment, their implementation and assessment was also accredited using the NVQ framework (e.g. the assessment qualification for NVQs was known as D32, D33 involved assessing candidates using different forms of evidence and D34 allowed one to internally assess the validity of NVQ assessments). Alongside NVQs there was also the creation of General National Vocational Qualifications (GNVQs) which, whilst still competence based, would offer a more general form of education in specific fields such as Health, Construction or Business. The apparatus of NVQs was therefore extensive, and possibly pernicious, as it attempted to supplant the existing framework of vocational qualifications with a strict competence framework.

In many ways, the 'quiet revolution' of CBET in the 1980s and 1990s was successful in terms of the national implementation of these qualifications and their adoption by a large number of colleges and employers. Where it was less successful was in terms of the attempt to rid the UK of a so-called 'jungle' of qualification types. The simplification which NVQ offered to the UK qualification system was not as successful or powerful as originally intended and NVQs existed alongside the 'hybrid' GNVQ, existing vocational routes, Business and Technology Education Council (BTEC) diplomas and academic qualifications. This meant that students and employers still faced a difficult and confusing path to negotiate when choosing employment routes. In addition, there was controversy regarding the validity and safety of NVQs compared to standard apprenticeship routes (Smithers 1993) and influential critiques from educational philosophers (Hyland 1994) questioning the internal consistency and conceptual clarity of NVQs. Despite this negative publicity and critique, NVQs continue to be part of the UK qualification framework, although their

continued relevance in terms of other academic and vocational qualifications has been questioned.

Appropriately in terms of CBET, there has been little learning from past experience and we have recently seen yet another revival of the concept, this time in terms of its wider relevance to educational institutions which might be considered to be academic – initial schooling and HE. The first wave of CBET in the Cold War USA and the 'quiet revolution' of CBET in the 1980s and 1990s UK were motivated by what were seen to be problems with the system of vocational training. CBET was intended to improve the governance and accountability of teacher training, reduce confusion in the 'jungle' of vocational qualifications and allow employers to become involved in the business of producing skills. The most recent revival of CBET is increasingly directed towards *academic*, rather than vocational, education, using ideas of post-Fordism, personalisation and student (consumer) choice to advocate CBET methods.

Recent attempts to revive CBET have claimed that it was actually opposed to Taylorism. Sornson (2016), whose work is indicative of the 'newest' manifestations of CBET in education considers that Taylorism was behind the curriculum-driven model of education rather than the personalisation model which is possible with a CBET-informed vision of education (Sornson 2016, pp.11–13). This is not immediately obvious as CBET in Sornson's work is still concerned with the type of fragmented skill packets that would be useful to employers. Rather than focus on Taylorism as a form of control of the labour process (reducing the work process into reproducible, quantified, packets of action) Sornson considers it in terms of the production of a non-differentiated educational commodity which every student receives in the same way (the curriculum). According to Sornson, in the past, the curriculum was producer led with educational institutions and teachers being responsible for what the student/pupil was to receive. Producer sovereignty, according to Sornson, meant that students had no control over what they learn or what they are taught. There is no escape from a prescribed version of the curriculum. This stifling, producer-led curriculum leads Sornson to argue that CBET is a radical break with the past which allows for personalised learning to create competency. Through using a personalised 'learner-centered' (p.39) model we can 'choose to track progress towards crucial outcomes and develop thoughtful pathways to mastery of the skills needed for learning and workplace success' (Sornson 2016, p.39). The approach could mean that students could display increased

autonomy in terms of deciding how, when and what they would learn. This would free students and pupils from educational institutions, allowing them to learn in idiosyncratic ways and in settings very different from classrooms. It would also allow students and pupils to decide that they might follow a hybrid model of education, partly in the traditional classroom, but also in other informal settings (such as work placements or community activities). CBET would allow educators (or assessors) to vary their techniques of tuition and assessment. Teaching would not necessarily become superfluous, but would be instrumentally valued in terms of the degree to which it promoted the achievement of a behavioural competence. Assessment could take many forms. The traditional examination could be replaced by creative and radical methods of assessment which would be unified only in terms of the need to assess behaviour, not knowledge. Education could truly become 'lifelong learning' with competences not being bound by age or grade, but their achievement could occur at any time or over an extended period of time. This personalised approach could even lead to the gamification of learning, and Sornson (2016, p.97) argues, rather hyperbolically, that 'The designers of video games have applied the principles of CBL, in combination with other fundamental learning concepts, arguably better than anyone'. The concepts which Sornson considers could be transferred from video game design to educational settings include advancement on mastery of a level, tiered learning, creating an 'instructional zone' (training level) to prevent boredom and peer support through social media forums (Sornson 2016, pp.97–99). Sornson therefore inverts the idea that CBET uses a methodology borrowed from Taylorism to argue that it frees students from a standardised curriculum, and even might make learning fun.

Sornson sees a revival of CBET *throughout* the education system including a return to this method in teacher education (pp.130–138). This resonates with the work of many earlier advocates of CBET who consider that the anti-educational, and vocationally orientated, principles of CBET are part of its appeal. For example, Jessup states that competence is 'independent of any programme of learning' (Jessup 1989, p.70) allowing a CBET qualification to be awarded 'through any mode of learning' (p.70) which means that its award is 'dependent on assessed competence, not on the way in which such a competence is acquired' (p.70) and is 'independent of the method of assessment' (p.71). Competences are therefore independent of education systems, pedagogies and methods of

grading. They seek to liberate what individuals can do from the constraints of what they know, or the institutions that seek to educate them.

This ideology has been very popular. Since the millennium, we have seen a growth in the application of CBET throughout Europe and North America, as well as in other countries. A substantial edited collection of papers by Mulder (2017a) shows not only the diversity of countries in which CBET has been applied (USA, Canada, the UK, Germany, France, Lithuania, Estonia, Italy, China, various South Asian countries, Vietnam, Australia and Rwanda) but also the extent to which it permeates all levels of education including informal domains. Mulder considers that the competence movement is a global innovation which is 'more alive than ever' (Mulder 2017b, p.1072). At the level of the European Commission, for example, competences have been specified across life-wide domains which include communication, mathematics, science and technology, learning to learn, initiative and entrepreneurship and cultural awareness and expression (p.1073) which are to be evident from initial education through to all aspects of lifelong learning. International organisations such as the OECD (p.1075) and the United Nations (p.1075) also recommend the implementation of competence-based qualifications. According to Mulder (2017b) the key driver for competence initiatives worldwide is to 'align education with the world of work' (p.1076) whilst being applicable to any aspect of education and life skills more generally (p.1087). He argues that we have moved through three periods in the development of competence. Competence 1.0 concentrated on behaviour and detailed lists of skills whereas Competence 2.0 was orientated around an integrated set of capabilities around a given profession and Competence 3.0 considered broad competences around uncertainty and for a sustainable future (pp.1098–1099). Although this seems to indicate a movement from 'behaviouristic' competences (p.1098) in Competence 1.0 in reality all competences (from Competence 1.0 to 3.0) are based around an assessment of performance.

Although CBET is a global phenomenon, the extent to which CBET has moved into education systems in the last decade differs from one national context to another. In the United States, there has been a seemingly progressive movement to integrate CBET into the schooling and HE systems (Barrick 2017), whereas in the UK there is a long-standing vocational competence framework that, due to marketisation, may be realised in some form in HE (Stokes 2017, pp.297–315). The recent German experience with CBET has been a tentative introduction

at lower levels due to its lack of correspondence with the traditional systems of skill formation (Weber and Achtenhagen 2017). In France, although there has been some sectoral uptake of CBET there is often a disjuncture between French theoretical conceptions of competence and its implementation (Le Deist 2017) – which could be ascribed to the difficulty of competence to address anything other than the behavioural performance of a task. In Italy, CBET has hardly made an impact on schooling or lifelong learning systems (Ronchetti 2017). In other education systems, such as China, Estonia and Rwanda, there are CBET 'experiments' which are considered in Mulder's (2017a) collection but no consistent application in national systems. CBET is not a pre-determined globalised form of education and its incompatibility with certain national systems of education may hamper its growth. However, beyond the nation state, there are powerful private sector interests which are involved in selling CBET systems to governments and institutions.

Despite these contradictions, what we see through this account of the history of CBET is an extension of its scope and promise, despite a constant and powerful critique of its key concepts. In the first wave of CBET (1950s and 1960s), its link with behaviourist psychology and the power of its critique of mental states, made it a major influence on an, albeit limited, domain of training: teacher education. This was driven by the need for greater accountability in this field due to a perceived crisis in pupil standards and performance. There may have been the additional concern that teachers were subject to liberal and communist influences in terms of progressive education (Hartman 2008) making the implementation of Cold War techniques of rationality allegedly necessary. The application of CBET in this case was narrow PBTE applied to the competences of teachers. In the revival of CBET, particularly in the UK in the 1980s and 1990s, another perceived crisis, this time around competitiveness and the relative position of the UK in terms of skills, meant that CBET was applied more broadly across vocational areas. Even though the influence of the NVQ system was widespread, supported by government, and still remains relevant in the UK today, it was mainly influential in terms of vocational qualifications. CBET was not applied directly to academic qualifications and institutions, and a hybrid qualification (GNVQ) was created for vocational students in academic institutions. The critiques of CBET at the end of this period seemed to produce, or at least coincide with, a partial withdrawal from this approach in education, and the

situating of NVQ largely within the framework of lower level vocational qualifications (although, theoretically the system is applicable to higher level, postgraduate qualifications). In its latest manifestation, the caution around CBET more generally and its application to academic education in particular appears to have completely disappeared. The latest promotional work on the topic seems to advocate CBET across educational domains and contexts. CBET is seen as universally applicable, fun and flexible.

The history of CBET does not, therefore, move in a straightforward trajectory either towards dominance or retrenchment, rather mutating from specifically vocational to universal, from national to global. It emerged first in a specifically vocational area on one continent (North America), then across vocational areas in another (Europe) and finally as a globalised movement across all educational fields (particularly, it seems, the formally academic and HE). This seems to be a straightforward account of the growth of an approach or discipline – first context specific, then across a range of contexts, then globally – except that there also seem to be periods of retreat when CBET disappears. This could be explained through CBET's many revivals being triggered by periods of crisis. In the Cold War USA a crisis of accountability, in the 1980s UK an economic crisis and in the present age a crisis of the adequacy of educational institutions. Emerging in periods of crisis, there seems to be no consideration of any pre-existing academic critiques of CBET and its behaviourist origins. For example, the revival of CBET in the 1980s UK did not seem to take into account what were plausible questions concerning the inability of behaviourist educational methods to account for cognitive and wider occupational capabilities such as improvisation (Smithers 1993). Similarly, the most recent revival of CBET does not seem to have considered the epistemological questions around the method and its relation to knowledge in academic disciplines in schools and HE. This might be blamed on the inability of CBET to have conceptually evolved to meet the challenges of application to different contexts or in moving from vocational to academic areas. Perhaps there are 'new' conceptions, models or applications of CBET that might allow such moves to take place? This is not only unlikely, but impossible. Although it might be possible to create hybrid models of CBET that attempt to combine it with affective, cognitive or spiritual models of education then this would invalidate CBET. Whatever this hybrid entity was, it could not be described as CBET due to its radical epistemological and ontological assumptions as a theory of 'non-learning'.

The Essence of CBET

Now that the historical origins and trajectory of CBET has been considered, I will turn to its relation to educational philosophy and knowledge and attempt to define its central core. The primary contention in this section is that CBET is not a theory of human learning. CBET has a philosophical basis, often implicit, but, as I will show, there are questions as to the extent to which CBET can be considered to be a rational educational philosophy which can be assessed in terms of its reliability and validity. In many ways, CBET is a form of magical paradox which requires a suspension of belief and a radical, non-human, view of subjectivity. It is best described as a theory of 'non-learning', radically challenging to previous Enlightenment conceptions of learning. Some authors consider this to be a merit of the approach. According to Jessup (1989, p.66) CBET was a method of displacing previous notions of VET which were considered to be 'educationally orientated'. As considered above, the history of CBET was one of pragmatism and rejection of traditional models of education in favour of those which deal directly with what people should be expected to do. I will argue that it requires that we put aside pre-existing notions of pedagogy as an activity that takes place within, or between, humans. CBET, although it may be a form of education, is incompatible with pedagogy as a discipline. In that way it is truly radical, but its radicalism is not a revolutionary form, but rather a reactionary one that harks back to views of humanity pre-dating science, despite its use of the language of business, technology and the human sciences.

Despite the consistency of the central idea of CBET – that what can be behaviourally assessed matters – when it comes to examining different forms of CBET there are many different types of model. It has given rise to various flavours and conceptions with names such as CBL, the use of the term competency rather than competence and hybrid forms attempting to blend CBET with other theories of learning and education (which is, in actuality, an impossible task as CBET, despite some protests to the contrary, is actually not concerned with learning).

One problem in critiquing the concept of competence is that in doing so critics are accused of caricaturing it (Oates 1989, p.189). Immediately, this attack on the rhetoric of CBET's critics presents an obstacle to sound analysis. Those who criticise CBET, it is argued, are purposively misunderstanding the concept in order to ridicule it. In some

ways satire *is* understandable. In its attempt to reduce occupational tasks to behavioural nuggets for once-and-for-all assessment there is something amusing about CBET, and there is little need to parody it in order to reveal its absurd heart. Its use of deliberately obscure language and conflation of competences ('performance criteria', 'range statements', 'generic competences', 'meta-competences') means that it is difficult to get to the heart of what CBET actually is. The circular lexicon of CBET can seem to make it an internally consistent language above critique. Adopting the language of CBET and asking questions about the validity of meta-competences, for example, partly co-opts one into accepting the premises of CBET itself. If meta-competences are of limited validity, then the question becomes how to make meta-competences more valid (or to use alternative conceptions of competence that might be more valid) rather than asking whether the approach itself is conceptually dubious. Although the literature seems to indicate that there are major problems with the reliability and validity of CBET (Hyland 1994), the analysis which I undertake is more concerned with the effects of the implementation of CBET rather than its ability to create efficient happy, workers. In some ways the question of whether CBET is valid or reliable is not relevant to the critique offered here. In fact, the critique has more weight if CBET was perfectly valid or reliable as then its implementation would be more powerful and extensive and the existential threat to humanity would be greater still. If CBET worked perfectly on human subjects, gifting them the competences to make them ideal workers, then CBET would be a more extensive existential threat.

Although CBET is about rewarding certain behaviours with qualification components (competences), which seems to be a very straightforward task, definitions of competence tend to be slippery and the terms which are used within work on CBET are quite different from 'common sense' usages. There are multiple perspectives on competence within what might be called the CBET movement. In some perspectives, competence is precise, well defined, valid and reliable but in others it is broad, flexible and context dependent. In some theories competence is a holistic theory of learning (I argue it is not, it is a theory of non-learning, or a theory not associated with learning at all) and on the other it can include and envelop existing theories of learning (I argue that it is incompatible with other theories of learning). One common sense definition of competence could be that it is to do with fulfilling a broad organisational purpose by displaying skills and knowledge. This would be so broad as to be

tautological (doing a good job is the best indicator of doing a good job) but it is not so far from the truth of CBET. If we examine the key concepts more closely, CBET is actually something that we can define quite clearly, and I consider that it is possible to do this (without caricaturing the theory). This reveals that CBET is actually a very well-defined theory of non-learning and anti-subjectivism.

One thing that we can be certain with CBET is, as its name suggests, an association with the concept of competence. As a minimum this needs to be 'a specification written down for everyone to see, in an agreed and recognisable format' (Jessup 1989, p.68). It is not enough, for Jessup, that a statement of competence can be simply stated but it needs to be done so in an 'agreed and recognisable format'. This requirement for recognition is universally the case in the CBET literature, but there is nothing to stop private agencies, or individuals, in developing their own competence statements. The source of the definition is unimportant but one of the critical features of CBET is competence expressed as a specification. Competence has a particular meaning in the CBET literature and in defining what competence is it is also necessary to define what competence is not. There is a common sense understanding of the term that is actually different to what is meant within CBET.

To expand on this point, there is a difference between what it means to be competent in a particular field of employment and the concept of competence. The concept of competence as a general educational concept is broader than that used in CBET, and may even contain progressive elements (Avis 2015). In all educational theory it is worthwhile bearing in mind what is known in statistics as the nomological fallacy. Simply put, by calling a construct a certain name does not mean that the construct measures what it claims to do so. By calling a particular assessment of an individual 'competence' does not necessarily make it a measure of their competence as a capability and certainly does not necessarily relate to the individual's competence to perform a particular job. Even in everyday usage competence can be a term of abuse. Few of us would like to be told by our line manager that we are 'competent' as this implies a low standard of performance. It implies a performance that is just good enough to be passable, and it implies a certain level of laziness and demotivation by the employee. One can imagine a situation in which Human Resources departments would use an assessment that an employee was competent as grounds for their dismissal. In a minimal sense, being competent implies that the actions of an individual are coming up to a

certain standard (Barnett 1994, pp.71–72). That standard is externally derived, but the very idea of an external standard seems to preclude the idea of superlative performance. We would not consider being 'competent' to be sufficient for a world class footballer or noted artist, for example. No matter how many competence indicators one could possibly think of, it is difficult to measure improvisation, genius or creativity other than to state that one might know it when it is witnessed. Even for academics, it is difficult to see how the term could be used to refer to a fellow colleague without a cynical turn of phrase. Hyland (1994) considers that one meaning of competence is in terms of a low standard of proficiency, perhaps even the lowest standard of proficiency. Hyland states that 'Although competence is a term of approbation, it also carries with it "lowest common denominator" characteristics' (Hyland 1994, p.19). In some senses, although competence in CBET is intended as a term of praise (in that the skills required for recognition, certification and the proper conduct of a task have been achieved) there is nothing within an individual criteria for a competence to allow additional performance to be rewarded. So the assessment of competence in CBET never considers the superlative. Intrinsic to the nature of CBET is the idea that the achievement of each competence is an end in itself. Once a competence criteria has been met all that remains is for the student or trainee to try for another, different, competence from the same set or from a different set.

There are no degrees of gradation within competence in CBET. Competences are an equaliser between the abilities of different people. The achievement of a competence by one individual is supposedly functionally equivalent to the achievement of competence by another and so any degree of gradation would imply that the competence is not measuring behaviour, but individual differences, which would invalidate the concept of CBET. In some ways, competence *is* about the lowest common denominator at work, being concerned with the minimum behavioural cues necessary to bring about a positive assessment by the assessor. Competence is a binary gate – either the criteria has been met or it has not. This seems contrary to the analog nature of skill and behaviour in the real world.

Despite the possible conflation of binary competence with analog conceptions of skill, there is no getting away from the fact that competence is the *minimal behavioural sequence produced by a human to achieve a positive assessment*. Although a competence may measure a complex behaviour, or sequence of behaviours, which may be regarded as consummate with the

performance of an expert (at higher levels of assessment), it is still minimal in the sense that there is no lower standard possible. Within the statement of competence there is also no maximum within the competence indicator – it is either met (assessment passed) or not met (failed). There are attempts by those involved in the CBET movement to get around this by nuancing the concept, but such moves are purely rhetorical. For example, in some variants of competence it is denied that it refers to the minimum, but rather the standard needed to perform an activity or function (Hyland 1994, p.20). Changing the words does not change the meaning: we can change the term 'minimum' to 'standard' but that standard is still the minimum required. It is not a standard that is open to any gradation or subjective interpretation. It may also be argued that there are things about standards that are different from competences, and that there are things which are captured by standards that are not entirely behavioural. For example, in passing a driving test there may be a need to meet certain standards which are assessed through cognitive skills, or anticipation, based on the subjective views of an examiner regarding driving in certain road conditions. Replacing the term 'minimum' with 'standard' does not achieve much other than semantically. Taking an extreme example, if there was a competence in landing a plane then it might be considered that most people would be able to achieve the minimum in bringing the plane to earth. That none of the passengers, or much of the plane, might survive such a landing might be the result but at least a minimum has been achieved. However, the occupational standard for landing a plane might give criteria for what is expected by the industry. In that sense there is an obvious difference between the standard and the absolute minimum. Once set, though, the competence becomes the de facto minimum standard for that occupation. There are no gradations of that particular competence which are possible, no special praise for better landings or worse (as long as the minimum has been met). So it is more precise to consider that competence is about setting a minimum standard that should be attained for the performance of various tasks. Barnett (1994, p.160) considers this form of competence to be 'operational competence' which is concerned with pragmatism, discrete operations and with an aim of practical effectiveness. It does not, and indeed cannot, deal with more sophisticated processes of intuition, cognition or professional judgement.

Of course, to form a qualification, competences need to be assessed in a group and the creation of statements of competence which are

collectively recognised is central to the assessment process. Wolf (1995, p.1) defines competence-based assessment (CBA) as being 'derived from the specification of a set of outcomes; that so clearly states both the outcomes – general and specific – that assessors, students and interested third parties can all make reasonably objective adjustments with respect to student achievement . . .'. This builds on Jessup's definition of competence by adding the criteria of 'assessors, students and third parties' being able to make 'reasonably objective' judgements (an acknowledgement that judgements can never be fully objective). The notion that a range of individuals, including 'third parties' can make judgements with regard to student achievement seems to be uncontentious but it is itself open to subjective evaluation. Putting 'reasonably objective' aside, there is the issue of how far the notion of competence needs to be shared collectively so that judgements can be classified as commonly recognised. Most specifications of competence have relevance within a sector, or at a national level, but even in these circumstances there are issues concerned with recognition. Many employers, for example, did not know what NVQs were, even following their adoption as a qualification structure in the UK (Smithers 1993). It is certainly not the case that competences will be recognised internationally, or across historical time periods. At the minimum, the assessor needs to recognise the competence in some predefined system, but the extent of recognition necessary for a competence to exist is indeterminate.

One other part of the definition of competence is whether it should be considered as something that resides within the individual and/or something that is enacted in a performance of the competence. The two are not necessarily identical. As will be discussed, CBET does not have an implicit theory of individual internality so the emphasis must be on enactment. It is necessary only that individuals enact the behaviour required by the competence statement. It may be that there is an implied association between the competence and the individual (competences cannot be 'freely floating', independent of the individual, but without an explanation at the individual level this must remain a possibility) but this is different from stating what it is about the individual that has changed to deliver the competence. Theorists of CBET are clear that it is performed behaviour that matters when judging whether a competence has been met and are careful not to associate this behaviour with any particular physical or mental change in the person. This point needs to be explained in greater

length so as to avoid the 'caricaturing' of competence which was mentioned above.

Firstly, it is doubtful that CBET theorists and practitioners *really* consider that there is no actual change in an individual when a competence is acquired. If there was no change to the individual then the competence would have no permanence within the individual. It could be associated with a fleeting, or fortunate, aptitude of that individual. For example, if there was a competence in playing basketball that required evidence that one needed to sink a basket from 50 feet then it might take years of trying before one could do it once, but that could be more from luck rather than acquired skill. Of course, it is possible that a person would acquire some skill in shooting hoops during this time but even if one were not capable of doing this ever again, if the sinking of the ball was at the time of assessment then the competence would be judged to have been met. It may also be the case that someone could sink the ball on the very first try due to pure luck. If they were assessed at this time then the competence could be awarded. In each of these cases it would seem that there is the issue of permanence, or at least of the passing of time, in determining whether someone had a particular skill or not but these requirements would not apply to competence as stated in CBET: performance at the assessment point is all that is required to award the competence.

Advocates of CBET may argue that this problem applies to all forms of educational assessment, and CBET is no different from these. Although one may possess a (General Certificate in Secondary Education (GCSE), a UK academic award) certificate in Physics, for example, that does not mean that ten years later one can remember the equation for force in terms of mass and acceleration. This may be true, but the GCSE assesses more than behaviour; it seeks to ascertain understanding, analysis and application, for example. Of course, it can be argued (in a radical behaviourist fashion) that the writing by the candidate in the Physics GCSE exam is a behaviour, but the educational (assessment) theory behind the physics examination is that between the question (the stimulus) and the answer (the response) there is a process of cognition and appreciation. That might be implicit in CBET, but it is of no relevance to the assessment of competence.

Some CBET work does consider how competence might reside within personhood in terms of distinguishing between competence as a capacity and competence as a disposition (Hyland 1994, p.21). We might describe a competent pilot (in terms of their capacity) or the competence of a performance in a particular situation (such as landing a plane). The former

is a reference to a feature of a person and the second an activity which the person is able to achieve in a certain context. Analogously, the competence as capacity relates to something inside a person which is reasonably permanent (knowledge, skill) and as a disposition relates to something that the person chooses to do (is disposed to do) in a context (attitude, value). As Hyland (1994, p.21) suggests the terms are used interchangeably with CBET, which is sometimes about personal competence and sometimes about work situations. However, in practice competences may be associated with a person but they are never located in any specific aspect of personhood. This may appear paradoxical but, as will be explained below, CBET is dependent upon a particular paradox of individuals being judged for performance of a competence without particular concern as to what it is that might change the internality of an individual (such as a model of pedagogy or andragogy). Competences, in CBET, can best be thought of as a non-located capacity which is associated with the person. This makes it quite different from other educational assessments which are usually constructed to determine what capacities the individual, or collective, have, before determining if an award should be made. In CBET the person has (or had) the ability to perform the competence but where that resides in personhood (if at all) is a mystery.

So far, we have managed to define the essential features of competence as relating to the performance of a (binary) displayed behaviour, non-locatable within personhood (although associated with it), and with some kind of temporal and external credibility. The competence should not erode rapidly over time (although there is no guarantee that it will not do so) and should be recognised (although the extent of this recognition may be questioned). This definition is perhaps deliberately strict, but it summarises the bare bones of the concept. This does not mean that there are different versions of competence. As Hyland (1994, pp.22–23) shows there are many different conceptions of competence but there is no agreed or accepted definition. In the next section I will examine the ways in which theorists of CBET have tried to move beyond the idea of 'basic' competence and whether these add anything to the way in which we understand the concept.

MANY COMPETENCES

Perhaps because of some of the inherent problems with the concept of competence other terms have been created that are used to nuance competence, but these do not alter the basic definition in terms of the binary

assessment of a behaviour. These concepts include professional competences, generic competences, meta-competences and broad competences.

The use of *professional competences* in CBET literature initially seems to broaden the concept of competence. According to this view, competence in a professional role may comprise all sorts of activities and behaviours which cannot be located within the notion of functional (basic) competences (Hyland 1994, p.22). This is sometimes acknowledged by advocates of competence. Tuxworth states that one critique of competence is that 'the competent person has abilities and characteristics which are more than the sum of the discrete elements of competence derived from job analysis' ('the whole is more than the sum of the parts' Tuxworth 1989, p.11). This is obviously not consistent with a CBET approach as it implies that there is aggregation beyond basic competences that might produce something else that cannot be contained within the structure of competences. These emergent properties of a collection of individual properties might be equivalent to mental processes such as knowledge or understanding which cannot be competences (as they are not behavioural). So functional competences are not competences.

In another attempt to (allegedly) solve the problem of fragmented, seemingly non-additive, competences, the term *generic competences* is sometimes used which refers to a competence that is not bounded by an occupational category. This may include abilities such as communication or numeracy. Again, these generic competences imply more than a simple aggregation of functional competences. The number of possible speech acts and combinations, situational factors and judgements in any context is far beyond those that can be mapped out as functional competences. Numeracy is bounded only by the symbolic manipulations possible within mathematics, which is infinite. There has even been an attempt by those in the competence movement to create a 'competence to rule them all', an organising or *meta-competence* with the purpose of controlling other competences. This then seems to incorporate knowledge and the very idea of mind within the competence framework but conceptions of knowledge and learning are problematic for CBET. The idea of 'meta-competences' seems to imply some kind of homunculus that controls competences whilst it is a competence itself.

Similar to the distinction that can be made between basic and generic competences, the idea of *narrow* and *broad* competences introduces the nebulous notion of employer expectations. Mansfield (1989) considers that competences can be routine job skills which could be considered to be

narrow competences or wider characteristics that are supposedly required in the work place. These 'broad' competences are about the ability to perform 'whole' work roles to a certain set of standards (determined either by job content or standards) in real-world working environments (Mansfield 1989, p.26). This idea of 'broad' competences, suitable for workplace performance, is often seen in the CBET literature. It seems to imply that employers can specify those broad skills that are required in their workplace with omniscience. This means that employers are responsible (individually or collectively) for setting industry standards. The standards approach is considered by its advocates to be the most capable of delivering knowledge of 'broad competence' through industry lead bodies and 'assessment technology' (Mansfield 1989, p.34). There is a close correspondence between the demands of employers and statements of competence. Mitchell (1989) uses the concept of 'work role' as the key feature of competence being 'an expectation to which any individual is required to perform; it is not a characteristic or trait of a particular individual, which is the flavour of much work on competence' (p.55). Mitchell is correct to state that the idea of 'expectation' is a key feature of competence, as the idea of some standard that individuals are required to meet is central to the concept but the 'characteristic' or 'trait' conception is more problematic. Indeed, the mapping of all competences required for any occupation is a grand challenge for CBET. Tuxworth (1989) argues that competence must be measured accurately either through a mapping of the tasks necessary for the performance of a particular role (producing a 'competence map') or by creating a list of the competences displayed by 'superior performers' in a role. This places a substantive epistemological burden on those who create competency statements in terms of language and assessment:

> Competency-based models ultimately rely on measurable assessment. In other words, if a proposed competency cannot be described *unambiguously* and *subsequently measured*, it probably is not a competency. (Voorhees 2001, p.11, my italics)

Jessup (1989, p.73) considers that a computerised database of competences could be constructed, presciently allowing for personalised learning where individuals could consider which competences they require to make further progress in their careers. However, such endeavours are limited by

the degree to which it is possible to linguistically specify the behaviours required in the real world (Lum 1999).

Aside from behaviours, CBET cannot specify what other traits are desirable in individuals. Deciding on what employer expectations are is difficult, but though adopting a technique from a consultancy group (Mitchell 1989, p.58) it is apparently possible to produce such a map of employer expectations called functional analysis, which is employer driven:

> Functional analysis considers the expectations in employment as a whole in that it proceeds from the top downwards, breaking the work role for a particular occupational area into purposes and functions rather than looking at what is 'about' in the field and gathering activities into groups. It is therefore essentially integrative and should at the end of the day be able to provide . . . an occupational map across the whole economy. (Mitchell 1989, p.58)

Functional analysis, at the highest level, adopts a notions called 'key purpose' which, although not as general as 'maximising profits' provides an organisational slant on competence (Mitchell 1989, p.58) being the purpose behind a particular job role (advising customers, landing planes, selling coffee). Jessup (1989, p.75) also considers this wider remit of competence:

> Competence is conceived as being much broader than traditional notions of skill as has existed in traditional training programmes. Competence should incorporate all that is required to perform effectively in employment which includes managing the competing demands within a work role, interpersonal relationships and so on. (Jessup 1989, p.75)

Debling (1989, p.80) also gives a similarly broad and employer-focused view of competence:

> Competence pertains to the ability to perform the activities within a function or occupational area to the levels of performance expected in employment.

Stanton (Geoff 1989, p.99) considers the supplanting of static models of role competence (which consider the ways in which a role can be broken down into various tasks) with a dynamic model where competence is based on continually improved performance in the workplace. Shackleton (1989) broadens competence beyond the economic to include 'social and cultural goals' (p.107).

These definitions of other forms of competence are problematic. The introduction of terms such as 'all that is required', 'the levels of performance expected in employment', 'continually improved performance in the workplace' consider that competence cannot be specified in behavioural terms precisely, but needs to be adjusted to the expectations of the employer. This could imply a constant adjustment based on employer whims or the continual expansion of skills. Either way, the idea that a behaviour fixed at one point in time could meet these shifting expectations is problematic. Furthermore, introducing notions of 'traits', 'generic competences' and 'meta-competences' suggests that there is something more than behaviour which is important in assessment. This is undoubtedly true, but this contention would mean that the notion of competence is itself invalid. We can see this paradox more clearly when we consider how CBET treats the issue of knowledge.

CBET and Knowledge

Practitioners have long been concerned that CBET does not have a conception of knowledge (Haffenden and Brown 1989, p.149). For some this is not important. For example, Mitchell (1989, p.59) considers that analysis of competence is 'an expert system which requires a good deal of background understanding of the philosophy and developments in standards in order to put it into practice as intended'. Although it is not clear what Mitchell understands by philosophy (although this would presumably be a philosophy which is different to that studied by philosophers of education or pedagogy) the meaning of expert system is clearer, deriving from business consultancy. Hence knowledge of the world is a problem to be solved from an algorithmic assessment of the views of experts.

This view of an expert system in producing competences fits well with CBET, as competence is not about what people know, it is about what people do, a behavioural epistemology with evidenced behaviour being sufficient to assess that the person is linked with a competence. This hard truth of CBET (that behaviour is all that there is) has been difficult even for theorists within the discipline to accept and there have been several attempts to bring 'knowledge' into CBET. I will consider these here, not just because the issue of knowledge is important for education, but as it is indicative of the complexity (and impossibility) of bringing the internal world of the individual into the behavioural world of CBET.

One way of attempting to bring knowledge into CBET is to make 'an account' of this when making a behavioural assessment. Tuxworth considers that a characteristic of CBET programmes is that 'Assessment requires performance as prime evidence, but takes knowledge into account' (Tuxworth 1989, p.15). Tuxworth (1989, p.21) also considers that 'CBET does not diminish the importance of knowledge and understanding. It does however change the grounds for its justification'. This post hoc assessment of knowledge does not make any sense even in its own terms. If the performance of an activity serves as 'prime evidence' then how can knowledge be taken 'into account'? Even if the knowledge that a person has of the topic contradicts the performance then it is difficult to see how a CBET model that takes performance as 'prime evidence' could fail the student. For example, if I believe that an invisible angel gives me the power to fix a burst pipe, and I mend the pipe correctly every time whilst under strict assessment conditions then it would be against the spirit of CBET to fail me. Similarly, if I have an intricate knowledge of how to fix a pipe which has been tested by engineers and physicists but I am always unable to do so then it would seem to be against the spirit of CBET to pass me. These may appear to be extreme examples but there is no robust method within the definition of CBET to take knowledge 'into account'. Such a conception would be perhaps a hybrid of CBET and another learning theory, but would be more chimera than hybrid as the two parts do not come together to form a coherent whole. One can assess behaviour and call this a competence (in the CBET model) and that alone would be sufficient to award achievement of the competence. 'Taking account' of knowledge (by perhaps giving a written test) does not change the status of the competence.

If knowledge cannot be 'taken into account' within CBET then perhaps it can be implied. Hyland (1994, p.24) considers that an ad hoc strategy used by some theorists is that knowledge is a reflection of competence as a 'second' or 'third' order concept. These ideas of a 'second' and 'third' order concept arise from data reduction techniques in statistics such as factor analysis and structural equation modelling whereby it is possible to create factors and entities related to the original data. For example, a set of behaviours related to coffee making (pouring water, grinding the beans, checking the temperature, adding the milk) can be aggregated into a first-order factor which we could call 'knowledge of coffee making' (although note that there is nothing in aggregating these behaviours that implies anything about individual knowledge). This would be called a first-order factor. By aggregating similar first-order factors ('knowledge of coffee making',

'rapport with the customer', 'health and safety aptitude') we could create a second-order factor ('expert barista'). The thing to note about first and second-order factors is that they have a mathematical relation to the original competences, but that they are fictional entities subject to the nomological fallacy (calling an entity a certain name does not make them the thing that we call them). Additionally, with both first and second-order factors there is an issue of interpretation in terms of how these are to be constructed. A factor analysis, or structural equation model (unlike a regression analysis), does not produce a single defined solution and there are a variety of factors that can be produced by such an analysis. This makes the interpretation of the results from such analysis extremely subjective. One way to rebalance the relationship between knowledge and competence is to claim that they are of equivalent status. Wolf (1989) claims that *both* competence and knowledge are constructs. She defines competence as 'the ability to *perform*: in this case, to perform at the *standards* expected of employees' (Wolf 1989, p.40). As we have seen above, such claims about expectations are contentious as what employers expect can change over time. Knowledge and understanding are, for Wolf, also constructs. Rather than collections of facts they are associated with cognitive schemas and mental models (Wolf 1989, p.42). However, in this model knowledge and understanding are connected to competence and can only be inferred from *observable behaviour* – 'Knowledge and understanding are constructs which have to be inferred from observable behaviour, just as much as competence itself' (Wolf 1989, p.45). In a nested model of the relationship between behaviour and knowledge the direct observation of work activities and projects becomes 'evidence of performance "from which can be inferred" knowledge' (Wolf 1989, p.46). In this way, knowledge and understanding 'inhere in competent behaviour' (Wolf 1989, p.52). In later work, however, (Wolf 1995) she makes clear that knowledge is not really what competence is about:

> The competent plumber is the one who can build or mend an efficient central heating system, not the one who can define a substance's specific latent heat of fusion. Doctors deservedly attract patients on the basis of their 'bedside manner' (which can reassure and thereby elicit information and aid diagnosis) and not simply their ability to score more than 50 % in anatomy examinations. (Wolf 1995, p.52)

The above may be so (but a cursory enquiry as to the skills involved in plumbing shows that the latent heat of fusion is a good thing to know

about, as is anatomy for doctors). Not considering knowledge implies an 'empty' doctor or plumber who can perform certain digital competences but whose internality is not an area of interest for assessment. There appears to be some inconsistency between this statement and what Wolf is saying in 1989. However, what is clear is that she believes first and second-order constructs can be developed *from behaviour*. In terms of assessment it is behaviour which matters and 'inferred knowledge' is not, in this analysis, really knowledge at all, but a statistical construct built (subjectively) through behavioural indicators. We might imagine what knowledge is but that (first or second order) imaginary leap is built firmly on behavioural characteristics.

Rather than attempt to combine knowledge with behaviour, or infer knowledge through statistical analysis of behavioural indicators Mitchell (1989, p.60) considers that knowledge is the last resort for assessing competence. If it is not possible to assess competence through behaviours in a given context then it is necessary to use knowledge. Mitchell calls knowledge Type D evidence of competence with ongoing work (Type A), skills tests (Type B) and predetermined sample work (Type C) ranked more highly. Knowledge is therefore folded into 'evidence of occupational competence' as a type, or variety or competence. Knowledge becomes a weaker form of evidence than practice in filling the 'assessment gap' (Mitchell 1989, p.61).

For Debling (1989, p.87) knowledge is also a third-order form of competence and it is 'intimately linked to competence'. Knowledge is taken to be a weak form of competence, some sort of brain flexing that is an indicator of behaviour. There is no distinction made between the stuff of behaviour and that of knowledge. Conceptually they are treated as if they were identical.

We have seen that attempts to bring competence and knowledge together are questionable. Even in Wolf's attempt to nest competence within knowledge, the existence of knowledge as an individual human state is not compatible with the notions of competence we find in CBET.

There could be many other factors, aside from knowledge, which are responsible for the display of a competence. This *is* consistent with the epistemology of CBET, which even in more elaborate models considers that knowledge as an internal characteristic of the subject is unimportant. This is often defended on the grounds of pragmatism. Hyland, for example, states that 'the NCVQ model has sacrificed reliability of assessment in the drive for validity' (Hyland 1994, p.39). Tuxworth considers that, in

terms of validity, the face validity of CBET is high, but the predictive validity is not (Tuxworth 1989, p.11). However, face validity is only high if the assessment is truly measuring competence and is not subject to the nomological fallacy (that calling something competence makes it so). Wolf (1995) concedes that the notion of a 'well defined domain' is most important for CBET (p.55). Without that definition the behaviours required to assess a competence are meaningful only in their own terms, and not in terms of the wider world of work.

For some in the CBET movement, and consistent with the approach, knowledge is not considered to be relevant. The reason for this disregard of knowledge is the basis of CBET in Skinner's theory of operant conditioning (Hyland 1994, p.51), even progressing beyond this theory to a more radical model where the human subject is of no concern. This is a model where what a person does matters not only more than what a person knows (Hyland 1994, p.63) but with no account of knowledge and understanding (Hyland 1994, p.63) and is only concerned with strategies of 'measurement, assessment and accreditation' (Hyland 1994, p.67). In HE, the CBET project will produce a graduate education that is 'undermined epistemologically' (Hyland 1994, p.94). Therefore CBET has a

> generally impoverished conception of human learning . . . *Human learning is unintelligible* without reference to the context of learning and to the development of understanding, and this focuses attention on aspects of cognition and the nature of the learning process. (Hyland 1994, p.51, my italics)

Hyland (1994) considers that this absence in CBET is a problem for advocates of this approach and that there is a duty of supporters of this approach to account for this epistemological absence:

> advocates of competence still need to explain what sort of knowledge is meant to underpin competence and just how the connection between knowledge and competence is to be conceived. (Hyland 1994, p.67)

Others consider the relevance of knowledge and learning in the process:-

> People who have ceased to learn cease to be competent. (Eraut 1989, p.181)

Ironically, there is no real necessity for those within CBET to account for this absence. Rather than being 'epistemologically absent', CBET is remarkably consistent in its view that the assessment of behaviour is the most important consideration, foregoing considerations of knowledge. As has been shown, knowledge in CBET is either irrelevant or is a behaviour (whether a proxy behaviour or a second, or third, order factor). The idea of knowledge as a behaviour, or that knowledge does not exist, points towards a very strange conception of learning. In fact CBET only becomes intelligible if we consider it to be a theory of *non-human learning*.

CBET as a Theory of Non-Learning or Non-Human Learning

Whichever model is used CBET is a strange conception of human learners as it eschews knowledge. As Hyland (1994, p.51) states CBET is unintelligible as a model of human learning. Despite the consistency of opinions that CBET is difficult to define and that there are many competing definitions of the concept, in practice it is easy to specify what it is but not in human terms. It is not that CBET is hard to define it is that in defining it, CBET becomes an unusual form of activity that does not really fit with previous ways that we have looked at human learning. The primary assumption of CBET is that (strongly) humans do not have any kind of internality or (weakly) that such internality is largely irrelevant to the process of acquiring competences. Competences 'hang around' the individual in CBET. They are somehow connected with the individual but they are not located in any given mental, physical or relational space. We cannot say that a competence has arisen because the individual has made significant cognitive links, or their muscles have improved, or that God has granted them spiritual fortitude to work to do something that they would not have had the capacity to do before. As we have seen above, in some theories of CBET knowledge can sometimes count as a form of competence, as a last resort perhaps, but even here knowledge is a form of, or proxy for, behaviour. The knowledge is not evidence of a cognitive transformation in terms of analysis or synthesis, but a demonstration located in no place within the individual. For shorthand, I call the mental, physical and spiritual structure of humans *internality*. Internality is the idea that humans have anatomies and physiologies, that they

possess mental processes and psychologies, and perhaps that they even possess an individual soul. Humans are made of 'stuff' whether that is bodily parts, a mind or a spirit. It would seem that there is no contemporary alternative to internality, other than idealism, but there was a (pre-enlightenment) time when the internal nature of individuals was mysterious and individuals were considered to be perhaps meat, with a soul wrapped up inside of it, and where autonomy and freedom of thought were heretical.

Competence does not consider the notion of internality. This makes the notion of competence mysterious. We do not know where the competence is located. In effect, the only justification for associating a particular competence with a particular individual is a quasi-judicial one. The quasi-judicial attachment of competence to an individual is one that occurs through the granting of legal powers to an awarding body in giving it the 'right' to award a competence, or perhaps a set of competences that forms a qualification. The individual is granted the award in terms of their performance and this is the method by which a competence, or qualification is attached to an individual (a named person).

The named individual has, in a quasi-judicial sense, the competence, which never atrophies (apparently) and which will persist whatever the changes to the physical, mental and spiritual structure of the individual independent of their internality. At first it might seem that all qualifications possess this quality, and to some extent they do in that they are awarded under a legal and regulatory framework, but not to the extent that they forgo considerations of internality. For example, if one is awarded GCSE Mathematics in 2000, but then in 2004 suffered a tragic brain injury making one incapable of understanding numbers, then one might say that despite having been awarded the certificate the impairment means that they are unlikely to be able to cope with a position that requires them to perform calculations (without getting into the argument of whether mathematics is about number or is a system of logic). That is because GCSE mathematics is based on the conception that Mathematics is a cognitive process involving skills of application, analysis and synthesis. We would therefore have good grounds for suggesting that although that person has a GCSE in Mathematics other factors mean that they might find numeracy difficult.

A competence does not have this relation to internality. Competences are based purely on behaviour and not on notions of internality. If another individual was judged to have met a competence in the year 2000 which

meant that they had, on one occasion (perhaps on more than one if there were a range of conditions) established the area of a circle (perhaps a biscuit in a coffee shop) based on its radius and then suffered the same type of impairment in 2004 then we might guess that they could not perform the same task again but there is nothing in the nature of the competence to suggest that they would not be able to. Competences do not make any judgements as to how and where, and indeed if at all, learning has been established. They simply equate the performance of a task at a certain time with an individual. This leads to quite paradoxical situations which could quite easily lead to the sorts of caricatures of CBET that should probably be avoided (Oates 1989). For example, if an individual dies then does it mean that they can still perform a particular competence? We have established that there is no relationship between internality and the performance of a competence so it could be plausible that the lack of animation of an individual gives no pedagogical reason that the performance would be impaired. In terms of the consistency of CBET as a theory of competence the only reason that we have for expecting that the individual would not be able to perform the competence is that the individual has come to an end as a legal entity. Even so, this is a weak justification as there was nothing in the original award of the competence to suggest that anything about the individual was the source of the behaviour. Even if we don't go to such extremes, there is no real reason why an individual in a coma (or who is brain-dead) would not be able to perform a competence. This sort of caricature is actually helpful in forcing the issue for advocates of CBET as to what it is exactly about the individual that changes when they have reached a standard required to perform the competence. If this is irrelevant and non-locatable (as is universal in all theories of CBET) then even these caricatures stand. If there are changes in the individual and these are, in some way, identified then this is not CBET but some kind of hybrid theory. In creating this hybrid theory then there is something important about changes in individuals beyond behaviour (perhaps learning?) and that invalidates CBET which considers behaviour the only way that a competence can be awarded. If learning is involved, it opens up all sorts of questions about human psychology, physiology, spirituality, pedagogy and andragogy.

CBET is not, therefore, a theory of learning, pedagogy or andragogy. A theory of learning considers that there are changes in a (usually in educational theory) human organism that lead to (possibly) changes in its behaviour. Theories of learning are often causal, tracing the path through

which individuals make affective, behavioural, cognitive and (perhaps) spiritual changes and how these become embedded over time. Even strict behaviourists had a physiological justification for their approach, with human physiology as the internal mechanism through which a given stimulus produced a response. Although there are links between CBET and behaviourism, as discussed above, behaviourists have a clear theory of learning and pedagogy. They consider the relationship between stimulus, reward and response and are prepared to advance physiological mechanisms for learning at the level of the organism. CBET does not consider this, so the criticisms of CBET here are not intended to be critiques of behaviourist theories of learning which do have some theory of internality (even a physiological or mechanical one).

Some theories of learning are less concerned with causality than others, but consider processes of reflection, gestalt or understanding. Others do not locate learning within the individual but as existing between individuals, within collectives or between humans, non-humans and the material world. There are even some theories that consider learning to be a spiritual process that exists in some transcendent domain or that is beyond the control of human will. What all of these theories have in common is some kind of explanation as to how and where learning takes place Even in postmodernist and nihilistic theories of learning the futility of explanation is still an explanation as they consider why causal and universal explanations are of no utility. If CBET theories took this route at least we might know why they are so wilfully dismissive of internal explanation, focussing only on competence. If anything, they are fundamentally opposed to the postmodernist and nihilist, considering that there is a single rational, technical and progressive solution to the issue of assessment. CBET makes no judgements of pedagogies, often positioning itself above such theories in terms of its independence from learning methods and settings. There is no pedagogical method of delivering CBET, it is purely based on the pragmatics of what works in producing and assessing competences.

Although CBET is not a theory of learning, pedagogy or andragogy, it can still be considered to be associated with education and training. Hence rather than call it something like CBL or CBA it does suit the – ET suffix. That is, it can be seen to be part of a system of education and training. What CBET does is to fulfil the functions of an education and training system in terms of the assessment of competence, the awarding of qualifications and the preparation of individuals for the outside world, at least as

it relates to employment. CBET can, therefore, fulfil all of the aspects of an education system in terms of the social sorting of individuals, their socialisation and ultimately their social control. It also provides a method of allocating individuals to positions in the labour market. The independence of competence from the systemic features of education systems means that CBET is infinitely flexible in terms of mode and timing of delivery. CBET can be delivered in many different modes including distance learning, off-the-job training and informal modes as well as in more formal education settings. Although it is often applied to vocational modes, CBET can equally be applied to schooling, adult education, apprenticeships and HE. It has the lifelong (across chronological time) and lifewide (across domains) dimensions of learning without actually considering learning. So there is no contradiction in adding education and training to the competence-based element of CBET. Indeed, we have recently seen CBET applied well beyond the vocational fields where it first arose, particular in HE where it has exhibited a resurgence. As will be discussed later in this book, there are good reasons to suppose that CBET is a revolutionary form of education and training as it represents the complete realisation of capitalist education in terms of the fulfilment of labour power requirements without the messiness of dealing with individual subjectivity, or even workers objective conditions.

CBET may not be a theory of learning as we understand it, but it is possible that the definition of learning that we are considering may be too narrow. Perhaps CBET is aimed as a theory of learning for some future beings, but not at humans as we currently understand them. CBET may be aimed at 'producing people who might be able to demonstrate performance but would have no understanding of what they were doing' (Wolf 1995, p.27). Such beings might be devoid of internality and operate in a zombie-like fashion, carrying out a pre-determined set of binary behaviours and only being assessed on whether a competence is met. This does not seem to be compatible with any pre-existing form of pedagogy which considers that some kind of intervening cognitive (or other) process may be responsible. Of course, in some situations we can demonstrate performance without fully understanding what we are doing. In playing tennis, for example, we may have a tacit understanding of why we are doing something but be unable to fully articulate every stage of our performance in terms of the physics involved. Some types of skill are tacit, or are part of what might be called 'muscle memory' which means that we cannot fully articulate what we are doing. Indeed, this is possible with many forms of

education and training. In that case, Wolf's statement could apply far beyond the dimensions of CBET. In many fields, people can demonstrate some limited aspects of performance without knowing exactly what they are doing. However, in such fields there is someone who knows what they are doing, or at least has a testable theory, or set of concepts, or idea, about what they are doing when they display a performance of a certain skill. The difference with CBET is that *nobody* who gains a skill by this method understands what they are doing, or if they do then this understanding is *not relevant* to the production of the behaviour. In the tennis analogy, CBET can say that a person has a competence for a dimension of tennis (can hit the ball over the net in match play perhaps) but there is no need to understand what it is about that person, or what has changed about that person, to make that behaviour possible. This involves abandoning notions of causality in that all that we know is that the subject is present when the competence is met, not what the subject does which meant that the competence was fulfilled.

CBET is odd as it considers a subject with no internality (no changes in the body, mind or spirit due to learning), exhibiting binary behaviours (either meeting the competence of not) who exists outside of causality (their presence is correlated with events but we do not know the causal process). This only seems strange if it is assumed that the subject is human. CBET may work perfectly well with animals, exopedagogical (Lewis and Kahn 2010) subjects (aliens, monsters or mystical beings), or post-human subjects. Equally, CBET may work with what might be called a pre-human or pre-enlightenment subject where there is no conception of internality. CBET may indeed make its own conception of what it means to be human. As Snaza et al. (2014, p.40) consider 'What it means to be human is constructed differently at different historical moments, by biology, philosophy, political theory, and *educational institutions*' (my italics). It is quite possible to conceive of human subjects where there is no conception of internality. As has been discussed above, radical behaviourism approximates such a theory in that it does not consider the internal mental process of an individual to be important in bringing about a response from a given stimulus (even though it might posit some directly observable physiological mechanism). We could consider exopedagogical or post-human conceptions where such internality is equally unnecessary. A magical conception of the subject, whereby a competence hangs around the subject like a fairy that once was able to wish its human subject into producing a behaviour would work. So could a

fully mechanised, sealed, human android whose inner workings were incomprehensible but who once could produce a certain behaviour when assessed. As would an alien being whose inner biology is mysterious. These would provide a pedagogically congruent fit with CBET as there would be no need (or in some cases possibility) of a theory of internality. Of course, even in these cases, there could be some operationalised theory of what exactly was happening to bring about the performance of the competence. In the case of the fairy, for example, people could speculate what it was about the fairy's mood on that particular day to bring about the production of the competence (and it could be speculated whether that was sufficient to possibly bring about the performance of the competence in the future). In the case of the robot and alien it could be considered that there could be a (at this stage unknown) element of mechanics, electronics or biomechanical process that was producing the performance of the competence. Our ability to speculate about mechanisms and internal processes, even when the subject is exopedagogical, shows us just how extreme CBET as a theory of competence acquisition actually is. In CBET humans are empty, forever unknowable, slabs.

CBET can only be made intelligible, then, if it introduces a theory of knowledge (an epistemology) along with a theory of learning (a pedagogy) for non-human subjects or if it rejects the existence of, not only a human subject but the notion of the subject, subjectivity and internality entirely. One would think that this extreme position should make it extremely unlikely for CBET to survive seriously as an approach to education and training. Even sentimentally, we like to consider that we have a subject in front of us that is capable of thinking and feeling. CBET is notionally intended for humans, not for animals or robots. It does not attempt to employ cybernetic, or post-human, analogies or metaphors even if the way in which CBET is defined would seem to make this the most productive theoretical coupling. Rather, CBET is mundanely earthy concerning its subject matter of skills and the best way of delivering these in terms of competences. It is rather ironic that CBET, which gains much of its rhetorical power through appeals to common sense, is so alien when theorising about individuals and learning.

As we have seen above, there is no way in which CBET can be humanised to bring in theories of learning and subjectivity. 'Ad hoc' assumptions concerning the nature of knowledge or learning would undermine the central tenants of the approach to 'non-learning'. Of course, it can be claimed that CBET can be coupled with other theories of learning which

make claims to changes in the internal mental state of individuals. However, then there is a question as to the degree to which CBET is assessing what is important in bringing about the performance of a given competence. If there are internal changes in an individual's mental state over time, for example, then the durability of competence and even its foundations can be questioned. For example, it may be that the individual can 'cram' to accumulate sufficient knowledge to land a plane but then be unable to land a plane a year later as the memory of the accumulated knowledge has faded. So coupling CBET with theories of internality (pedagogy, andragogy) is fraught with problems as it ultimately rests the performance of competence on mentalist epistemological foundations. CBET is not even a manifestation of cognitive capitalism but rather an appeal to a pre-cognitive position where the thoughts and internality of the learner do not matter. As we shall see later, it is mistaken to consider that capitalism evolves in a progressive sense to exploit all aspects of individual personhood whilst relying on a historicised conception of the person. The capitalist is interested in labour power *in the abstract*, and this does not have to map onto concrete conceptions of the person. The type of capitalism that CBET is appealing to is one where labour power has reached a full stage of realisation (at least in terms of education and training).

Conclusion: competence, the meta-competent being and exopedagogy

Although I have tried not to fall into Oates' (1989) easy trap of 'caricaturing' CBET I have used metaphor and analogy to try and get to the heart of the concept. In this section I synthesise the above discussion to consider what are the foundations of CBET and how it is a distinctly non-human (exopedagogic) mode of learning. In the above discussion perhaps sometimes there has been cynicism regarding CBET but irony is also a mode of understanding used in interpreting what to some appears to be a technical, common sense, solution to our economic and social problems. I am not alone in making critiques of CBET that are highly cynical concerning its methods and application. When critiques of CBET are made by other theorists they are usually controversial and do not hold back in terms of criticising the approach. For example, Hyland (1994, p.ix), who is probably the best known and prescient critic of the approach, makes a highly damning critique of CBET calling it

'fundamentally flawed, disastrously misguided and entirely inappropriate to our current and future education and training needs'. He goes onto say that the approach is 'logically and conceptually confused, epistemologically ambiguous and based on largely discredited behaviourist learning principles' (p.x). The extreme nature of these criticisms is fully justified when CBET is considered in terms of its philosophical basis. In fact, Hyland does not go far enough in this critique of CBET, at least in terms of its relation to behaviourism. As has been shown (above) CBET has only a loose connection to behaviourist learning principles, concerning itself mainly with the pragmatics of assessing competence. It also goes far beyond behaviourism (even the most radical kind) by not being concerned at all with intervening processes (even of the physiological type). In considering the problems of CBET, it has become obvious that the approach is not about learning or education at all. Rather, the approach eschews any conception of learning, education or the living subject.

In terms of the philosophy of CBET, although there is no explicit philosophy, there are some similarities between CBET and radical behaviourism, excepting that CBET is seemingly even more extreme as it eschews any conception of the individual, subjectivity and what I have called internality. This leaves the question as to how CBET should be defined, and whether it is possible to consider a definition of CBET at all. At points during the above discussion (particularly when considering the exopedagogical and non-human features of CBET) it might seem that CBET is a rhetoric, with no possibility of definition or conceptual soundness. The ease with which CBET can be considered to even be a form of magic (the magic fairy delivering the ability to perform the competence, or competences 'hanging around' individuals like auras) might make us consider that CBET cannot be pinned into a simple, or rational, theoretical framework.

In considering this view, there is a need to first dismiss the idea that there can be a 'compensating' theory of learning that can get around some of these difficulties by presenting a theory of internality. Hyland believes that, to a certain extent, there can be coexistence between CBET and other approaches to education and training and therefore that there could be a compensatory theory. He states that 'open /autonomous learning and CBET approaches – can at one level manage to coexist' (Hyland 1994, p.13). Whilst the terms 'open' and 'autonomous' may indeed fit well with CBET it is not necessarily the case that CBET is synonymous with 'learning'. In fact, CBET can quite happily coexist with conceptions

of open and autonomous assessment, but not the learning aspect. As has been shown above, CBET is not dependent upon the location of provision or curriculum. As CBET is such an ambiguous notion then it is better to refer to varieties of CBET as flavours rather than definitions. There are, though, certain commonalities between flavours and here we get to the definition of CBET.

Firstly, a common feature all CBET theories is that they all focus on assessment through the delivery of a digital and observable effect on reality (supposedly) independent of the person that is being assessed. Digital in that there can be no unspecified degree of gradation in the effect on the real world. Competences can include binary outcomes but these are not open to further possible interpretation or gradation. An assessment criteria, as given by a competence, is either met or it is not. There is no possibility to remark upon zero, or partial, completion of a competence, as the competence would not have been met. This 'evidence' would not comprise part of a competence assessment portfolio as it would imply that competence is not really about behavioural assessment. On the other hand, it is impossible to award over achievement of the competence (if it is more than met). This could not comprise part of the competence assessment. The need to assess behaviours as discrete packets of performance means that it is not possible to include analog kinds of performance, where there are gradations or qualitative perceptions of what has taken place. There is no conception of gradations in assessed behaviour. The effect on reality is not only digital but must be independent of the internality of the person concerned whilst being associated with that person. Fundamentally, it is the reality independent of the person which is being assessed. If the assessment was made of changes in reality which also included the characteristics of a person (other than their presence) then the assessment would not be behavioural. For example, producing a cup of coffee to industry specifications could clearly be a competence, whereas producing a cup of coffee to industry specifications with knowledge of the coffee beans origins, or with love, could not be as these would not be competences (of course, answering questions from a customer about the origins of coffee beans could be a competence). If individual capabilities were built into the competence then the competence would be more than a behaviour (which it cannot be). However, although the competence statement must not include any judgement concerning individual capability it must (paradoxically) assume the presence of the individual.

Secondly, the competence needs to be observable, at least from the perception of the assessor or the assessment process (and the assessor adopts a subservient position to the process, which is often driven by procedure and the assessor themselves subject to a regime of competence if they are to be prepared to judge the competence of others). The judgement of assessors is actually a significant issue for the validity of CBET (Wolf 1995, p.68). In the case of CBET the behaviour needs to be observed once. Obviously there are questions as to the validity of the performance of behaviour in this case. The way that the universe works means that there will be a probabilistic element as to whether the competence will be achieved in any given situation. However, this can be built into the schedule of assessment. Rather than issues concerning reliability and validity the issue concerns the invisibility of processes and internal mechanisms. Such processes (including cognition) cannot be observed and therefore cannot represent part of the assessment regime.

Thirdly, the negation of an ontology which includes notions of causality. Competence measures are correlated, rather than causal, with behaviour. That is the demonstration of performance must happen at the same time that the individual is co-located in the same context. Simply put, the individual must be present at the same time as the behaviour takes place. Of course, an assessment would not (in theory) be passed if the individual was not taking part in an activity which implied the performance of the assessment but this is only true to a certain extent. For example, if I was asked to make a cup of coffee to the specifications of the industry and I coincidentally made it at the correct temperature then I would be, in theory, awarded the competence. There is no way of knowing that there was an absence of mental processes that were involved in making the correct standard of coffee. As stated above, the demonstration does not need to make any references to the internal mental or physical processes of the individual or to consider any notions of *a priori* causality where it is prior learning that leads to a change in the perceived reality. CBET does not rule out chance, possession by demons or magic as long as there has been a perceived change in materiality. Of course, such things can be implicit or inferred but CBET has literally no requirement for them, judging them to be beyond the world of CBET. As Mitchell (1989, p.60) states, competence does not concern 'individual traits' but 'the individual's performance against the expectations as given in the standards'. If CBET does attempt to 'bring these in' through a post hoc justification then this contradicts the totality of CBET resulting in a quite

bizarre set of assumptions. On the other hand, CBET considers that the material world outside of the internal world of individuals can be measured accurately and without error. As Barnett (1994, p.72) states 'competence is concerned with predictable behaviours in predictable situations'. So whilst the internal world of the individual is mysterious and irrelevant, the world of measurement and of physical objects is unquestionable and subject to accurate measurement. This view has much in common with primordial behaviourist psychology such as the work of Watson (1913) who did not even consider that thinking took part in the brain, but was simply the restatement of muscular acts (Leahey 1987, p.303) whilst being very much concerned that behaviour should be predictable (Leahey 1987, p.204). So the digital world of objects and behaviours is operationalised and routinised, whereas the internal world of the individual is ignored and pathologised.

This neglect of individual internality is a very subversive, reactionary change in educational philosophy that has, until now, considered the mind, or at least the human subject, to be a relevant and causal component of learning. Indeed, it is such a break that CBET cannot be considered to be a philosophy of learning at all. It is also (tautologically) a break with theories of learning that consider different qualia of human experience, of the procedures of analysis, synthesis and conclusion rather than digital outputs. As Dewey (1997) suggests, it is the 'quality of experience' (p.27) and the continuity of experience (pp.34–37) that are the most important aspects of education. It does not matter if the subjects of CBET can pass the Turing test. CBET assumes an exopedagogy where the object of learning is a virtual zombie, and learning is attributable to the presence of a person (the assessed) with no mental processes being necessary. Indeed, if exopedagogy is to be used metaphorically there are relationships between CBET and Watson's (1913) statement of behaviourist psychology which makes no distinction between human and animal in terms of the rejection of mind and the acceptance of behaviourism. As Leahey (1987, p.302) considers 'Watson urged psychologists not to anthropomorphize about human beings' and considered that human mental processes were as relevant to psychologists as those of a rat: that is, completely irrelevant (see Watson 1913, p.303). Therefore it is irrelevant whether the subject is human or not, and CBET makes the tacit assumption of an absence of internality, against an Enlightenment understanding of what is meant by a human.

In conclusion, the bare minimal core of CBET, is that it involves '[o]bservable digital changes in an assessor's perceptions of behaviours, attributable to (or correlated with) the presence of notionally human subject'. This is usually based on a minimum criteria of observing the performance of the digital change at least (in the majority of cases, at most) once 'the fact that we know exactly what someone who has been assessed can do (or at least has once been able to do' (Wolf 1995, p.21). This is fundamentally different to other conceptions of learning. Firstly, other theories of learning (nearly all theories of learning) are not digital (they are analog), and deal with gradations. Grades are the perfect example of this or assessment procedures where there is some differentiation between outcomes. Secondly, other theories of learning (all theories of learning other than raw stimulus – response behaviourism, and even that makes an assumption concerning some physiological mechanisms) consider that learning is attributable to some internal characteristic of that person (usually a named characteristic) or groups of people, rather than as the mere presence of a person. It is not as if CBET even treats the person as a black box, where there is no need to know what goes on in the inside; rather it ignores notions of personhood or embodiment. Thirdly, other theories of learning are concerned with causality – that the person's actions in carrying out an action are important – CBET is concerned only with correlation.

It is possible that competence itself could even replace notions of personhood and internality through the concept of meta-competences. If there is an explicit concept of the person, or of mind, in CBET it is meta-competence which is competence outside the bounds of tested situations, pushed beyond the boundaries of competence. According to Hyland, meta-competence is

> shrouded in conceptual fuzziness and equivocation...the introduction of new conceptions such as core and generic competences has not helped matters much in this respect. If there is a sense in which the notion of generic competence may be described as logical nonsense, then meta-competence is a prime candidate for this label.... (Hyland 1994, p.26)

Meta-competence is 'logical nonsense' as it refers to a competence (behaviour) not located within individual personhood that controls other competence (behaviours). Fitting with our basic but final definition of competence, a meta-competence would be an *observable digital change*

in an assessor's perceptions of behaviours, attributable to the presence of non-human subject that controls other observable digital changes in an assessor's perceptions of behaviours, attributable to the presence of non-human subject. This nesting seems potentially infinite (could one have meta-meta-competences, for example, or meta-meta-meta-competences?), which is indicative of a similar sort of problem that one meets in defining a controlling element of mind.

This notion of meta-competence seems to imply some kind of 'behavioural brain', a notion of brain or mind as pure competence that can control other types of competence. It is some kind of conception of a meta-competent (non-human) being. Actually, what is being grasped at in the notion of meta-competence is an idea of mind, or at least some kind of internality, which is responsible for behaviour and competence (and other things such as cognition and affect). However, rather than admit that the competence game is up, CBET clings to a metaphor of competence of an increasingly abstract kind. This produces an alien form of mind, or brain, an exopedagogy that has become an exopsychology, even an exophysiology in supplanting the idea of human mind and brain functioning. Thinking about what a behavioural brain or, even more abstract, a competence brain (or mind) would look like is a task more for the humanities than the sciences. Such a mind would be made up of actions that could control other actions but have no mental cause. It might be continually in motion, with recursive actions (meta-competences) leading to final actions (competences) that were evidenced through observation. Such a mind would be like a spinning top, or a clockwork watch, continually in motion and producing other effects (the spinning of the top producing a coloured pattern, the mechanism of the watch producing the movement of the hands) but it could have no initial mental cause. There are questions as to the extent to which such a mechanism would be a mind, or brain, at all, as it appears to have no consciousness or reflexive action even being unable to reflect upon its initial causes or current situation (which would be opposed to the ways in which meta-competences are considered in CBET). In terms of evidencing such a mind, this need only be done once by an external observer who would determine the existence of the meta-competence once and for all time. Determining the origin of such meta-competences would not be possible without recourse to another meta-competence cluster, otherwise the issue of other minds would have to be introduced. To carry the alien analogy to its final conclusion, one

could (plausibly) imagine an evolutionary sequence that created a brainless and mindless mechanism (perhaps an organic form of clockwork) that could produce copies of itself. This would be the perfect example of meta-competence at work, with the competences of each clockwork device being assessed through a regime of CBET. Of course, the analogy does not quite work out as clockwork devices produce analog rather than digital signals, so it would have to be the spontaneous evolution of digital devices but the point is much the same. In short, meta-competences are logical nonsense, but only if one clings to the post-enlightenment notion of the human subject. Meta-competences make perfect sense for the exopedagogic clock-like beings that have been described in this fantasy. They would also make sense if we expected that humans are analogous to these subjects. Although this point would seem to be laboured, it is actually not as different to the 'Blind Watchmaker' thesis described in evolutionary theory, although even this does not eschew the concept of mind.

As has been shown, the one area where CBET is most useful is when dealing with exopedagogic subjects that are not human. If there is no internality, and subjects are pure behaviour with 'behavioural brains', then it could be a most useful way for such subjects to evidence that they have the ability to perform certain digital tasks. For the rest of us, who can for the time being consider ourselves to be human there are problems. Barnett (1994), referring to NVQs, but with applications to CBET considers that

> there is a conceptual thinness in its conception of the character of human being. What we are being given is an impoverished form of human action in which individuals are caused to perform against external standards. This is a conception of human being in which power is denied to individuals: no longer are they to be seen as the authors of their own actions and even thinking. It is a conception that sees human beings as mere performers rather than reflective actors. This is not so much a philosophy of technicized reason as technicized performance. It is a philosophy devoid of enlightened and critical (and self-critical) reason. (Barnett 1994, p.77)

Barnett summarises accurately the primary problem with CBET. Rather than consider its utility, or the ways in which it might be valid or reliable in different organisational contexts, he considers the ways in which it denies humanity. However, he hangs on somewhat to the notion that the human is still a viable entity when considering CBET. He talks about the

'conceptual thinness' of the human being within the theory, but what actually remains is nothing. There is no conception of the human being at all. Humanity is completely absent from CBET to be replaced with a highly alien exopedagogic subject. The situation gets worse, if that were possible, when one introduces the supposedly humanising conception of meta-competence. Rather than make the subject seem more than human, the notion of the behavioural brain is even more alien to us making the subject seem very different from ourselves. Barnett also reminds us of the violence of CBET, the ways in which it takes power from individuals, reducing them to mere puppets with no mental capacities, mere subjects with no critical (or otherwise) mental capacities at all.

If this seems extreme then it is not meant to be a personal attack on advocates of CBET. There is no question that they consider that their form of education is built on respect for learners and even a more progressive view of the subject similar to the de-schoolers. In particular, Sornson (2016) looks at CBET as a humanising tendency that will free pupils and students from the tyranny of poor teachers and introduce them to a more civilised, context independent, form of education. CBET can sound appetising to educators who are advocates of social justice as it can remove the tyranny of grading and classroom routines from students who would otherwise be at their mercy.

It is not that such advocates are wrong, and it is not exactly that their assumptions are wrong (although their assumptions certainly do not help). Rather their assumptions fuel a set of practices that ultimately eliminate the concept of human learning and humans, individually and collectively and for that reason they are an existential threat. To be absolutely clear, and to delineate the boundaries of what we are discussing, this is not a genocidal existential threat. CBET practices do not deprive someone of their life, but they do, alongside other processes, strip them of their humanity in terms of learning. It is not the argument of this book that CBET won't lead people to earn more, appear happier and to find a job more quickly, or at a macro level to increase economic growth and help societies to become more stable. It could do all of those things, which might be worthy in themselves. Rather, CBET makes us less than human, *in fact not human at all*, and that is why it is a threat. In order to understand that, we firstly need to understand what is meant by existential threat which is the subject of the next chapter.

References

Avis, James. 2015. "Beyond Competence, Thinking Through the Changes: Economy, Work and Neo-liberalism". Paper presented at 9th International Conference on Researching Work & Learning, School of the Arts, Singapore, December 9–11.

Barnett, Ronald. 1994. *The limits of competence: Knowledge, higher education, and society*. Buckingham: Society for Research into Higher Education & Open University Press.

Barrick, R.Kirby. 2017. "Competence-based Education in the United States." In *Competence-based vocational and professional education bridging the worlds of work and education*, edited by Martin Mulder, 255–272. Switzerland: Springer Verlag.

Bhopal, Kalwant, and Patrick Alan Danaher. 2013. *Identity and pedagogy in higher education: International comparisons*. London: Bloomsbury Academic.

Burke, John. 1989. "The Introduction of NVQs." In *Competency based education and training*, edited by John Burke, 109–131. London: Falmer Press.

Debling, Graham. 1989. "The Employment Department /Agency Standards Programme and NVQs: Implications for Education." In *Competency based education and training*, edited by John Burke, 68–83. London: Falmer Press.

Dewey, John. 1997. *Experience and education*. New York: Simon & Schuster.

Eraut, Michael. 1989. "Initial Teacher Training and the NVQ Model." In *Competency based education and training*, edited by John Burke, 152–163. London: Falmer Press.

Erickson, Paul, Judy Klein, Lorraine Daston, Lemov Rebecca, Thomas Sturm, and Michaell Gordin. 2013. *How reason almost lost its mind: The strange case of cold war rationality*. Chicago: University of Chicago Press.

Geoff, Stanton. 1989. "Curriculum Implications." In *Competency based education and training*, edited by John Burke, 84–90. London: Falmer Press.

Haffenden, Ian, and Allan Brown. 1989. "Towards the Implementation of Competence Based Criteria in Colleges of FE." In *Competency based education and training*, edited by John Burke, 118–151. London: Falmer Press.

Hartman, Andrew. 2008. *Education and the Cold War: The battle for the American school*. New York: Palgrave Macmillan.

Hyland, Terry. 1994. *Competence, education and NVQs: Dissenting perspectives*. London: Cassell.

Jessup, Gilbert. 1989. "The Emerging Model of Vocational Education and Training." In *Competency based education and training*, edited by John Burke, 56–67. London: Falmer Press.

Lashley, Karl. 1923. "The behavioristic interpretation of consciousness. I." *Psychological Review* 30(4):237–272.

Leahey, Thomas Hard. 1987. *A history of psychology: Main currents in psychological thought*. Englewood Cliffs, NJ: Prentice-Hall.

Le Deist, Françoise. 2017. "The Competence Development Agenda in France." In *Competence-based vocational and professional education bridging the worlds of work and education*, edited by Martin Mulder, 361–380. Switzerland: Springer Verlag.

Lewis, Tyson E, and Richard V. Kahn. 2010. *Education out of bounds: Reimagining cultural studies for a posthuman age*. New York: Palgrave Macmillan.

Lum, Gerard. 1999. "Where's the Competence in Competence-based Education and Training?" *Journal of the Philosophy of Education* 33(3):403–418.

Mansfield, Bob. 1989. "Competence and Standards." In *Competency based education and training*, edited by John Burke, 23–33. London: Falmer Press.

Mitchell, Lindsay. 1989. "The Definition of Standards and their Assessment." In *Competency based education and training*, edited by John Burke, 47–55 & 56–67. London: Falmer Press.

Mulder, Martin. 2017a. *Competence-based vocational and professional education bridging the worlds of work and education*. Switzerland: Springer Verlag.

Mulder, Martin. 2017b. "Competence Theory and Research: A Synthesis." In *Competence-based vocational and professional education bridging the worlds of work and education*, edited by Martin Mulder, 1071–1193. Switzerland: Springer Verlag.

Oates, Tim. 1989. "Emerging Issues: The Response of HE to Competency Based Approaches." In *Competency based education and training*, edited by John Burke, 164–173. London: Falmer Press.

Parnes, Herbert. 1962. *Forecasting manpower needs for economic and social development*. Paris: O.E.C.D.

Ronchetti, Marco. 2017. "Competence-based Education in the Italian Context: State of Affairs and Overcoming Difficulties." In *Competence-based vocational and professional education bridging the worlds of work and education*, edited by Martin Mulder, 407–427. Switzerland: Springer Verlag.

Shackleton, Jenny. 1989. "An Achievement-led College." In *Competency based education and training*, edited by John Burke, 91–96. London: Falmer Press.

Smithers, Alan. 1993. *All our futures: Britain's education revolution*. London: Channel Four Television.

Snaza, Nathan, Peter Appelbaum, Siân Bayne, Dennis Carlson, Marla Morris, Nikki Rotas, Jennifer Sandlin, Jason Wallin, and John Weaver. 2014. "Toward a Posthumanist Education." *Journal of Curriculum Theorizing* 30(2):39–55.

Sornson, Robert. 2016. *Over-tested and under-prepared: Using competency based learning to transform our schools*. New York, NY: Routledge.

Stokes, Peter. 2017. "NVQs and Approaches to Competence in the UK: Contexts, Issues and Prospects." In *Competence-based vocational and professional education bridging the worlds of work and education*, edited by Martin Mulder, 297–315. Switzerland: Springer Verlag.

Tuxworth, Eric. 1989. "Competence Based Education and Training: Background and Origins." In *Competency based education and training*, edited by Burke. John, 9–22. London: Falmer Press.

Voorhees, Robert. 2001. "Competency-Based Learning Models: A Necessary Future." *New Directions for Institutional Research* 100:5–13.

Watson, John B. 1913. "Psychology as the behaviorist views it." *Psychological Review* 20:2.

Weber, Susanne, and Frank. Achtenhagen. 2017. "Competence Domains and Vocational-Professional Education in Germany." In *Competence-based vocational and professional education bridging the worlds of work and education*, edited by Martin Mulder, 337–359. Switzerland: Springer Verlag.

Wolf, Alison. 1989. "Can Competence and Knowledge Mix?" In *Competency based education and training*, edited by John Burke, 34–46. London: Falmer Press.

Wolf, Alison. 1995. *Competence-based assessment*. Buckingham: Open University Press.

Rethinking Existential Threats and Education

Abstract Human existence is valuable due to agency and experience, of which education is a part. Theories of existential threat do not consider what is meant by human existence and existentialist ideas are used to critique contemporary understandings of existential threat. Three critical humanisms: Marxism, critical race theory/black existentialism and transhumanism are considered to argue that there may be forms of existential threat that leave humanity seemingly intact as a species, but threaten existence nonetheless.

Keywords Existential threat · Marxism · Transhumanism · Existentialism · Education

INTRODUCTION: SHOULD EDUCATION GIVE UP ON HUMAN EXISTENCE?

It is easy to let unhappiness get the better of us and believe that life is sometimes not worth living. Behind this statement is both a question and a statement concerning the value of life. If we are serious about this investigation then we need to ask as Camus (2005) did whether life is in fact worth living or whether we should give up on it. Why carry on if life is absurd and there is no external purpose for it? As educators we also need to ask at least whether education makes life better or worse and even whether education enhances or is a threat to human existence. It seems strange to

even consider this question as education is, in most cases, considered to be of value to people in terms of opening new horizons, finding a job or engaging in dialogue with other humans. It enhances human activity rather than negates it. We must also consider, though, that for many people education is one of the unhappiest and depressing times of their life where they have to struggle with boredom, social control and mental (and even physical) violence and punishment. It is mainly academics, especially in education departments, who consider that education is a wholly good thing. Most people look back at their education with a mixture of indifference, humour and hatred. There is obviously a difference between not enjoying education and it being a threat to the very existence of personhood and in this chapter I am not concerned particularly with whether people enjoy education (or not), rather if it is a threat to their existence, and to the existence of humanity more generally. Things that make us happy may, in any case, kill us.

Contemporary education is largely premised on ideas of futurity. Often, and particularly in Western societies, education is for the purpose of some kind of future event. Whether that is employment related (in some societies this, or at least employability, seems to be the only purpose of education) or based on future social or cultural contribution, the emphasis is on what is going to happen to the individual rather than acceptance of their current situation. Sometimes education may be conducted for a cultural or societal motive, such as the continuation of a particular civilisation. Even if we consider that education is an end in itself, with no purpose for future employability, or social and cultural goals, this still means it may have some kind of benefit for the individual in the future in terms of contemplative activity. Education, even if not *for* anything in particular is nearly always premised on some kind of future.

Of course, in being future orientated, there is the possibility that education brings with it the possibility of misery and brooding reflection. The awareness that one is exploited, that life has no purpose or that we die alone may come with education. However, that does not mean that it is better not to know. The Danish philosopher, Kierkegaard (1992) (who is known for a combination of sourness and cynicism in his writing) asks whether it is better to know about one's misery. In *Either/Or* he asks 'Who is the unhappiest one?' He considers an apocryphal grave marked with the words 'The unhappiest one' that is located somewhere in England (as far as we know this grave, or one like it, was probably a fantasy of Kierkegaard's created purely for the effect of his story). When

the grave is dug up it is found to be empty and a competition is held to find the actual unhappiest one, the person who should fill that grave. Like a perverse beauty contest, a search is held amongst citizens to find out who is the unhappiest person. A woman who is unhappy in love is brought forward but she is found not to be the unhappiest person. Various unfortunates are brought forward but only one is truly the unhappiest. That is the one who remembers, the one who is never present in himself, but always dwelling on the past. Memory gives the capacity to be unhappy. There is, though, a coda to the story, in that *at least* this person remembers. He is unhappy, but he still has the capacity for memory, for conscious thought. He knows that he is unhappy by the virtue of human experience, its qualia. Even in unhappiness, it is worthwhile to remember something rather than to be an absence. Personhood, being concerned with the continuity of memory, is valuable.

Kierkegaard's question may seem to be a non-trivial place to start to examine whether education should give up on human existence. It seems to suggest that education, in considering things other than the present (the past, the future) may make us unhappy, although it is better that than nothing. However, there are forms of education, pedagogy and public pedagogy which are concerned with advocating collective or individual death. We obviously find these views abhorrent as our education system is concerned with life affirming and continuing activities. Cults and cult-like groups such as the Islamic State, for example, have a millenarian conception of the purpose of education and training. They are focussed not on individual advancement, achievement or futurity, but on apocalyptic visions of the future. These may include, in the short term, the goal of creating an expanding authoritarian Caliphate but this is not the ultimate purpose of this group. The final goal is ultimately not earthly but concerned with the slavish following of certain religious texts with the aim ultimately being an afterlife. Suicide bombings, shootings and mass casualties make perfect sense given such formal and informal education which is not concerned with the future existence of humanity, but rather its (so-called) spiritual life. Similarly, various suicide websites and forums online promote the extinction of individual life through a variety of gruesome, inhumane and (not always) quick methods. Such forms of education, or pedagogy, seem to be so far removed from our own conceptions of education which promote the possibility of futurity and individual development that we might not even recognise them as such. This does not mean, though, that we have largely got it right.

To start a chapter on education and existential threat by considering whether education should give up on human existence may seem to be a strange and nihilistic place to begin. This seems like a trivial and highly defensible position to begin with, but it is actually surprisingly difficult to defend in practice. It is only in *contemporary* education systems that we are concerned with individuals and their futurity. Past, and still currently existing, education systems deny individual existence and are concerned with afterlife rather than current life. These are rival positions that are non-trivial.

Even though we may balk at apocalyptic forms of education that focus on suicide and the destruction of human life there are some contemporary philosophers who consider that human existence is not a terribly good thing and that, moving far beyond this, that apocalyptic endings for humanity are not always and everywhere a bad thing. Controversially, but seemingly rationally, Benatar (2006) considers that for each and every individual human who exists, and would ever would exist in the future, coming into existence is always an harm and so that an existential threat would, with certain qualifiers, be a positive outcome for humanity. This implies that education, with an emphasis on futurity and purpose for the continuity of future generations, is worthless (and probably would be better directed in terms of the eugenics of decreasing the birth rate to zero). The sooner that humanity is destroyed completely, irrevocably and painlessly by some apocalyptic incident the better:

> the state of human extinction itself is not bad. It would be better, all things being equal, if human extinction happened earlier rather than later. (Benatar 2006, p.13)

The argument can, allegedly, be extended to all sentient beings (Benatar 2006, p.2). This position is obviously provocative, to say the least, but it should be taken seriously as the argument that Benatar makes is not trivial and, on first impression, philosophically convincing. In order to arrive at this position, where existential threat is a positive force, he argues that suffering is a common feature of human life and that all lives involve some suffering, if not a great deal of suffering. The use of the term 'suffering' here is obviously subjective and some people may consider that, although bad things have happened to them during their lives, this did not count as 'suffering'. Analysing what Benatar means by this term reveals that his criteria for suffering is far lower than the one we might set for

ourselves. It includes even slight amounts of pain, regret and sadness. Even if one were to live the happiest of lives and then tread on a pin the moment before death one would (in Benatar's language) have suffered. Benatar therefore considers that there are many bad things that can happen to a person which could count as that person having suffered. He argues that people tend to underestimate how bad life is, and how much suffering individual lives involve although this is not relevant for Benatar's argument. Rather, if a person never existed they would not have suffered, which could be thought to be a good thing. Not coming into existence means that they would have avoided that pain. On the other hand, they would never have experienced anything good, such as pleasure, joy or happiness. However, this is not a loss to them as a non-existent person cannot experience regret or any states associated with loss. It is not that a person is better off dead once existence starts, but as soon as existence begins they will have suffered. Benatar argues that:

> Although the good things in life make it go better than it would otherwise have gone, one could not have been deprived by their absence if one had not existed. Those who never existed cannot be deprived. However, by coming into existence one does suffer some serious harms that could not have benefited one had one not come into existence. (Benatar 2006, p.1)

Benatar makes it clear that his argument is not about benefiting the never existent (Benatar 2006, p.4) but rather that 'coming into existence is always bad for those who come into existence . . . we can say of the existent that existence is bad for them' (Benatar 2006, p.4). Hence once the boundary of coming into existence has been crossed, every human suffers. Education will make no difference to this contention. Even if someone experiences a positive learning experience for most of their life a mere second of displeasure or 'bad' experience affirms that they were better off never existing. If they exist, they can experience suffering which they did not know prior to this. This is negative for them. However, prior to this existence they did not experience pleasure but this was not negative for them in their non-existent state as non-existent beings cannot be deprived. The only way to avoid 'a great deal of bad' (Benatar 2006, p.5) is 'to ensure that a possible person never becomes an actual person' (Benatar 2006, p.5). As we shall see below, this argument would seem to imply that if we could guarantee that a person, from birth to death, would experience only good experiences (including in terms of their education) then this

would guarantee then their life would be worthwhile living and it would be positive that they should come into existence.

There are a number of rhetorical flourishes in Benatar's argument. As we have seen, Benatar has a low threshold for what he considers to be suffering. Stubbing one's toe is part of suffering as is the pain of third-degree burns. What he means by suffering can range from a minor, fleeting, inconvenience to the greatest, lifelong agony. These two things are not necessarily equivalent except that by suffering, Benatar means 'bad things' – in utilitarian terms the experience of negative utility. This does not invalidate his argument, but the issue of memory and reappraisal of incidents is of importance. For example, one may experience the pain of a loss of a relationship at a certain age, but on reflection consider that relationship with happiness. Ending the existence of a person because they will experience a bad thing at some point in their life becomes more problematic when that bad thing is reappraised to be a good thing, or even forgotten, at a later point in that person's life. In terms of education, we can perhaps say that although we did not enjoy elements of our education, we can say that it has been a positive force within our lives. For Benatar this is not enough, and even one iota of a bad experience would make living not worthwhile.

The flaw in Benatar's argument, aside from whether we can ascribe moral status to non-existent people, is that he does not prize existence as a good in itself, independent of pleasure (good) and pain (bad). He also does not consider whether there is anything *uniquely* beneficial about the existence of any given present individual, although even if this were the case he could still justifiably claim (using the metrics he does) that the existent individual would be worse off when compared to a situation where he did not exist. It is possible, in limited cases, to conceive of existence without some idea of experience in the first place as one could exist in a coma. The mind is also capable of generating its own experiences even when deprived of external stimulation (as in dreams or in a sensory deprivation tank). However, in most cases those who exist also can experience things. Not all of these things will be bad *or* good in themselves. For example, while I am writing this I am experiencing sunlight coming in from the window but I have not experienced this as good, or pleasurable, until this moment when I reflect on it in which case it seems good. Existence, experience and reflection are (by definition) not properties of non-existent persons. Being existent or non-existent is not just about experiencing good or bad but about experience, reflection and agency.

Of course, some things that I experience will be bad but many things that I experience neither have good or bad qualities in themselves. Hence the fact that I can experience, reflect and have agency is qualitatively different to experiences of good or bad. I can also reflect upon what I previously considered to be unequivocally bad experiences and consider that in retrospect I have learnt something from these experiences or that were they not so bad then I may have made worse decisions in the future. For example, through my education (formal and informal) I have learned that all living things eventually die, that there is no external meaning to life and that the economic model that we have will most likely destroy the planet. These are far from happy thoughts, but I cannot say that they empty as the ability to reason is a quality in itself. Hence a number of things, including education, give rise to thoughts and feelings which cannot be assessed in a metric as universally good or bad in themselves and may be re-evaluated at some point in the future. It is a cliché, but all humans go through learning experiences that cumulatively can lead to more (or less) good or bad experiences in the future. This argument does not fundamentally critique Benatar's argument as much as nuance it. It considers that there are third-order factors (not good or bad), that exist along a completely different axis. What these factors have in common is that they are contingent on human experience. Without existence a human would not have these thoughts and feelings which may neither be 'good' or 'bad'. Therefore there might be things independent of sensations of pleasure or pain that make human existence worthwhile for that person. We can think of many examples of these things from the field of education. To tackle difficult questions, such as seemingly intractable mathematical problems, can be worthwhile, and part of the satisfaction (pleasure even) is to resolve the problem that may have given us feelings of frustration earlier. Doubt is a state that can also cause us to experience negative feelings that may also be worthwhile.

This argument, that there are features of human existence which do not involve pleasure or pain but may make existence worthwhile becomes clearer if we think about what might be another inference that we might draw from Benatar's analysis. Unimaginatively for a philosopher who is prepared to argue for the genocide of humanity on the basis of a philosophical paradox, Benatar does not consider what might be considered to be utopian or dystopian future human and post-human possibilities, perhaps because he considers these to be unrealistic. They are fanciful, but although these possibilities might be unrealistic, they open up questions

about the nature of human experience and agency and lead us to question some of Benatar's conclusions. If we could guarantee from birth that all individuals might experience only pleasure and no pain, for example, then Benatar's logic would seem to imply that there would be no need for humans to be denied existence. Of course, a lot hinges on the term guarantee. For Benatar it might be that even the chance that a human might be born who might experience a moment of pain would be too much to take this risk. However, even in Benatar's extinction scenario there are no guarantees that his plan to deny humanity a future would succeed. This may mean that humans who are not extinguished could experience greater pain than they would have otherwise as they would be more isolated in the universe. In fact, for Benatar to fully exercise his plan would require the whole universe to be extinguished to guarantee that there would be no future sentient being who could experience any pain. It is an empirical question whether it is more likely that the whole universe could be effectively destroyed (guaranteeing that there could be no future sentient being who could experience pain) or whether it is possible that a scenario could be created where from the moment of awareness a sentient being could experience only pleasure.

Although there is no empirical evidence to back up whether either scenario is likely, there has been more thought given to the second scenario which has some plausibility. It is possible to consider a situation in which the brain is stimulated in such a way as to give feelings of constant pleasure, for example. It is also possible (as indicated through films such as *The Matrix*) to consider the possibilities of simulation, or uploaded consciousness, to produce a situation in which humans would only experience pleasurable sensations. Both of these could potentially lead to a situation in which humans would experience no pain and only pleasure. It seems that the first case (of direct neural stimulation) would be more likely to produce constant pleasure as in the second case (simulation, uploaded consciousness) the possibility of negative thought ('I wonder if these consistently pleasurable sensations are really pleasurable') would be more likely. Scientists are already considering situations in which either of these possibilities might come to pass. In Bostrom (2014) it is considered that artificial intelligence (AI) might become extremely powerful exceedingly quickly so that humanity would find itself impossible to control it. Very quickly it would be able to achieve superintelligence by bootstrapping itself to exponential levels of intelligence. In one scenario, it is considered that a future AI may be subject to 'perverse instantiation' (Bostrom 2014,

p.120) whereby it finds some way of 'satisfying the criteria of its final goal that violates the intentions of the programmers who defined the goal' (Bostrom 2014, p.120). For example, in response to the command to make us smile, the super powerful AI could act to paralyse our facial muscles into smiles, or stimulate the part of the cortex that makes us smile. In response to a request to make us happy (very relevant in this current case), the AI could implant electrodes into the pleasure centres of our brains so that we would only experience pleasure. Bostrom (2014) considers that it is incredibly difficult to avoid perverse instantiation. Nevertheless, humans in such a dystopian world would experience pure pleasure, and goodness for the rest of their lives although they would not possess autonomy, agency or reflect on their situation. Now, whether Benatar considers reflection and agency to be good or not is a moot point, but it is clear to see through this example that one can conceive of circumstances where a life of zero suffering would not include these things. In passing, it is also of interest that Bostrom (2014) considers that the minds of AI would be sufficiently 'alien' to make an understanding and appreciation of human intentions extremely difficult. Whether the existence of an AI (or any other sentient creature) can be weighed on the basis of a human metric such as bad or good experience on coming into existence is not an issue that Benatar considers. Moreover, the possible existence of an AI that can only experience good things (or cannot experience pleasure or pain at all) would be problematic for Benatar's theory. The notion of future human capabilities, technologies and social arrangements also makes it possible to conceive of a future in which suffering does not exist. Such a world is not impossible, for post-human philosophers, and would weaken Benatar's ideas about the suffering of future humans (who would, in an inversion of Benatar's 'iceberg of suffering' benefit, rather than suffer, from being born into a future generation as they would sit at the end of a long chain of current human technological innovators). Whether such a world without suffering would be desirable to humans is a question of politics or political philosophy. The fact that such questions give us pause may make us consider the extent to which suffering is always a bad thing. As well as experiencing pleasure and suffering, humans also make meaning, come to terms with death and existence and experience different qualities which cannot be reduced to pleasure and pain. We must also consider that humanity produces collective, civilisational endeavours that require life to continue. Benatar does not take into account collective civilisational projects (such as the

cumulative knowledge of civilisations and the benefit of this at a collective level given the possibility of other sentient beings in the universe). He takes an individual view and assumes it is possible to undertake moral judgements in the name of non-existent beings (albeit those who have the potential to be brought into existence). He does not allow existent beings such as potential parents, siblings or other members of humanity to make that judgement for them. This is because the utility of these beings is not relevant as it would be the potentially existent being (not them) who would experience some suffering in their life. However, a non-existent being as a moral agent is not able to choose between their own existence or not but choices are made in all areas of life where decisions are made for beings who cannot intervene in those choices. In such cases, it is not just the future utility of the being alone that is taken into consideration.

Human existence is therefore valuable because it brings with it human *experience* of the world with autonomy, awareness and reflection to which we could add those collective and civilisational endeavours of humanity that have a benefit at an aggregate level greater than that of the individual. Learning and education, at least up until now, are of primary importance to the human endeavour of experience and reflection. As a minimum, we would expect all educational philosophies to consider that the existence of an aware, thinking, human is the minimum for pedagogical activity to take place. In most, the goal is human development and autonomy, even though this may be painful and involve struggles. At the centre of most pedagogical and andragogical theories is the human – even in behaviourism the human organism, physiologically, is important. Indeed, this is an educational value that is at the centre of all philosophies of education except *CBET* as we have seen in the previous chapter.

EXISTENTIAL THREAT

The argument that a form of education, in this case CBET is an existential threat depends upon our definition of this concept and, in part, a critique of the concept that hinges on both the meaning of *existential* and *threat* as it relates to threats to humanity. I will start by considering the emerging literature on existential threat, before turning to the meaning of existential and the conception of humanity that is employed in these definitions.

If we were to believe the media, the threat of death is never far away. Whether it is through a terrorist attack, pandemic or a technological catastrophe, there is always a crisis to instil both fear and morbid

fascination. From the Islamic State, Ebola and even the re-emergence of the spectre of nuclear war, there are a range of possible catastrophes which threaten to extinguish us all. There is little support in our culture for positions such as Benatar's, as discussed above. We do not welcome these threats for ourselves because they would result in no suffering for lives who have not yet come into existence.

When it comes to a truly existential threat, one that would remove Homo sapiens in its entirety from the universe with no chance of rebooting human DNA, the imagination of policymakers and academics has frequently lagged behind that of science fiction. Both academia and policy have shown some timidity in defining the boundaries of possible threats. In the United Kingdom (UK), for example, the Cabinet Office produces a National Risk Register (Cabinet Office 2015) that outlines the threats that the country faces based on 'reasonable worst case' scenarios. These are ranked in terms of plausibility and impact on a scale from one to five. The register ranks risks from the plausible and low-impact (major transport accidents, cyberattacks on infrastructure) to implausible, high-impact events (pandemic influenza). There are also some risks the UK government considers to be high impact, but not plausible enough to merit inclusion (such as an asteroid strike, major earthquakes or an outbreak of plant disease). Of these low plausibility events, only one of these – an asteroid strike – has the potential to truly threaten all life in the UK. Even at the outliers, existential threat is not really considered by government perhaps as, if it were to occur, we would question the necessity of government itself. It is, of course, unfair to criticise the National Risk Register for not considering existential risks as these are not likely on any current policy horizon, nor are they workable in terms of creating solutions for these risks. However, it does illustrate the necessary limits of the policy framework in this area. This is not just true of policy, as many academic risk frameworks also veer away from considering existential risk. Work on risk society, or securitisation, does not often consider ultimate, existential, devastation. These are threats that are often outside of the policy, or academic, sphere. There are, of course, multiple theological works on the apocalypse as it relates to the future devastation of earth and humanity. Many of these are redemptive and promise some kind of utopia for believers but there is no such redemption in the secular view.

In this secular realm, only science fiction writers seem to have a handle on existential threat. The science fiction writer Iain Banks (1997) considers the possibility of 'out of context problems' (OCPs) which

emerge as if from nowhere, and beyond our current scientific under-standing. A change in the universal physical constants that regulate the laws of physics, alien invasion and micro black holes are potentially possible existential threats, but there is no current scientific under-standing of these. Although Banks adopts a science fiction framing of OCPs it is possible to consider that unpredictable consequences of human actions can also be considered to be OCPs. A genetically engineered pandemic, species or even a new set of human social arrangements can be considered to be an OCP. In terms of social arrangements, it is possible to consider that Marx's (1996a) depiction of capital as a self-perpetuating, expanding, system of value creation to be a potential threat to the eco-systems that sustain humanity.

Some academics openly flirt with science fiction, using its tropes to adopt a more adventurous framing of risk, boundary and threat. The Centre for the Study of Existential Risk is one such institute that creatively considers threats to humanity. One leading academic at the centre, Nick Bostrom (2012) has a two axis scaling of threat. On one scale is the extent of the threat, which can be personal, local, global, trans-generational, pan-generational and cosmic. On the other scale is the degree of pain caused by the threat which ranges from the imper-ceptible, endurable and crushing to the hellish. Threats can hence be located according to both extent and degree of pain. The loss of one hair, for example, would be personal and imperceptible, nuclear war would be global and crushing and the final heat death of the universe would be cosmic and crushing. What distinguishes existential threats from other threats is the extremities of scale, which includes pan-gen-erational (the end of the human species for all time), cosmic (the end of the known universe with no chance of rebooting humanity) and crushing or hellish (an asteroid impact wiping out the earth). The distinction between crushing and hellish also takes into account quali-tative differences in the period of existential threat up to the elimina-tion of humanity. Even though existential threat sounds bad, it is a matter of opinion whether it would be better (or worse) to be exter-minated through a crushing existential threat (the slow death of humanity through the depletion of the ozone layer) than a hellish one (global genocide through a thermonuclear war).

Within this literature on existential threat it is possible to distinguish between several types of threat, not just terms of cause, but also in terms of category.

First, there is a category of major threats that are not really existential threats at all because they are actually not threats to the existence of humanity as a species. These can be considered to be global catastrophic risks (Bostrom and Ćirković 2008) rather than existential threats. A global nuclear war, for example, would most likely not destroy every living human being on the planet. Despite the grim possibilities for survival, there would be better opportunities for subsistence outside of the main targeted countries and humanity would probably continue in pockets in a miserable fashion. The question would be whether human civilisation would ever mange to recover and whether it could ever restore itself to previous levels of technological and social progress. Pandemics are of the same order where, barring some genetically engineered virus that could destroy all of humanity, there is the possibility of recovery and even natural resistance. Virulent viruses tend to burn themselves out in any case and so would be unlikely to spread throughout the globe. The Islamic State are also considered to be an existential threat but it is very unlikely that they would achieve their apocalyptic goals, and even if they were to succeed in world domination then humanity would continue in a technologically backward and repressed fashion (although this clearly falls into the 'hellish' category). Each of these threats is not truly existential and may be considered to be 'existential-lite' kinds of risk, or as global catastrophic risks (Bostrom and Ćirković 2008). However, they do raise questions about what it means to survive as a *human species* and in that sense they may be considered to be existential. In a common sense understanding of such threats we might say that survival in such circumstances would be so feral and barbaric so as to make us 'less than human'. We might also say that in such environments that we would be 'better off dead' or the 'dead are the lucky ones' implying that life was not worth living and that it is simply not worth being human. Although there is no real critique of what it means to be human in such phrases, they provide a suggestion that humanity, and conceptions of what it means to be human, are subjective and not just based on the presence of biological humans or the continuity of the human genome.

Secondly, there are truly existential threats where humanity is completely and permanently excised from the universe. To use Bostrom's scaling of trans-generational, pan-generational and cosmic there would seem to be a distinction between the time scale and (potential) recoverability here. A trans-generational threat (impacting upon all future human generations), such as the gradual depletion of the ozone layer, may result in a

slow existential threat with stagnating economies and a gradual fading of life expectancy leading to an eventual ending of the human species over many generations. A pan-generational threat, on the other hand may only impact upon the current generation hence to be truly existential the rate of extinction of humanity would be rapid or this is an existential-lite threat. There is little to choose between these scenarios, but each may be thought to be preferable to a cosmic threat, such as the heat-death of the universe, where there would be no way back for humanity, life or indeed anything material. Whatever the time scale, or generations through which a threat takes effect, the distinguishing feature of existential threats is that they are trans-generational and terminal (Bostrom and Ćirković 2008). Existential threats do not always originate from natural phenomena, but may occur as a result of technological change. In particular, Bostrom (2014) considers that artificial intelligence might become an existential threat in the future in two ways. He argues that there is very little that scientists could do to restrain an emergent artificial intelligence from escaping from the laboratory into the real word. An artificial intelligence that approached, or exceeded, human levels of intelligence could quickly employ its own intelligence to escape its virtual environment and accelerate its knowledge further. It is not possible to trap such an AI in a box, or trap, no matter how technologically advanced, as it could use its own capabilities to escape. As such an AI would become very rapidly more able and capable than any human it would be unlikely that human ingenuity could contain it. Such an intelligence would be not ethically motivated by the concerns of humans. Even if it were possible to write ethical principles into the 'code' of such a system it is possible that the machine would stick to the hard logic of the statement without considering the sentiment of it. For example, an ethical requirement that the aim of the superintelligence should be to make people happy, or to maximise human happiness (as discussed above), might be for it to drill into people's brains and fill them with endorphin-like chemicals or experiences. From Benatar's (2006) perspective this might be a dream scenario but as we have seen (above) autonomy, reflection and agency, as well as human civilisation, are different orders of qualia that would be lost in this situation.

Whatever the cause, these threats (global catastrophic and existential) implicitly define existential (or existential-lite in the case of global catastrophic threat) as referring to the survival of the species Homo sapiens. However, it could be argued that there is a third type of threat, one which could potentially change the nature of humanity in some way without

necessarily removing human bodies from the earth, or ending the human genome. For example, threats which reduced humans to the state of mere animals, without consciousness, or where human existence was only allowed in order to serve alien power. This would mean that humans lost the power of independent thought, or any agency over their actions. There could also be threats which meant a new species was created, perhaps merging with artificial intelligences, or forming humans into cybernetic organisms (as we shall see later, some would consider these to be opportunities rather than threats). These could be threats which mean that the experience of humans is so far from what we would judge to be human, that it could no longer be referred to as a human existence. The study of existential threat has in fact been mostly concerned with either empirical (what is the nature of the threat, how likely is it and how can it be mitigated) or (to a lesser extent recently) spiritual (is there anything after an existential threat in terms of the existence of a human spirit and/ or an afterlife) matters. Rarely have scholars considering existential threat addressed the implications of existentialism as a philosophy which explicitly asks what existence is, and in which circumstances it could be said to have been excised.

Existentialism and Existential Threats

The literature on existential threat, surprisingly, makes little or no reference to philosophers of existentialism who should be considered to be key in understanding this term. This is important to the analysis, as the nature of human existence is (tautologically) central to the issue of existential threat. Existentialism is an important departure from contemporary notions of existential threat, as discussed in the previous section, as it raises the possibility of a threat to existence in a sense that does not necessarily means that bodies and minds are negated. Although the argument in this book does not take an explicitly existentialist perspective and critique (although one certainly could consider an existentialist critique of CBET) such an approach is important as it presents a possible disassociation between existence and living experience.

We can understand this in a common sense way if we think about times in our life when it has seemed as though we are not really living, or even when we feel as though we do not exist. Routine work, drudgery, sleepless nights, depression and abusing drugs or alcohol can make us feel as though we are not really engaging with life, or living a life that is 'going

through the motions'. Although we may still feel that we are in some sense a person during those times there may be moments when we forget that we are existent, human beings. Being so tired that our brains seem to be fogged and cloudy, taking part in mechanised labour so that our actions seem to be like clockwork and even the sense that we have split from our bodies due to lack of sleep or stimulation are manifestations of this. Existentialism is concerned with these fundamental questions of existence, what it means to *be* in the world.

Philosophers of existentialism start with existence, the experience of being in the world and with others, as a starting point. Humanity is not just an 'it' made up of bodies 'lying around somewhere' (Macquarrie 1984, p.62) but existence, it is argued, is a unique propensity of each existent which cannot be substituted with another existent experience or reduced to 'rationally manipulable ideas' (Macquarrie 1984, p.72). According to existentialists, existence proceeds essence and cannot be reduced to it. Such an existential analysis is 'not even concerned with man as an empirical instance of existence but rather with existence as such in its basic structure' (Macquarrie 1984, p.28). Already this moves us from an understanding of existential threat which is concerned with the physical and empirical nature of the human, to one which considers existence to be a fundamental part of human experience, unique to each individual and not resolvable in terms of a physical and bodily entity. A 'body lying around', or the concept of Homo sapiens as a biological species says nothing about the qualitative nature of human experience and existence. Rather, the knowledge that comes from existence involves an immersive interaction with the world, and a phenomenological interpretation of it. An existential threat could therefore be a threat to the existent as understood physically and biologically but could also a threat to the existent which would maintain 'bodies' in various poses and actions as well as a civilisation in empirical, working order. Acts of consumption, for example, are often called 'mindless'. The term 'smartphone zombies' has been used to describe the locked-in nature of people who are using their phones constantly, not engaging with the world around them to such an extent that they ignore other people or even traffic. The state of compulsive machine gambling has also been described as putting people into a trance-like, animalistic, state.

This observation should at least give us pause when considering existential threat. Such threats may have already come to pass and we are living with them in the here and now. These existential threats may

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arise from ourselves, not as anthropogenic possibilities (nuclear war, catastrophic climate change, runaway AI although all of those things are possible) but as living inauthentic lives through the colonisation of human life through capital, the complete colonisation of our subjectivity by the media, or the iron cage of quantification through obedience to technologies of the self. These things would threaten human existence (as existential crisis) without threatening the 'meat' of our bodies and minds.

This can be seen more clearly if we consider the ways in which existentialist philosophers consider the separation between existence and the way in which a human body is constructed through external perspectives including the sciences and social sciences. The human body that can be mapped scientifically is not the same as concrete existence for existentialists, particularly Kierkegaard:

> Kierkegaard, the first of the modern existentialists, is a writer for whom 'existence' does mean primarily the unique concrete bring of the individual person. The existent that is the contingency, the particular that which refuses to fit into a system controlled by rational thought. (Macquarrie 1984, p.66)

In terms of existential threat, this means that the particularity of existence is not something that can be weighted in a rational scientific framework, or subject to a cost-benefit analysis. Life is an 'absolute singularity' (Cerbone 2015, p.17) that cannot be apportioned into parts. Existence is valuable in a unique, unspecifiable way to every existent, an 'emergent, ecstatic, transcendent, elusiveness' (Macquarrie 1984, p.70). This specificity of existence does not mean that humans are separate from the world that they exist in ('there is no human existent apart from the world in which he exists' Macquarrie 1984, p.81) and neither are humans separate from their bodies akin to a machine that they animate (Macquarrie 1984, p.94). However, existentialist philosophers also consider that it is possible to become separated from the body and to live an unauthentic existence.

> It is possible to become alienated from the body to 'have' the body almost as an exterior possession that we use in various ways. (Macquarrie 1984, p.96)

It should not be a surprise that for us to 'have' the body as an 'exterior possession' seems similar to the way in which CBET considers

competences as non-bodily, non-mental and non-spiritual possessions. We 'have' competences without them being part of ourselves.

This valuing of existence as a singularity is very different to the way in which existential threat is defined by the Centre for the Study of Existential Risk and Bostrom (2014) who define it, by making a claim that it is exterior bodies that are threatened, without considering the uniqueness of human existence. Existential threat, defined in this way, is not seen as a threat to existence in terms of a life lived freely and authentically. However, for existentialists there is a risk of a life that does not realise freedom and authenticity. Although the circumstances in which this might occur seem to be (for now) abstract and rather idealistic, it can be seen that the possibility exists that existence may be compromised independently of what happens to the subject's body. For existentialist philosophers one simply cannot define existence as a scientifically objective concept, existence is a unique singularity which can be compromised in ways (which will be examined below) that would be different to those which present a global existential threat as defined by the Centre for the Study of Existential Risk. Existentialist philosophers would see, for example, situations whereby the individual had no control over their choices (perhaps in a Fascist state) or where one made completely inauthentic choices as being an existential threat. These do not sound as dramatic as those threats which arise from nuclear war, or cosmic perils, but they are existential threats none the less. Existentialists have a very different perspective on human life and death, and the nature of existence, when compared to contemporary theorists on existential threat. This difference is so stark as to make us consider the insidious nature of existential threats, as well as their overt forms.

Three Existential Threats

From the above discussion it can be seen that when we think about existential threats we should always consider what it means to be human, and what exactly we mean by existential. This does not mean we should set a lower threshold for existential threat but that we should be mindful of what is meant by existence when considering these threats. In this section I consider three theorisations of existential threat that have not been considered in the conventional scientific work on such threats. These theories might be described as critical humanisms as they do not take the existence or continuity of human life for granted. Firstly, I examine the

Marxist view of existential threat. This includes conventional existential threats (environmental destruction or extinction caused through imperialist world war) which may be caused through capital accumulation. It also includes threats to humanity from capitalisation and colonisation by capital. Secondly, I consider threats to identity and being as discussed in critical race theory (CRT) and black existentialism, which include not only genocidal and eugenic tendencies but also negation of self. Thirdly, I look at a transhumanist conceptions of the ending of humanity as being transcendent and positive, an existential 'treat' rather than an existential threat. There are potentially other existential threats of these types that I could have considered, but they are included here as they are all existential threats that are hastened in some way through CBET, as we shall see in the next chapter.

Marxism and Existential Threat

Theories of political economy, at their bleakest, have considered that humanity can come across an existential threat that might lead to its demise. Both Malthus and Ricardo considered that either through the population outstripping the resources available to it, or through the tendency of the rate of rent (in the case of Ricardo) to fall, that humanity may face an untimely demise. These theorists of political economy were, to some extent, influential in the work of Marx in Capital Volume 1 (Marx 1996a), who based his analysis (in part) on a critique of their work. In the nineteenth and twentieth century, it has been Marxist thought (with its origins in terms of crisis theory in Marx 1996b) that has been the dominant secular theorisation of existential threat to humanity. Outside of scientific prophesies of the end of the world through resource depletion or cosmic disaster, and theological ideas of the apocalypse, Marxist theories have emphasised the political-economic routes of existential threat which have dominated much of twentieth-century thought, and whole economic systems and ideologies.

There are two senses in which Marxism considers existential threat. Firstly, through precipitating, either directly or indirectly, crisis that are not possible to mitigate against given the current parameters of the economic system. Although Marx did not have a fully realised theory of crisis, much of Volume 2 of Capital (Marx 1996b) concerns capital accumulation and crisis of underconsumption and overproduction (as well as hinting at the potential for crisis in the financial system).

Secondly, and more insidiously, by destroying the human subject completely through its domination by capital.

The first form of crisis, with associated resource depletion and (potentially) war has the potential to be the type of existential threat as recognised by Bostrom and Ćirković (2008) which could destroy all of human life. The second type of threat may not (from the perspective of a neoliberal society) seem like a threat at all. Although the meaning of the full capitalisation of humanity is disputed (would such a thing ever be possible, given human resistance and consciousness), a society where people exist only to work and consume with no opportunity of resistance and in a state of complete alienation from the products of their labour is by no means impossible. Potentially, in the terms through which Marx defines the concept of humanity, this is an existential threat, although libertarians may consider this to be a form of utopia.

To summarise how these threats arise, Marxism considers that capitalism is a system that is contradictory in that it inevitably produces two economic classes – capitalists and workers – that becomes increasingly polarised over time. These two classes exist in a dialectic relation with each other, the existence of the capitalist is impossible without the worker and vice versa. Capitalists increasingly own the means of production and workers increasingly own nothing other than their bodies and minds, which can be used to work for the capitalists. Specifically, they sell their labour power to the capitalist for a period of time producing value and surplus value. This antagonistic relation produces inevitable conflict between these two classes and leads to crisis of overproduction, under-consumption and of the falling rate of profit. For many Marxists, capitalism will eventually come to a dramatic, and possibly violent, end through a revolution that will lead to a communist society where production is collective and pursued for ends other than profit. It is an open question whether this will occur before capitalism precipitates an existential threat which will destroy humanity. This could either occur through the processes of planetary destruction, which were discussed above, and/or the complete domination of labour by capital which presents a different (but insidiously horrific) form of existential threat.

According to Blacker (2013) who summarises the theories of capitalism and catastrophic crisis, or what can be called existential threat, from a Marxist perspective, with particular reference to education, there are three main routes through which capitalism might lead to the end of humanity.

The first of these is the tendency of the rate of profit to fall (TRPF). This is a long-standing contention in Marxist economics which considers that as capitalist production becomes technologically intensive, capitalists are engaged in a race to acquire the latest technology. Technology causes the socially necessary labour time to produce a commodity to fall. If one considers the production of a car, for example, the use of robotics, production lines and computer-aided design, means that the labour time it takes to produce a car declines. As labour is a cost for capitalists, this means that the capitalist employing technology in the most efficient fashion (from a private point of view) increases their profits. In turn, the minimum time to produce a car (the socially necessary labour time) declines over time. Other capitalists will see the profits made by the technologically efficient capitalist and invest in similar technology (or go out of business, or be taken over, or merged with the technologically leading firm). Now all cars in the industry are produced at the socially necessary labour time. The most technologically efficient method of production has become the 'normal' in that industry. Workers are laid off and the labourers still in the industry produce more cars in each hour that they are employed. The cycle continues again with a new, lower socially necessary labour time.

This leads to a race for technology amongst capitalists whereby those who cannot invest in this new technology are driven out of production. Overall profits are pushed down (although the surviving firms may experience a rise in profit but this will not be enough to compensate for the overall fall in profits in the industry) and workers are increasingly displaced from their jobs causing a fall in consumption. Although the theory is a tendency, rather than a law, in extreme scenarios, it may lead to a fall in profits that is so substantial that economic production ceases and the world falls into barbarism, potentially destroying the human species through famine and lack of basic resources. Critics of Marxism argue that the counter-acting tendencies to the law (including the opening up of new markets or areas of production) mean that potentially profits could continue to grow indefinitely. Blacker (2013) argues that there is no way in which such counter-acting tendencies could indefinitely compensate for the long-run tendency for profits to fall. Eventually there will be no new markets, or areas of production, on earth to exploit.

The second of these is ecological threat. Capitalism is a system which is ultimately driven by profit. Capitalists may have aims other than profit but in the long run profitable capitals will displace less profitable ones through a process of competition. Profit, and accumulation of

capital, drive capitalism towards greater levels of expansion and control over nature. As the environment is a collective good, which is often used as if it were costless by capitalists, an unrestrained expansion of capitalist production will eventually cause environmental crisis. The environment itself may be marketised allowing capitalists to commodify previously free assets such as water and even air itself. Despite calls for environmental responsibility (and capitalists may claim that they are following a 'green' agenda), they will ultimately oppose regulations which prevent them from profitability. It is not that capitalists are not ecologically minded, but rather that the system of capitalist production requires them to peruse profits unrelentingly or face financial ruin. Therefore, the environment may be unwittingly sacrificed beyond the point to which it could support human life. This leads to a paradox in which a system that is ruthlessly logical concerning the ways in which resources are deployed (for maximum profit) ultimately ends up destroying all natural resources which sustain it.

The third of these is war. Lenin famously called imperialism the 'highest form of capitalism'. Capitalism exists not in a pure, theoretical, form where individual corporations pursue their own interests, but rather within a system of nation states. As profits fall, and corporations seek new profit opportunities, the resources of the nation states are deployed to maintain the profits of corporations. This can lead to wars between countries, and potentially a world war, that could lead to global devastation through nuclear, biological or chemical means. Again, this is an unforeseen consequence of capitalism. It is not that capitalists intend that their activities would lead to actions by nation states that could create a world war, but that this is a possibility.

Although the mechanisms above have been radically simplified, and there is much debate in Marxism concerning the importance of each (and their probability, as well as their degree of inevitability) they do indicate the ways in which Marxists propose that crisis in capitalism may lead to existential threat. In itself, capitalism therefore represents a concrete existential threat to humanity. Alongside these threats (complete failure of the economic system, environmental disaster, total war) there are the more insidious Marxist conceptual threats of exploitation and alienation. These can also be considered to be existential threats in that they are ultimately challenges to being and activity of humans. However, within the everyday workings of capitalism, and not just when it is in crisis, there is a more intractable existential threat to humanity. This is what Rikowski (2002) refers to as the *capitalisation of humanity*.

In order to understand what is meant by the capitalisation of humanity, we need to consider that capital is not a thing. It is production for the creation of surplus value, which the capitalist realises as profit, the movement and conversion of value through the capitalist system. This represents the driving and motivating force of capitalism. Capital has the capacity for infinite expansion through the desire to pursue profits. It seeks out new markets and profit making opportunities, opening up previously non-marketised areas to production. The privatisation of previously government-owned resources (such as health, or education services), the marketisation of previously non-marketised goods and services (such as water, and even rain water) and the opening up of new markets to capitalist exploitation (such as the displacement of indigenous peoples so that agricultural or industrial production can take place) are part of this ever-expanding universe of capital. Alongside this expansion is an intensification of capitalist production. Capitalist production requires that workers work longer hours as part of more intensive work days with increased use of technological aids, to maintain and increase profits. Ultimately, this effort to always increase profits becomes increasingly difficult as the use of technology pushes down overall profits (whilst increasing individual profits for the surviving firms) until the current rate of profit becomes 'normal' and firms race to increase technology in production. This produces the falling rate of profit as I have considered earlier. According to Rikowski, the ever-expanding universe of capital may eventually mean that everything is capitalised, even humanity and human subjectivity as capitalism has an inexorable thirst for labour power in order to create value and hence profits. Although Rikowski considers that there is always the hope that an element of human subjectivity and resistance may remain, the endgame of capitalism could well be the end of humanity under complete capitalist subjugation. As I shall consider in the next chapter, education and training is part of labour power production. CBET represents a mode of labour power production that is radically different from previous modes of labour power production and it represents a way in which the efficiency of labour power creation is (allegedly) increased by removing pedagogy and internality. Basically, CBET potentially allows the production of labour power unmediated by concerns of the subject or process. It therefore bypasses the need to deal with the educated or educator in the acquisition of the capacities required by capitalists.

Hence Marxism considers not only an external existential threat to humanity through the limitless nature of capitalist expansion running up against the physical or social limits to growth head on, but also an internal

existential threat whereby human subjectivity itself, or at least the capacity to think outside of the terms of capitalism, is nullified. This is, perhaps, the counter-point to libertarian, fantasies of transhumanism.

Existential Threat in CRT and Black Existentialism

After Marxism, the second existential threat is one of negation and elimination of the subject and here I shall consider conceptions of this from CRT and black existentialism.

Various contemporary educational theories consider the equity and social justice implications of different forms of education with regard to race. The work of Sleeter and Grant (2007) makes the ethical and pragmatic case for multicultural social justice as a key value of education. This has been followed in contemporary work that attempts to consider the various dimensions of social justice. For example, Bhopal and Shain (2014), consider the twin axis of recognition and redistribution as goals of education. Other work examines the role of social distancing from the 'Other' by white students as a dynamic process in which Black, Asian and Minority Ethnic (BAME) and working-class students are disadvantaged. In many ways denial of social justice in terms of lack of resources, recognition or access to social space can be considered to be a form of dehumanisation. However, whilst work on social justice and education might consider the lack of humanity in these systems of oppression (applying concepts such as 'bare life', Lewis 2006; or 'othering' Lebowitz 2016) they do not consider directly existential threats. Threats to humanity on the basis of difference may arise from totalitarianism as much as through war and threats to the environment. The various genocides which have taken place throughout human history have often had a racial, or ethnic, cleansing purpose to them. They have been eugenic threats that are based upon spurious ideas of genetic and moral superiority. Writers on race from Fanon to Du Bois have considered that the threat posed to racial groups may be existential and that there is a short step from psychic, to real extermination. The negation of individuals through economic, social and psychological processes allows for their physical extermination. Du Bois (2014) deals explicitly with existential threat in his short story 'The Comet' where humanity is almost wiped out by a threat from space, leaving only a small number of people to carry on. As one of the survivors of the comet is an African American, this leads Du Bois to consider the state of race relations in the USA. The implication of

the story is that the existential threat of the comet (which allows the African American character to live in a world entirely free of racial prejudice) allows release from the existential threat of eugenic attitudes. Building on Du Bois, in other work (Preston 2012), I have considered the ways in which preparation for threats, including existential threats such as pandemics and nuclear war, has been in many ways eugenic in that it prioritises the survival of some more than others based upon criteria which include race and ethnicity (Preston 2012). Preparing for disasters and emergencies often prioritises the interests of white people above those of other ethnic minorities. One reason for this is tacit intentionality which means that policymakers and practitioners do not consider human diversity in considering how people may respond to disaster. Policy is often biased as policymakers expect that people will be 'like me' which (at least in the UK and USA) means they will often be white, middle-class, educated, English-speaking men. In planning for threats, there will be various ways in which such biases are included. For example, they may not consider publishing advice in a number of languages, the resources necessary to survive a disaster, the mobility of people and the attitudes of emergency responders. This is unwitting prejudice in that by not considering diversity they are actually making it less likely for BAME people to survive, or protect themselves against, the disaster.

Although these biases may lead to a gradient in terms of survival by different groups in a disaster, they do not appear to relate to existential threat. However, existential threat can be interpreted in a different way in perspectives from critical whiteness studies and CRT.

In critical whiteness studies, whiteness is taken to be not a racial identity, but rather a system of power and oppression (Leonardo 2009). Whiteness was created as an identity not simply as a mode of social classification but as a way of exploiting and controlling others. There are obviously periods in history where this was objectively the case. During slavery in the USA, for example, whiteness was used as a means to distinguish between those people who had the right to own property (whites) and those who could not (Africans), Moreover, whiteness was the obverse of property in that only Africans could 'be' assets or property. Enslaved Africans were therefore treated as property and did not have access to the basic rights which would constitute humanity in American society (such as access to education, the right to own property, the right to decide who they should have relationships with). There are obviously parallels between this experience and holocaust when Jewish people (and

other individuals) were dehumanised by the Nazis and denied access to basic resources. During imperialism there was also a period whereby other races were categorised to be less worthy than white people and this provided the justification for colonial control, exploitation and often extermination.

Advocates of whiteness studies go further than this and consider that whiteness is not merely a past system of oppression, but a continuing system of white supremacy (Leonardo 2009). The economy and society is comprised in such a way that white people will usually benefit, and BAME people will usually not. This is not only an economic and social system but also a psychological system whereby existence as a full human depends upon one's racial categorisation. This idea has its roots in the work of Fanon (1986) who wrote that black identity was shaped by the white gaze, but also contemporary writers also consider the notion of whiteness as 'death', a categorisation that is rooted in past oppression and extermination, whose remnants exist to this day. This perspective on race and existence leads us to consider what is meant by life, and whether we are not currently living to our full potential (as Marxists would also propose) when existential threat is actually amongst us. For Marxists this would be the expansion of the 'social universe' of capitalism that flows between and through us, 'capitalising humanity'. For critical whiteness studies, this existential threat would be one of whiteness and the negation of existence for a racially classified group of people.

In order to make this idea of constant existential threat more tangible (although the term is not used) critical race theorists use what are known as 'counter-stories' to consider how racial dynamics might develop in the future, or to highlight inequalities in the present (Delgado 1996). Derrick Bell (1992) who is considered to be the founder of CRT, uses a much cited counter-story 'The Space Traders' to consider the ways in which black people's lives are classed as being not equal to those of whites in the USA. In 'The Space Traders' a race of aliens offer the USA a trade: all of America's black citizens in return for unlimited, environmentally friendly, energy and technology. After some debate, the American people vote on the proposal and decide to give up all of America's black citizens to the space traders in return for the futuristic technical goods. Of course, Bell is proposing an analogy between slavery in the past and the present situation of black people in the USA, and perhaps even suggesting that such a thing might happen again. On another level, though, there is also the idea that the existence of black people in America is categorised at a different level of metaphysical worth to that of

white people. That life could be traded so cheaply, even plausibly (in the thought experiment) makes us pause for thought in terms of how we classify existential threat.

Although the relationship between CRT and black existentialism may not always seem obvious we can see that there is a nihilistic streak in the work of Bell (1992) with regard to the prospects for survival. In addition, the drawing on the work of Fanon by authors who use CRT as part of their work which shows the perpetual violence encountered by people of colour in education as well as the enduring influence of Du Bois on CRT (Delgado and Stefancic 2001) shows the close connection between the two theories. What links CRT and black existentialism is a basic concern with existence and the meaning of human life under constant threat that can be thought to underpin any concern with social justice. From CRT and black existentialism, we therefore see that existential threat is one of negation through economic, social and political systems and there are degrees of graduation between these forms of existential threats and actual genocide or extermination. The links between these points and CBET might be considered as obtuse but, as we shall see in the next chapter, systems of education can play a role in forms of negation. Obviously, there are social justice implications in the way in which people are treated in terms of race and ethnicity in education. The 'triaging' by race and ethnicity of access to education courses, the ways in which certain groups are rationed access to educational routes and the fragility of links between education and the labour market for BAME groups are all part of marginalisation, in which vocational education plays a large part. As part of this process, and probably not coincidentally, these groups are also more likely to find themselves in vocational, CBET courses. However, social justice is not the whole story, and there is a more profound form of equality associated with the right to existence. It is this that CBET threatens through the reduction of the subject to a digital organism as I will show in the next chapter.

Transhumanism

The third category of existential threat I will deal with here, transhumanist philosophies, are relaxed concerning existential threat. Transhumanist philosophies consider that existential threat is inevitable but that this brings about the potential for transcendence and ingenuity. Although existential threat implies the end of humanity, this does not necessarily mean the end of being. According to transhumanists, there are possibilities

of evolution (becoming a new species separate from humans), adaption (uploading consciousness into another form of matter, such as a computer) or transcendence (becoming a new type of organism entirely, perhaps a pure form of energy or a composite human mind) that would jettison humanity but preserve consciousness.

Transhumanists are not cowed by existential threats, even including the second law of thermodynamics which implies that the heat death of the universe is inevitable. Rather, transhumanist philosophies run counter to essentialist humanisms and conceptions of existential threat as inevitable, emphasising the potentially unlimited ways in which humanity can take control of its own destiny. This means that even if humanity is destroyed (and such a threat might compel humanity to produce a creative solution), it is possible that a new species of human (perhaps an uploaded form of consciousness, a new genetically modified line or a completely new type of synthetic biological/machine entity) could continue. In order to emphasise the transcendent nature of this philosophy, transhumanism is also known as H+/h+ with the '+' signifying an addition to human capabilities. Whilst some understandings of transhumanism are essentialising, including that it holds onto some reified ideas about race (Preston 2012), it also has potentially liberating features as a project when humanity is faced by existential threat. There are four reasons for this.

Firstly, transhumanism does not see any kind of threat to humanity as inevitable. It does not retreat into faith-based arguments for accepting one's fate, nor determinist arguments concerning environmental depletion or even mortality. Human limits, even if they are biological or physical, are not absolute. For transhumanists, the solar system and the stars that lie beyond have many resources to be extracted. The universe provides resources and potentially new habitats for humanity. Even if the transhumanist project were to run up against seemingly absolute laws of engineering or physics, new discoveries and technologies (perhaps even the creation of new universes) could be created to support existence. Transhumanism is optimistic regarding existential threat. Hansell et al. (2011) consider that this optimistic world view is potentially 'boundless'. Transhumanism does not consider social, or even scientific, limits to growth and physical laws are *inconvenient*, rather than absolute (Preston 2012). The implication is that existential threat is simply a problem that can be dealt with through the correct application of technical or social solutions. These usually involve market processes and the emergent properties arising from uncoordinated market mechanisms.

Secondly, transhumanism does not consider that the end of humanity would be the end of the line in terms of our consciousness. There are no limits to the ways in which humanity can develop and this even includes evolving into new, or hybrid, species. Moravec (1988) considers, for example, that human individuals might no longer exist in the future. Instead, we might choose to upload our consciousness into what he refers to as 'bush robots' who can use various sensors of multiple types, alongside multiple forms of mobility to interact with the world. Other transhumanists consider that we may even move beyond the notion of individual minds to cast ourselves into multiple forms of consciousness that may be more effective at solving seemingly intractable problems. Perhaps we may even upload our conscious minds into computers so that we can continue our days as a technologically sophisticated 'brain in a jar'. Whichever the mode of being, life in some form (or at least consciousness of some kind) could continue. Transhumanists admit that these types of life (or artificial life) or consciousness might be dramatically different from our current understanding of these concepts. For example, a collective mind, made up of individual consciousness would have very different sensations of existence to an unconnected set of individual minds.

Thirdly, transhumanism might be considered to be an example of a pragmatic philosophy of existential threat. Transhumanism does not choose to hide from existential threat, but rather embraces it as a key feature of human life. Rather than existential angst, transhumanists choose to accept the fact of their own death, the end of the species and even the end of the universe as a whole as 'hard problems' that make the perusal of scientific solutions necessary and urgent. Sartre may have considered this to be the ultimate example of Bad Faith in that transhumanists may be in denial concerning their own deaths, but this pragmatism makes transhumanism a living philosophical project that demands a practical solution and the application of the social and physical sciences to this problem.

Fourthly, transhumanism is a theory that does not consider fatalism as a possible response to existential threat. It considers that the impact of death on a human is unknown, but that there is zero scientific evidence for an afterlife, or a metaphysical being. Therefore, there is good reason to live one's life in a purposive way, without recourse to a higher power. Whilst there is the possibility of life, then this must be aggressively pursued, and transhumanists are at the forefront in demanding technologies of life extension and enhancement in the personal realm. This also applies to the wider human species, and despite their libertarian leanings, there is a

strong streak of mutual altruism and humanity in transhumanist culture concerning the ways in which poverty can be alleviated (free markets and the unmitigated and unregulated application of science). Transhumanists also look beyond the nation state to examine global and human futures. In fact, they do not show any allegiance to nation states and rather support individual action within a framework of extensive property rights (Preston 2012). There is, then, a post-humanist ethic within transhumanism.

Although transhumanism is at the fringes of social and philosophical thought, there is no doubt that it has a reflexive relationship with both popular culture and science. Transhumanism is a common trope in science fiction, and there are strong links between the sorts of utopian science fiction that tended to proliferate in the 1950s and 1960s and this movement. These tended to posit a future where humanity was forced, due to some environmental crisis or atomic war, to leave the earth to pursue life elsewhere. There are also strong links between transhumanism and the ways in which we approach technology as a force which is necessary for future human development, and livelihood. Technologies which help us to quantitatively measure our physical performance and health, for example, appeared far-fetched at one point but are now an integral part of our everyday lives. Similarly, our interconnectedness through social media, and the ways in which we accept the publication of details of our lives and thoughts, are also allied to transhumanist ideas concerning the future of the human organism. We cannot simply dismiss transhumanism as a fringe philosophy, of no relevance to the topic of existential threat. Indeed, transhumanist work has mobilised thinking in the area of existential threat more generally, and provides a solution to some of the seemingly intractable problems involved in theories of existential threat.

In terms of CBET, as we shall see in the following chapter, there are transhumanist tendencies within this theory of learning. CBET implies transcendence of a human subject and the end of human learning to be replaced by a transhumanist, exopedagogical one but this is far from the self-directed, positive outcome of transhumanist thought.

Conclusion

What links these theories (Marxism, CRT/black existentialism, transhumanism) in terms of their application to existential threat is a critical perspective on humanism, and what human extinction actually means. None of these theories is incompatible with humanism per se. Existentialism is known both

for its humanist and anti-humanist leanings, Marxism has been realised in Marxist-Humanist as well as more scientifically socialist forms (and Marx's emphasis on species-being in primitive Communism might be regarded as a form of humanist essentialism) and transhumanists take an optimistic view of human potential. As critical humanisms, they hold in common that humanity is not necessarily concurrent with a biological shell that repeats and reproduces over time. In common with existentialists they consider that existence is not a given, and that the determination of one's life makes one truly human. A life where these is no choice, and no freedom, would be a bare form of existence. For example, transhumanists do not equate biology with destiny, and consider that existence can be separate from the human container in terms of being uploaded into another form or even merged to form a new type of being, Marxists consider that the colonisation of the human and their universe by capital ('dead labour') can represent its own form of death. Therefore a possibility remains that even if humans appear to be alive, well, and inhabiting their own planet as biological entities then it is philosophically possible that the existential threat may have already arrived in terms of lives lived out in non-freedom or in terms of the total domination of capitalism. There is also a further transhumanist possibility that even given that no biological humans remain on earth that this does not mean that an existential threat is synonymous with extinction. Even if there is no visible sign of life, in a distant computer somewhere there may exist many uploaded conscious humans.

In this chapter, then, I have taken a broad view of existential threat, using theories that may be considered to be 'critical humanisms' to extend the notion of what might be meant by existential threat. It therefore seems that many anthropogenic or natural hazards can be an existential threat. Although in terms of anthropogenic threats we normally consider technological constructs such as nuclear weapons or nano-technology any human artefact may be considered such. This includes education systems and pedagogies, if not as existential threats in themselves, as part of a social structure or technology that includes education as such a threat. In the next chapter, I consider CBET as an existential threat.

References

Banks, Iain. 1997. *Excession*. New York: Bantam Books.

Bell, Derrick. 1992. *Faces at the bottom of the well: The permanence of racism*. New York, NY: BasicBooks.

Benatar, David. 2006. *Better never to have been: The harm of coming into existence*. Oxford: Clarendon Press.

Bhopal, Kalwant, and Farzana Shain. 2014. "Educational inclusion: Towards a social justice agenda?" *British Journal of Sociology of Education* 35(5): 645–49.

Blacker, David J. 2013. *The falling rate of learning and the neoliberal endgame*. Winchester, UK: Zero Books.

Bostrom, Nick. 2012. *Global catastrophic risks*. Oxford: Oxford University Press.

Bostrom, Nick. 2014. *Superintelligence: Paths, dangers, strategies*. Oxford, UK: Oxford University Press.

Bostrom, Nick, and Milan M. Ćirković. 2008. *Global catastrophic risks*. Oxford: Oxford University Press.

Cabinet Office. 2015. *National risk register of civil emergencies*. London: H.M.S.O.

Camus, Albert. 2005. *The myth of Sisyphus*. London: Penguin.

Cerbone, David R. 2015. *Existentialism*. London: John Murray Learning.

Delgado, Richard. 1996. *The coming race war? and other apocalyptic tales of America after affirmative action and welfare*. New York: New York University Press.

Delgado, Richard, and Jean Stefancic. 2001. *Critical race theory: An introduction*. New York: New York University Press.

Du Bois, William. E. 2014. *Darkwater: Voices from within the veil*. Mansfield Centre, CT: Martino Publishing.

Fanon, Frantz. 1986. *Black skin, white masks*. London: Pluto.

Hansell, Gregory R., William Grassie, Russell Blackford, Nick Bostrom, and Jean-Pierre Dupuy. 2011. *H±: Transhumanism and its critics*. Philadelphia, PA: Metanexus Institute.

Kierkegaard, Søren. 1992. *Either/or: A fragment of life*. London, UK: Penguin Books.

Lebowitz, Jennie. 2016. Muslim American Youth in the Post 9/11 Public Education System. *American Cultural Studies Capstone Research Papers*. Paper 6.

Leonardo, Zeus. 2009. *Race, whiteness, and education*. New York: Routledge.

Lewis, Tyson E. 2006. "The school as an exceptional space: Rethinking education from the perspective of the biopedagogical." *Educational Theory* 56:159–76.

Macquarrie, John. 1984. *Existentialism*. New York, NY: Penguin.

Marx, Karl. 1996a. *Capital: A critique of political economy volume 1*. (Collected Works, Volume 35) London: Lawrence and Wishart.

Marx, Karl.. 1996b. *Capital: A critique of political economy volume 2*. (Collected Works, Volume 36) London: Lawrence and Wishart.

Moravec, Hans P. 1988. *Mind children: The future of robot and human intelligence*. Cambridge, MA: Harvard University Press.

Preston, John. 2012. *Disaster education: 'race', equity and pedagogy*. Rotterdam: Sense Publishers.

Rikowski, Glenn. 2002. "Education, Capital and the Transhuman." In *Marxism against postmodernism in educational theory*, edited by Dave Hill, Peter McLaren, Mike Cole, and Glenn Rikowski, 111–43. Lanham, MD: Lexington Books.

Sleeter, Christine E, and Carl A. Grant. 2007. *Making choices for multicultural education: Five approaches to race, class, and gender.* Hoboken, NJ: John Wiley & Sons.

CBET and Our Human Future

Abstract Competence-based education and training (CBET) is an existential threat, representing not only the end of human learning and experience, but in terms of redefining humanity. Through a discussion of the possible role of CBET within three critical humanisms: Marxism, critical race theory/black existentialism and transhumanism, it is argued that CBET impoverishes our humanity, leaving us as instruments of value creation, 'caged by competence' to make only digital and pre-determined interactions with the world. CBET makes us transhuman objects who can only be understood through exopedagogical theories of education and this has serious consequences for its application.

Keywords Competence · Capitalism · Negation · Exopedagogy

INTRODUCTION

CBET, as I argued in Chapter 2, can be best seen as a theory of non-learning. It is an exopedagogical theory of acquisition of competence. CBET does not have a theory of internality in stating the mental, physical, spiritual or collective mechanisms through which competences are acquired. Rather, competences are attached to persons through a quasi-judicial process. These competences must be assessed in behavioural terms and can only be digital in that there can be no degree of graduation in a competence statement. Compensatory theories employed alongside

CBET which attempt to consider conceptions of knowledge or mind (meta-competences) create logical impossibilities such as a behavioural mind, knowledge as behaviour or an endlessly recurring competence mind. Although competence has affinities with behavioural theories of learning it is not a learning theory as it does not consider the organism, or the processes through which learning happens. Of course, one can include other theories of learning alongside CBET but any of these is incompatible with a theory of competence based learning if it includes a reference to internality.

There are many models of CBET but this represents the essence of CBET theories. CBET represents a radical break with previous theories of pedagogy and learning (although it is not incompatible with education and training). This alone does not make it a particular threat to humanity. CBET could simply represent a paradigm shift, ushering in a new world of employment, happiness and education unconstrained by concerns of mode and method of teaching. However, in Chapter 3 I considered that, through three critical humanisms (Marxism, black existentialism/critical race theory and transhumanism) the existence of humans, as we understand ourselves, can be compromised (or in the case of transhumans, augmented) by social forces (in the case of Marxism, capitalism, in the case of black existentialism/critical race theory – white supremacy). I will now move to consider the potential role of CBET in Marxist, critical race and transhumanist ways of considering existential threat. In each, CBET can be seen to be an accelerating factor towards existential threat.

I begin by considering Marx's notion of the human in terms of species-being and the role of labour power as a historically specific form of labour in capitalism. I use the work of Rikowski and others to consider how education and training are implicated in the formation of labour power and examine how CBET is conducive to a further qualitative enhancement of human labour power. I do not consider whether CBET leads to greater productivity or innovation, but the way in which it is qualitatively proximate (closer) to Marx's conception of labour power than other forms of education and training. I argue that CBET is a supremely capitalist form of education and training, hastening the transformation of human life into labour power and (in Rikowski's terms) the capitalisation of humanity.

Next I consider, through critical race theory and black existentialism, how some education and training methods have been used as forms of negation of the individual. I show how CBET 'cages' subjects through the

digital features of competence, hence separating them from their bodies and minds in an alienating and consciousness-splitting fashion.

Finally, bringing these theories together through transhumanism I show that CBET creates a radically different conception of the human and learning, but that this is a dystopian (rather than utopian) discourse which creates a monstrous future for humanity. Even by the criteria of transhumanist optimism, CBET represents a retrograde step and a possible out-of-context problem (OCP) for humanity.

Labour Power, CBET and Humanity

In this section I begin with the work of Marx (primarily 1996a, b, c), examining in depth the concept of labour power and education in his own works, and then relatedly in the work of Rikowski. I move to consider the implications of these theories for CBET, which seems to be in many ways a realisation of Marx and Rikowski's conception of the development of labour power, and a frightening stage in the complete subsumption of humans by capital.

The young Marx was both humanistic and romantic when it came to the choice of a career. In one of his first essays on the subject, he comments upon what is important in choosing a job:

> [T]he chief guide which must direct us in the form of our profession is the welfare of mankind and our own perfection. (Marx 1996d, p.8)

In this essay, 'Reflections of a Young Man on the Choice of a Profession' (Marx 1996d), Marx reflects on what is vocationally important. Marx considered choice was important. If chosen wrongly 'it is an act that can destroy his whole life, frustrate his plans and make him unhappy' (Marx 1996d, p.3). This should not be considered lightly, and Marx thought that the act of choosing a profession should take into account individual considerations as well as a collective higher purpose. This liberal idea of choosing a profession is not uncommon today, in that a wider social purpose as well as personal advancement, should be the key considerations (although such factors are not at all captured in university statistics on employability which are purely about jobs and earnings). CBET is not necessarily opposed to higher purposes, although these purposes should be expressed in behavioural terms. What is important about CBET is that, rather than educators, in the main the determination of competences is

provided by employers, employer bodies or consortia of employers and educators. Hence employers take a key role (perhaps the key role) in saying what it is that people should be able to do. One way of looking at this would be in terms of the ways in which capitalist interests and ideologies influence (in extreme cases determine) the education and training system, including CBET. Indeed, Marxist theories of education sometimes assume that the education system is realising the aims of *specific* forms of national capitalism in terms of producing the forms of skill that are required by industry. Admittedly, it is not always possible to consider causal relations between capitalism and from outside appearances little about the UK education system appears to be directly capitalist. Most education is funded by the state, there a plethora of different qualifications none of which makes obvious sense to the capitalist class and most teachers and HE students do not slavishly follow capitalist ideologies. This does not mean, though, that the education system is not becoming increasingly commodified, marketised and privatised.

Although I have no real argument with the position that capitalists are involved in the functions of education, such analysis possibly misses the ways in which labour power formation in the contemporary era (across a number of national systems) only partially realises the ways in which Marx conceived labour power as being formed. In Marx's time, and even today, the ways in which labour power is created as a force within each human and between humans as collective labour power is only partially realised in our current systems of education, training and on-the-job training. However, Marx gave indications in Capital that the development of human labour power was not only a continuous and infinite process (there is no upper limit to its development) but also one which imagined labour power to be qualitatively different as capitalism developed. Rikowski (2002) calls this the capitalisation of humanity, at one level the way in which capital becomes part of the human. CBET can be seen to be a further movement of labour power towards the form considered by Marx in Capital and as part of a furthering of the capitalisation of humanity. This analysis is not a complete and self-contained critique of capitalism, or of the education system within capital, but can be seen to provide part of a larger critique of the expansion of capitalism in creating a social universe of its own, destroying previous forms of human life:

> As capitalist production develops it has a disintegrating, resolvent effect on all older forms of production. . . . (Marx 1996a, p.42)

Marx did not have a concept of existential threat, although it is clear that he saw capitalism as both a revolutionary and a catastrophic social formation for humanity, as considered above. However, he did possess a conception of species being and the idea that humans could be estranged from wider humanity (as species) as well as from each other as individuals through capitalism and its associated estranged labour.

In defining what is meant by the human, Marx considers that

> man is a species being ... because he treats himself as a *universal* and therefore a free being.... In estranging from man (1) nature and (2) himself, his own active functions, his life activity, estranged labour estranges the *species* from man. It changes for him the *life of the species* into an act of individual life. Conscious life activity distinguishes man immediately from animal life activity ... In creating a *world of objects* by his practical activity, in his *work upon* inorganic nature man proves himself a conscious species-being ... The object of labour is, therefore, the *objectification of man's species life* ... In tearing away from man the object of his production, therefore, estranged labour tears from him his species life ... in degrading spontaneous free activity to a means, estranged labour makes man's species-life a means to his physical existence.... Estranged labour thus turns: Man's species being ... into a being alien to him, into a means for his individual existence.... (and) ... the estrangement of man from man. (Marx 1996b, pp.276–277, my italics)

This is not the only part of Marx's work where he considers the meaning of humanity. In effect his whole oeuvre is concerned with the relationship between people and an inhuman form of social production (capitalism). However, it is important in considering the alienation of people both from the natural world and from their own productive powers, mental and physical. The 'objectification of man's species life' seems at face value to apply to the sort of processes that are involved in CBET. The determination of competence by employers, the technical specification of behavioural competences and their judgment by an assessor all appear to be objectifying processes. However, this objectification is not about the application of technical processes and procedures. Capitalism is not just (or even inevitably) a system that simply produces rational and technical procedures for labour control. Although such processes might be necessary to ensure labour discipline to maximise profits (particularly in early forms of capitalism) there are a number of different and distinct ways in which people work, some of which appear to be the opposite of such technical and bureaucratic controls. For example, some companies have

no fixed working hours; others provide free food and others a 'campus'-type environment. These companies are still involved in the exploitation of labour, and are interested in the labour power of their employees, without the need for overt control of the labour process.

Rather than a planet inhabited by humans we face one in which the primary form of existence seems to revolve around commodities (Marx 1996a). The production and circulation of products and services appears to be the main, and expanding, purpose of existence as time progresses. Marx (1996a, p.48) considers that the one thing that all these commodities (the particular form of products of labour in capitalism) have in common is that they are products of labour power. This seems to be a straightforward point in that most things are made by people but this is not exactly what Marx means in distinguishing between concrete and abstract labour. Marx goes beyond this surface nature of the commodity to reveal 'what is common to all, all are reduced to one and the same sort of labour, human labour in the abstract' (Marx 1996a, p.48). Moreover, this is a 'mere congelation of homogenous human labour power' (Marx 1996a, p.48). This does not mean that an idle labourer would produce a commodity of more value than an efficient one as this is determined by the socially necessary labour time to produce a commodity (Marx 1996a, p.49). Marx considers that skilled labour is no different, in character, than unskilled labour, stating that 'Skilled labour counts only as simple labour intensified, or rather as multiplied simple labour, a given quantity of skilled being considered equal to a greater quantity of simple labour' (Marx 1996a, p.54). This is obviously and intentionally an abstraction. There are cases in which 'simple labour' could not produce what 'skilled labour' could. For example, writing a computer program or carving a statue out of marble, are things that it would seem that no quantities of 'simple labour' could produce. However, the intensification of labour is important in this description. Labour is labour. There is no difference between labours in the abstract as employed by the capitalist. What is different is the intensity with which that labour is employed. So the skill of a computer programmer is not in concrete terms akin to a concentration of other types of labour, but in the abstract it is the same. So the forms of labour employed as part of capitalist production all comprise part of the same set. There are no artisanal forms of labour that exist independently of the general pool of those who sell their labour time. In capitalist production, it is necessary that labour is homogenous, not in that people are the same or of equivalent skill (as we have seen above) but that it is established

as a social fact that labour can be freely bought to be used in the production of commodities. This involves a basic kind of equivalence:

> [I]t can satisfy the wants of the individual producer himself, only in so far as the mutual exchangeability of all kinds of useful private labour is an established social fact, and therefore the private useful labour of each producer ranks on an equality with that of all others. The equalisation of the most different kinds of labour can be the result only of an abstraction from their inequalities, or of reducing them to their common denominator, viz, expenditure of human labour or human labour in the abstract. (Marx 1996a, p.84)

Here Marx provides two points as to the development of labour power under capitalism. The first is that it is established as a social fact that private labour can be bought from the labourer. That has become such an established fact of the capitalist system that it is seldom now remarked upon, but on reflection it appears to be controversial, and even absurd. That a human capacity can be bought for a period of time with the extraction of surplus value seems to be strange when compared to the purchase of other commodities (this is the dual character of labour). The second, less remarked upon, is the notion of equivalence of labour powers. That is an 'abstraction from their inequalities' to produce an 'equivalence'. Marx does not consider the social processes that might be involved in producing notions of equivalence between labour powers. At the level of abstraction, the equivalence might simply be that labour powers are employed in the production of commodities. However, it is quite possible that equivalence between labour powers (not in terms of wages, which come later in Marx's analysis) arises through systems of schooling, training, accreditation and assessment which all individuals might be subject to in order to provide some statement as to the equivalence of their labour power. In terms of the production of value, there is no differentiation between different types of labour only in terms of their multiplicative effect with unskilled labour (Marx 1996a, p.199). Elsewhere, Marx remarks that 'The distinction between skilled and unskilled labour rests on pure illusion . . . ' (p.208). In passing, CBET assumes that the assessment of behaviours is a transferable method by which competences can be assessed. There are no occupations for which CBET in some form could not be used. This does not mean that CBET is a natural development from this process of equivalence (and we should be careful about assuming that labour has its own historical trajectory).

In order to sell the commodity of labour, the labourer, 'must have it at his disposal, must be the untrammelled owner of his capacity for labour i.e. of his person . . . He must constantly look upon his labour power as his own property, his *own commodity*' (Marx 1996a, p.178, my italics). To have a commodity of labour 'at his disposal' implies that this commodity can be identified within a person and that it is, indeed, a commodity. This does not necessarily imply a separation from personhood (which is at present, impossible) but it also does not imply that the labourer and /or the capitalist can identify those parts of personhood which are labour power. Of course, it is not necessary that the labour be located in a particular position in personhood, only that it can be associated as the labourers own property.

What all human labour has in common is that it creates value, indeed it is the only source of value. Value is created by 'Human labour power in motion, or human labour, creates value, but it is not itself value. It becomes value only in its congealed state when embodied in the form of some object (a congelation of human labour)' (Marx 1996a, p.61). Human labour, according to Marx is a unique class of commodity that can produce value. From the perspective of capital '[t]he directing motive, the end aim of capitalist production is to extract the greatest possible amount of surplus value and consequently to exploit labour power to the greatest possible extent' (Marx 1996a, p.336). So the world we see of commodities is a veil beyond which there is a hidden world of value. 'Capitalist production is not merely the production of commodities, it is essentially the production of surplus value' (Marx 1996a, p.510). Labour power is not a static capacity of the individual but 'becomes a reality only by its exercise; it sets itself in action only by working' (Marx 1996a, p.181). As work continues 'his labour constantly undergoes a transformation; from being motion, it becomes an object without motion; from being the labourer's working it becomes the thing produced' (Marx 1996a, p.199). This is a process of value transformation. There is a distinction between the labour *process* and the historical *creation of labour power*. 'In the labour process, therefore, man's activity, with the help of the instruments of labour, effects an alteration, designed from the commencement, in the material worked upon' (Marx 1996a, p.190). It is education and training which are involved in the task of the historical creation of labour power. In some ways, education and training is a necessary prerequisite for capitalist production as it is needed to create labour power. In one way it could form an element of what Marx refers to

as the 'instruments of labour' (Marx 1996a, p.190) which 'do not enter into the process but without them it is either impossible for it to take place at all, or possible only to a partial extent. Among instruments that are the result of previous labour and also belong to this class, we find workshops, canals, roads and so forth' (Marx 1996a, p.190).

From the perspective of labour, then, the selling of labour power as a commodity is paramount. Turning to the perspective of the capitalist, who buys labour power to create value and surplus value, there is judgement required in selecting what to do with one's money 'With the keen eye of an expert, he has selected the means of production and the kind of labour power best adapted to his particular trade' (Marx 1996a, p.194). This means making an assessment as to the labourer's ability. From the perspective of the capitalist, anything that increases the expenditure of labour power into the production of commodities will increase their surplus value and hence profit. In Capital Volume 1, Marx (1996a) provides a number of examples of such things including an extension of the working day (Marx 1996a, p.243), the employment of children and the lifting of legal limits to exploitation (Marx 1996a, pp.251–263) and the extension of day and night working in a relay system (Marx 1996a, p.263). All of these things increase the rate of surplus value, but there is also the scope to increase the mass of surplus value through the employment of multiple labourers and the concentration of labour power (Marx 1996a, p.307). Marx therefore considers the concept of the 'single collective working day' (Marx 1996a, p.311) which is the total number of societal workers multiplied by the length of the working day. Capital shows no limits in terms of the ingenuity with which it can increase surplus value and exploit the labourer:

> Capital further develops into a coercive relation, which compels the working class to do more work than the narrow round of its own life-wants prescribes. As a producer of the activity of others, as a pumper-out of surplus labour and exploiter of labour power it surpasses in energy, disregard of bounds, reckless and efficiency, all earlier systems of production based on directly compulsory labour. (Marx 1996a, p.314)

In the section on 'The detail labourer and its implements' Marx considers that it is clear 'that a labourer who all his life performs one and the same simple operation converts his whole body into the automatic, specialised implement of that operation' (Marx 1996a, p.344). This seems to be

simply part of specialisation, but at closer reading 'converts one whole body' seems to imply that the whole of the labourer, during the labour process, is used as a source of value.

By increasing the intensity of the working day, and the employment of technology the capitalist can increase relative surplus value. This can also be effected by increasing the productivity of labour (Marx 1996a, p.324). As the productivity of labour increases this reduces the socially necessary labour time required to produce a commodity. As Rikowski (2011) contends, this socially necessary labour time becomes a universal measure across capitalist society.

As production becomes increasingly collective, new forms of labour exploitation emerge and it is with the co-operation of labour that Marx's wedding of labour power to personhood becomes more difficult to imagine. Labour powers become combined in new and original ways, far beyond the simple multiplication of such powers (Marx 1996a, p.327). As Marx states 'the simultaneous employment of a large number of labourers effects a revolution in the material conditions of the labour process' (Marx 1996a, p.329). In classical political economy, this could be seen to be part of the division of labour, or the application of concrete labour. As Marx puts it 'the mechanical forces exerted by isolated workmen differs from the social force that is developed' (Marx 1996a, p.331). This becomes a collective labour force 'the collective working organism is a form of existence of capital' (Marx 1996a, p.365) 'It converts the labourer into a crippled monstrosity, by forcing his detail dexterity at the expense of a world of productive capabilities and instincts; just as in the States of La Plata they butcher a whole beast for the sake of his hide or tallow' (Marx 1996a, p.365). This makes increasing use of science and one 'cardinal fact of capitalist production...(is the)...Organisation of labour into social labour through cooperation, division of labour and the uniting of labour with the natural sciences' (Marx 1996c, p.265).

Glenn Rikowski has used the works of Marx to develop his ideas concerning the relationship between labour power and education, training and allied processes. With Neary he bases his conception of value is a 'multi-dimensional field of social energy: a social substance with a directional dynamic (expansion) but no social identity' (Neary and Rikowski 2002, p.18). This value is ultimately created by human labour, or more precisely through the exercise of labour power as it is only in this activity that labour is actualised (Rikowski 2011). Education and training are only part of the creation of labour power but labour

powr has no specific location within personhood (Rikowski 2011). This is different to educational philosophy, pedagogy and learning which have sought to consider what changes in a person education can lead to and the mechanisms through which learning occurs. However, there is no necessary relation between any one form of education, learning and pedagogy and the formation of labour power. This is clear when we examine the ways in which Rikowski (2011), building on Marx's theory of labour power considers this 'explosive commodity'. Firstly, Rikowski states that labour power is internal to personhood in a *special sense*. It is not internal to personhood in being a static and locatable bodily or mental process. We cannot quantify labour power as a static capability and refer to one worker having 'greater' or 'lesser' labour power than another for all time as if this were a transhistorical category. Rather labour power is a 'force flowing'. It has meaning only in terms of its ability to create value within the capitalist mode of production. When the employer purchases labour power as a commodity he is unsure of what he will get for his money. There is some ambiguity involved in the transaction (as in all monetary transactions) as the commodity is associated with an embodied human presence.

Labour power is not transhistorical and cannot be associated with a particular mode of labour power enhancement, or education and training outside of capitalism. It is not possible outside of a given historical context to say that one form of education and training is better or worse than another, although there is a view that capitalism will direct the education system towards those forms of education and training that enhance labour power. Labour power enhancement is therefore not associated with a particular mode of education or training. Indeed, it does not need to be associated with education and training at all. For example, the enhancement of labour power could be associated with on the job training, experience or work-based training.

Similarly, labour power enhancement is not associated with any particular philosophical or scientific conception of the human other than assuming that such enhancement is possible and that there may be methodologies for doing so. For the individual capitalist (rather than capitalism as a whole system) the ideal form of labour power enhancement would exist beyond any consideration for the real material forces of production (bodies, minds) and be infinitely malleable and expandable. A labourer that could, given a fixed level of technology, transfer infinite value to a commodity would be preferred above all others.

So as we have seen through the work of Marx, and Rikowski, labour power production can be seen to be one of the aims of capitalist education, training and other forms of labour power augmentation. This is part of the process of capitalist accumulation which, as we have seen in the previous chapter, can be considered to be an existential threat. Note that it is not a separate component of this process (or threat) but part of an integrated whole.

When we turn to CBET, this is obviously just one part of the production of labour power, or the social production of labour power, amongst many. However, it is distinct from other forms of education and training in terms of the production of labour power in a number of ways. Firstly, as we have seen, CBET does not consider where the behaviours that an employee can perform are located as part of their personhood. Furthermore, it is concerned with the realisation of activities rather than the capacity to labour. Following from this, there is a further intensification of labour in that the person is disassociated from what they are, or even from the capacities that they have, and instead become a placeholder for what they can do. With CBET there are the beginnings of the alienation of the person from their labour power even within the education and training system. The labourer therefore really looks at their labour as their commodity independently of themselves. Secondly, within CBET all activities can be reduced to what the person can do, giving an equivalence between all labour powers. Rather than a plethora of education and training qualifications, CBET is articulated purely in terms of behaviours in the world. Hence there is direct comparison between what persons can do rather than what persons are. Thirdly, labour power becomes a reality by its own exercise and CBET measures directly the ability to exercise a particular competence. Fourthly, CBET is a proxy for the 'keen eye' and 'expert judgement' of the capitalist by offering to them exactly what behaviours they are buying. Fifthly, with its emphasis on behaviour and not on other qualities, CBET provides a matrix for thinking about how labour powers are concentrated and combined like some kind of behavioural human centipede.

In CBET, then, we have a form of education that is almost perfectly congruent with the production of labour power as Marx considered it. It is a *qualitatively different* type of labour power from one that assumes humans have any kind of inherent capacities other than an evidenced (behavioural) ability to labour. This is not necessarily a logical and technically optimised system, even from the perspective of capitalism. Economists often speak of the 'logic of capitalism' as if it were a rule-bound and scientific system. This is

incorrect. It implies that capitalism seeks to establish some sense making by an external criteria. As I have shown above, there is no such logic and sense in capitalism, other than the expansion of the social universe of capital even if such expansion destroys human life and the physical universe itself. If one takes the production of ever-increasing levels of value, and the absorption of all human life and physical materials into the production of surplus value, then capitalism is logical but this is completely self-referential. It implies that capitalism is a system that is progressing inevitably towards a superior level of economic welfare (Avis 2017, p.185).

Let us imagine that human life varied in such a way that it was perfectly amenable to the demands of capital. Each human life would have an infinite capacity for labour power enhancement. Labour power could be bought and sold at whim, with no conditions, by the millisecond or by the millennium. Labour power would never be refused by the labourer; there would be no resistance or subversion of the process. Labour could be combined in the labour process in multiple and infinite ways and combinations (as discussed by Marx in Capital). This seems to be a magical realm of capital (commodity fetishism as applied to labour) in which the technological limits of humanity have been over-written. Indeed it is, and although capitalism may push in this direction it reaches the limits of human biology, psychology and physiology as well as individual and collective resistance. CBET is one way in which capitalism aims to push towards infinite expansion in terms of labour power, neglecting personhood entirely with a pure emphasis on the (behavioural) capacity to labour. It is therefore part of a process of the expansion of the 'social universe of capital' towards extinction of the human subject in the interests of capital.

CBET AND 'CAGING'

The second existential threat from CBET is through the way it cages the minds of subjects and limits their mediation with the world. CBET only allows digital behaviours and neglects mental activity. However, CBET is (at the moment) selective in its effects. Tellingly, low-level vocational courses of the CBET type tend to be inflicted on BAME students representing a form of racial negation. However, whilst the analysis given in this section draws on black existentialism, in particular the work of Fanon with regard to existence and negation, there is a wider application to all bodies that are subjected to CBET.

As I have shown in the previous chapter, CRT and black existentialism consider not only that progress towards racial equality is a myth but that the possibility of negation, or actual extinction, for people of colour remains a possibility. Whilst racial hierarchy exists, not only must gains in terms of racial equity must be constantly fought for if these are to be *maintained*, but so too must be the right to human existence. Despite the emphasis on sociological and legal work in CRT philosophical speculations on existence and humanism are central to this field of study. Reappraisals of the work of Fanon, as an influential philosopher in CRT, for example, have focussed on the humanistic, as well as the sociological nature, of his work (Caute 1970, pp.32–33). A first principle of Fanon's work is that a claim to existence in terms of humanity is in terms of a claim to embodiment:

> Fanon's first response is an attempt to assert his humanity through a bodily construction of his identity. By showing that the movement of his limbs were like that of other human beings he hoped to prove his case. (Henry 2008, p.19)

Fanon demonstrates this through an awareness of the way in which bodily actions are partly controlled, but also uncertain and improvised, what he refers to as *certain uncertainty*:

> I know that if I want to smoke, I shall have to reach out my right arm and take the packet of cigarettes lying at the other end of the table. The matches, however, are in the drawer on the left, and I shall have to lean back slightly. And all these movements are made not out of habit but out of implicit knowledge. A slow composition of my self as a body in the middle of a spatial and temporal world. (Fanon 2008, p.83)

A child's racism (Fanon 2008, p.84) makes Fanon aware of the way in which white supremacy ascribes his body as black and a negation of his blackness – 'Consciousness of the body is solely a negating activity' (Fanon 2008, p.84). This seeks to

> enmesh Fanon in the realm of pure exteriosity, the realm of the epidermal scheme. By 'pure exteriority' I mean the phenomena of being seen as a thing, a mechanistic effect, governed purely by causal forces, *a thing without an inner life* and self control.
>
> (Gordon 2015, p.48, my italics)

The *bodily construction* of identity is a claim that to be embodied, with freedom of movement of arms and legs, is a minimal assertion of humanity. Naturally, this makes all sorts of assumptions concerning the normative body, but Fanon's point is more general: that humans are embodied but this embodiment can be paradoxically negated by focus on the body itself. Gordon (2015, p.49) refers to this experience as one of perverse anonymity where the individual is nameless but yet fully identifiable with complete knowledge of their so-called generalised form. This claim of embodiment and agency with regard to being in the world is a minimal requirement of black existentialist theories of existence. CBET does not allow for even this minimal requirement, as will be shown below.

One of the first principles of CBET is that it is possible to model an activity in the world, normally a working activity, as a set of behavioural competences. These correspond to the physical processes that would allow performance of the activity to a pre-determined standard. It is contentious, but it is important for CBET that it is technically possible for a given domain of work or of human life (such as civic engagement, social relations or health: see Seeber and Wittmann 2017) to map out a complete set of behavioural indicators that would indicate competence in that domain (or at least that a set of behavioural competences have been met). Of course, what these behavioural indicators are is mediated by the existent set of social relations even though the sorts of job competence analysis that are used in CBET appear to assume such things away. As we have shown above, in capitalism, these behavioural indicators will be determined in the abstract by the extraction of maximum surplus value from a living subject. (It is worth reminding us that it is not necessarily the case that CBET will lead to the maximum surplus value that could be extracted, and it is just one of many methods of determining the way in which the process of capital circulation makes use of labour in the production of value and surplus value. It could be that CBET is not even in the interests of capitalism as a whole, but it does seem to be part of a logic of Taylorism and marketisation which has been part of the modern development of the capitalist economic system.) These indicators are completely behavioural and do not involve any mental or cognitive processes. There are three possible types of behavioural indicators as were discussed in Chapter 2 – basic, generic or meta-competences. Each reduces the extent of human action to a binary mediation.

The first type involves physical processes with objects or persons that can be considered to be basic competences. These could be called 'pure'

competences in that they involve some kind of action on the world that is definable in a time limited instance. They can be done and finished in concrete time, which is implicit in defining the competence. If a basic competence took an undefined amount of time then it could never be done and could not be an educational goal. So in terms of a coffee barista, for example, such competences could include grinding beans to make a coffee of a predefined consistency and flavour, adding water of a certain temperature to the ground coffee and pouring the coffee into a cup or mug. These competences are uncontroversial and mechanical. They are also digital in that they offer a mediation with the world that cannot be a matter of degree but are a binary indication of performance. Competences are either 'can' or 'can't'. They give no element of subjective performance or quality of performance in their assessment. Although in the real world of assessing such things there may, of course, be room for individual judgement and error, in theory, judgements of competence (and competence statements) should be unequivocal. This means that for the domain that is assessed the methods of mediation with the world are also digital. Although basic competences may be formed from a complex sequence of routines and tasks the performance of the competence is akin to pressing a button or flicking a switch rather than turning a dial. Competences are either on or off. The performance of the competence indicates that a sequence is initiated which may involve one or any number of steps but the initiation of that sequence or the quality of the performance are unequivocal, at least in terms of the competence. For example, making a cup of coffee to a specified standard might involve all sorts of actions but these are irrelevant to the assessment of competence. It is only the production of the coffee to a baseline level that matters. Making a better cup of coffee than that minimum cannot be assessed independently of the competence, nor can making a cup of coffee that is, in some way, subjectively different from the minimum standard. The mediation that an individual has with the world is akin to pressing a button on a machine (in actuality the individuals body acts as a machine) that initiates a sequence to produce the competence. Presumably, the employer (usually, although competences may be valued in a different sense) values the individual for their ability to reproduce precisely that sequence.

These sets of basic competences make a repertoire of binary outputs that the individual can have with the world. A set of sequences, simple or complex, which have in common that they can either be turned on or off. Unlike other qualifications, which have graduated levels and make

reference to cognitive capabilities, competences reduce the individual to a set of menu items, their only form of action (or resistance) being whether to turn these on or off. There is no room for any thought or improvisation in this process.

The second type of competence might be thought to account for the coarse nature of the mediations produced by basic competences as they involve actions in the world that are more generic such as communication, managing resources and reviewing behaviour. Again, though, these generic competences are fundamentally behavioural competences that must be measured against some action in the real world. The mental process may be assumed but it is, in effect, assumed away as we considered in Chapter 2. To apply a strict CBET model the competences, even if extensive and inclusive, must be expressed behaviourally. So 'provide good customer satisfaction' as a generic competence can be best expressed as 'display *measurable* behaviours that lead to a *measurable* and demonstrable state in the customer consummate with the abstract concept of customer satisfaction'. Note that even here these measurable behaviours and states are a proxy for what are binary properties. Measurable means something that exists (or is 'on' in terms of a binary switch) and not something that is a matter of degree. Properties of the world such as customer satisfaction cannot be assumed but must be observed in real-world processes, and again are binary. Generic competences seem to infer a 'ghost in the machine' in terms of some higher-order mental process, but it actuality they can be reduced to observable behaviours which also must be digital. Again the individual is unable to pursue forms of action other than turning 'on' or 'off' the competence that initiates a sequences of, albeit more complex, actions.

The third type of competences, meta-competences are the 'co-ordinating' competences that sit above and mobilise other competences. These are rarely considered in CBET as they complicate the methodology and threaten to devalue the entire approach as discussed in Chapter 2. Meta-competences would initially seem to confound the degree to which we can infer that competences are digital as they imply a mental co-ordination of competences or a way of combining competences that would undermine the totality of the CBET system. They could certainly be seen to be contradictory, if they infer a mental process that cannot be behaviourally set out thorough a competence mapping process. As discussed in Chapter 2, if meta-competences cannot be captured by the CBET system then CBET is undermined by the need for cognitive, reflective, process

which requires learning and beyond the system. In addition, if meta-competences give individuals the power to rewrite competences, and even create their own competences, or even things that are not competences, then CBET is undermined unless one gives the learner (or the 'badged' acquirer of competences) the ability to map their own competences. True to the Alice in Wonderland World of CBET, the competence to create competences can even become a competence itself, as can the competence to judge the creation of competences.

In reality, meta-competences, even if they involve the illusion of thought required in choosing between competences or combining them, do not change the nature of the competences themselves and they are no different from other forms of competences (basic or generic). For example, a meta-competence that combines pouring the correct quantity of coffee (basic competence) with providing customer satisfaction (generic competence) might involve pouring the coffee at the same time as wishing the customer a nice day. Combining two basic competences such as pouring the correct quantity of coffee with stirring the coffee simultaneously rather than separately is another meta-competence that does not interfere with the nature of competences themselves. Hence, meta-competences do not take us outside of the realm of behaviour, the binary or the digital.

As Barnett (1994) states:

> Even the idea of metacompetences – higher order competences that enable one to call upon a repertoire of competences – do not take us much further forward, attractive though it might be . . . For whether meta or not, competences will remain behaviours and capacities to act as desired and defined by others. They reduce the authenticity of human action. (Barnett 1994, p.81)

Of course, digital outputs and processes can *simulate* analog and human ones. However, as in the simulation of humans by robots or computers the simulation is never accurate. The digital can never completely simulate the analog and this leads to what is called in AI the 'uncanny valley' where a simulation appears human but in a way that is unsettling to humans. Of course, digital processes may eventually replicate a form of consciousness akin to those of humans, but competences are much coarser than this, focussing on the behavioural repertoire of persons rather than their inner worlds. Worse still, the mind is 'trapped' inside a mechanical schema of competences as mental processes are denied in CBET. This produces a

bizarre reverse form of Turing test where although a person may appear to be human, they are trapped in a mechanical armour of competences that allow them only to take certain binary actions (at least if they act within the mechanism of competences).

The impact of this on real persons is horrific in that if CBET were to dominate every form of education and social existence people would be literally caged by the competence process, only able to interact with the world though binary, digital, processes. We are already experiencing this to a certain extent in terms of the service industry, where scripted inter-actions are becoming increasingly common and real persons are trapped by the requirement to carry out a series of processes that are equally replicated by speaking machines at supermarket checkouts.

So although we have an apparently sophisticated and open schema in basic, generic and meta-forms of competence, in actuality they can all be resolved into observable behaviours. Moreover, the need to identify per-formance through competence produces a particularly uncanny digital form of mediation with the world by the subject. Competences are abso-lute and binary. The competence is either achieved or it is not. There is no such thing as the partial achievement of a competence. Something that is absolute cannot be specified as a matter of degree.

This has profound implications in terms of how we consider humans. From the outside, CBET creates a shell or caprice allowing interaction with alien bodies who can only express their skills in a particular domain digitally. If competences were exactly what were required for a particular job or social function and any other action were superfluous then the individual in such a role would effectively be caged. They could mediate with the world only through digital actions allowed by competency. By emphasising the digital nature of the process, CBET also allows a metric whereby human processes can be directly compared against processes conducted by a machine and whereby human methods of learning can be directly judged against machine forms of learning. CBET hence reduces human activity to mechanical action. If CBET was completely effective in every domain of human life then there would be no relation between human experience and the world. The experiencing human would be trapped like a brain in a jar, able only to pull competency levers, push competency buttons or combine these activities in some way. Improvisation in such circumstances is not possible if the competency mapping of CBET is fully drawn out as this would imply the individual writing there 'own' competences which implies that the original mapping

has somehow failed. Paradoxically, the more effective CBET is, the more domains it is applied to, and the more able it is to map domains of human life into competences the greater the existential threat as the 'brain in a jar' metaphor would apply more widely and thoroughly. CBET therefore represents a primal act of Fanonian negation, stripping the individual of control over their body. This is particularly the case for people of colour who are increasingly subject to the disciplinary regime of CBET and 'Sealed into that crushing objecthood' (Fanon 2008, p.82).

CONCLUSION: ALL OUR (TRANSHUMAN) FUTURES?

As the two above sections have shown, CBET assumes a form of human existence like no other, and is the prelude for a transhuman form of life. The person, devoid of internality, is an element in a system of capitalist value transformation. They exist as the quasi-legal holder of competence that is an alienated form of their capacity to labour. This is bought by the capitalist with begrudged reference to the person. (Note that it is a short imaginary step from this point to the complete separation of the person from the competence and their capacity to labour perhaps allowing the capitalist to purchase packets of free floating competence.) The outputs from this competence system are digitally specified behaviours. If there is a mind in there it is caged by competence, unable to express itself in any way other than predefined grooves of behaviour. This produces a very unusual pedagogical subject that is akin perhaps to an alien or transhuman subject. Although most pedagogy has been applied to humans, there has been work on animal, and even exopedagogical subjects very different to that which would be appropriate for human subjects. The individual who was subject to what might be described as a totalising system of CBET would be an exo*pedagogical object.*

The transhuman, exopedagogical object of CBET would remove the need for any mediation by teachers or pedagogical objects. The will of capitalists would instantaneously resolve itself into digital competences that could be attached to individuals, but not located within them. Individuals would be empty beings, the subjects of flows of value, able to produce digital outputs but would be otherwise 'trapped' within their exopedagogical cage. This is liberatory, freeing individuals from the authoritarian classroom and its disciplinary devices but ultimately dehumanising, or rather heralding a transhuman object. Is this what the future holds? Foreshadowing this, "All Our Futures" was the title of Smithers' (1993)

publication on the way in which the CBET revolution in vocational education was not delivering the skill outcomes for which it was intended. In this short book the critique has been very different to that of Smithers and I do not make any claims concerning employment, skills, safety or the revolutionary and even liberating ways that CBET will impact on our education systems, rather that the CBET future is not a human one. There are two things that we might mourn: the end of pedagogy and the end of humanity.

Pedagogy, the internal life of the subject (or relations between subjects) being altered by some science or art of teaching and learning would be lost. Competences are acquired, in a quasi-judicial sense, requiring some new form of exopedagogy.

In this new world of CBET, humanity, that quaint form of educable life, would see itself ever more separated from its labour power and trapped in a competence cage, able to make only digital mediations with the world. In deciding between CBET and other forms of education the choice is that ultimately, we are forced to choose between the promise (which may not be fulfilled) of happiness, efficiency and jobs and our civilisational pedagogy and humanity. In an instrumental world that is not an easy choice to make but one in which we need to engage not only our heads but our hearts.

References

Avis, James. 2017. "Competence Theory and Research: A Synthesis." In *Competence-based vocational and professional education bridging the worlds of work and education*, edited by Martin Mulder, 1071–1193. Switzerland: Springer Verlag.

Barnett, Ronald. 1994. *The limits of competence: Knowledge, higher education, and society*. Buckingham: Society for Research into Higher Education & Open University Press.

Caute, David. 1970. *Fanon*. London: Fontana/Collins.

Fanon, Frantz. 2008. *Black skin, white masks*. London: Pluto Press.

Gordon, Lewis R. 2015. *What Fanon said: A philosophical introduction to his life and thought*. New York, NY: Fordham University Press.

Henry, R. 2008. "Self Transformation in American Blacks: The Harlem Renaissance and Black Theology." In *Existence in Black: An anthology of Black existential philosophy*, edited by Lewis Gordon, 177–207. New York: Routledge. 1997

Marx, Karl. 1996a. *Capital: A critique of political economy volume 1.* (Collected Works, Volume 35) London: Lawrence and Wishart.

Marx, Karl. 1996c. *Capital: A critique of political economy volume 3.* (Collected Works, Volume 37) London: Lawrence and Wishart.

Marx, Karl. 1996d. *Marx: 1835-1843.* (Collected Works, Volume 1) London: Lawrence and Wishart.

Marx, Karl. 1996b. *Economic and philosophical manuscripts of 1844.* (Collected Works, Volume 3) London: Lawrence and Wishart.

Neary, Michael, and Glenn Rikowski. 2002. "Time and Speed in the Social Universe of Capital." In *Social Conceptions of Time: Structure and Process in Work and Everyday Life*, edited by Graham Crow and Sue Heath, 53–65. Basingstoke: Palgrave.

Rikowski, Glenn. 2002. "Education, Capital and the Transhuman." In *Marxism against postmodernism in educational theory*, edited by Dave Hill, Peter McLaren, Mike Cole, and Glenn Rikowski, 111–143. Lanham, MD: Lexington Books.

Rikowski, Glenn. 2011. "Capitorg: Education and the Constitution of the Human in Contemporary Society", Paper prepared for the Praxis & Pedagogy Research Seminar at The Graduate School of Creative Arts and Media (GradCAM), Dublin, Ireland, 25th May 2011.

Seeber, Susan, and Eveline Wittmann. 2017. "Social Competence Research: A Review." In *Competence-based vocational and professional education bridging the worlds of work and education*, edited by Martin Mulder, 1071–1193. Switzerland: Springer Verlag.

Smithers, Alan. 1993. *All our futures: Britain's education revolution.* London: Channel Four Television.

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