

# Chapter 4

## Theorising the Co-occurrence of Remaking Occupational Practices and Their Learning

Stephen Billett

**Abstract** Occupational practice arises through, is transformed by and co-occurs with human learning and development. As such, these practices offer a useful platform to consider and appraise perspectives of practice theories and their applicability to learning. Proposed here is that occupational practice arises through history, culture and is manifested in particular circumstances (e.g. workplaces). Yet, its existence, enactment and advancement are shaped by how individuals engage with, remake and transform history and culture. Hence, accounts of the geneses, manifestations and advancement of these practices needs to include contributions of institutional (i.e. those of the social world) and personal factors (i.e. those pertaining to individuals' development), and, also brute facts (i.e. those of the natural world, e.g. ageing) that shape the needs for occupations and how humans engage with, enact and learn through them. The implications for learning, development and societal change here are powerful and enduring. Sites and circumstances of practice, and individuals' engagement in them, have been the key source of that learning across human history. The case made here emphasises the importance of the personal within these relationships and contributions. It does so by drawing upon empirical work and conceptual precepts that have arisen through a focused programme of inquiry informed by contributions from philosophy, social cultural theory, cognitive science, anthropology, sociology and historical studies, but framed broadly within what might be termed cultural psychology, and attempts to understand further the relations between cognition and culture.

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S. Billett (✉)

Adult and Vocational Educations, School of Education and Professional Studies,  
Griffith University, Mt Gravatt Campus, Mount Gravatt, QLD 4122, Australia  
e-mail: S.Billett@griffith.edu.au

## **Personal, Institutional and Brute Contributions to Learn Through and for Occupational Practice**

Given that occupational practice arises through, is transformed by and co-occurs with human learning and development (Donald 1991; Lave 1993), these practices offer a useful platform to consider and appraise perspectives of practice theories that seek to elaborate them. Proposed here is that occupational practices arise through history and culture, and are manifested in particular circumstances (e.g. workplaces) (Billett 2001a). However, the existence, advancement and enactment of occupational practices are shaped by how individuals engage with, remake and transform them. Hence, explanations of the geneses, manifestations and advancement of these practices need to account for the contributions of institutional (i.e. those of the social world) and personal factors (i.e. those pertaining to individuals' development) and the relations between them. Yet, sitting within all of this are also brute facts (i.e. those of the natural world) that shape the needs for many occupations, and also mediate how humans come to engage, enact and learn through them. Together these three types of factors inform how individuals engage with the world as they experience it. So, more than accounting for the suggestion of the social world (e.g. norms forms and practices), consideration of what constitutes occupational practice, how it is engaged and advanced necessarily includes considerations of personal and brute factors (i.e. those of the natural world, for instance ageing) and relations amongst all three. The educational implications here are powerful and enduring. Sites and circumstances of practice, and individuals' engagement in them have been the key source of occupational learning across human history (Billett 2011a). Indeed, the advancement of the occupations upon which the human species depends has, in some ways, been largely premised upon how individuals learn through their occupational practice. This learning has been supported by practice curriculum and pedagogies, and directed by their personal epistemologies, as individuals have learnt, practiced and innovated across human history.

So, occupational practice needs to be understood through a consideration of how individuals come to mediate the suggestions of the social and brute worlds, which as Searle (1995) reminds us, cannot simply be wished away. Two legacies arise from that mediation: (i) individuals' learning and development; and, (ii) the remaking and transformation of occupational practices. Emphasised here is the role of the personal (i.e. what we know, can do and value) and conceptions of occupational practice, the contributions and premises for that learning and remaking of that practice.

The case made here draws upon empirical work and conceptual precepts that have informed and been informed by a focused programme of inquiry framed within what might be termed cultural psychology. The case commences by outlining the misalignment between the contributions the personal makes to the learning and remaking of occupational practice and how it has been captured in the public and scientific discourse. An account of learning of occupations through practice is used to illuminate the importance of individuals' mediation of that

learning. The point made here is that across most of human history, occupational capacities were learnt rather than taught. The implications here extend to a consideration of how human learning and development progresses, and their alignment with the remaking of culture.

## Some Beginnings

My doctoral work completed in 1995 aimed to provide evidence of and strengthen conceptualisations of what was referred to as ‘situated cognition’. In the years prior to the commencement of this study, there much discussion about the kinds of knowledge required for effective or expert performance, and how that knowledge might best be learnt. One view was that such capacities were based upon cleverness: individuals’ ability to secure, manipulate and adapt what they knew. This kind of view was broadly supported by cognitive psychology and two decades of inquiries into what constitutes expert performance and how it might be developed. However, there were critiques suggesting that this research agenda was driven by commercial and military imperatives, largely from America, and were directed towards identifying artificial intelligence and technologies able to replicate human performance and to reorganise classrooms might best be organised to achieve high performance outcomes (Noble 1991). However, alternative accounts suggested that human cognition was more than individual cleverness, and was shaped by contributions from the social world. In particular, perspectives from anthropology and anthropological studies were used to suggest that the social circumstances in which individuals engage and the kind of socially derived activities they participated in had a profound impact on human cognition, and as such learning, adaptability and performance (Brown et al. 1989; Lave and Wenger 1991).

However, there is little in the way of empirical work or evidence to support these contentions. This was in contrast to the strongly evidence-based and positivist approaches being used within cognitive science and its programs of research. Consequently, my doctoral work sought to ascertain if there were situational effects on cognition and, if so, what were those effects. It involved understanding practice and learning of the same occupation in four different circumstances: hairdressing, and its conduct in four hairdressing salons, one each in three Australian communities and one in Britain (Billett 1995).

Through this empirical work and drawing upon Vygotsky’s conceptions of historical formation of knowledge (Scribner 1985) four levels of contributions: (i) phylogenetic (i.e. the evolving practices of the human species); (ii) the social cultural (i.e. the particular culturally derived practices); (iii) situational (i.e., the situationally manifested instance of that practice); and, (iv) the ontogenetic (i.e., the contributions which arrived from individuals’ personal history) (Billett 1996, 2003) were identified. Phylogenetic development refers to the need for humans, for example, to have their hair cut and dressed; the particular culturally derived approach to hairdressing (i.e., sociocultural); how hairdressing was enacted in

particular situated circumstances of practice (i.e., situational); and, what individual hairdressers brought to their learning of and conduct of that occupational practice (i.e., personal histories). It was found that relations between the situation and the person were both salient and relational (Billett 2003). Whereas the phylogenetic and sociocultural levels were in many ways dis-embedded or abstracted from actual practice, the particular workplaces (e.g., hairdressing salons) where the occupational practice was enacted, the need for it to be undertaken, the problems solved and, the requirements for performance, which were made manifest and were judged (Billett 1998) were situationally embedded. Yet, how individual came to engage in and learn through those situated practices were mediated by personal factors.

This four-level framework has proven helpful in delineating different domains of knowledge (i.e. canonical, situational, personal), and to elaborate conceptions such as the situated nature of expertise, what constitutes transfer or adaptability, and also understanding both learning and development through its emphasis on the relations between individuals practising and the circumstances of practice (Billett 2005, 2006). This line of inquiry was enacted over the next years through a series of detailed studies of how people learn in workplaces, some of which were up to two years in length (Billett 2001b). Throughout, the relationship between the person and the situation emerged as being an important explanatory principle, regardless of whether the learning occurred through everyday practice or through training or educational interventions.

Consideration of relations between persons and the workplace setting was highlighted in a proposition advanced by Scribner (1997/1990) that having overturned Cartesian dualism, the task now is to understand the relations between social factors and human behaviour. She asserted that these relations are irreducible: suggesting that to separate the two was like attempting to separate sodium and chloride, and still expect saltiness. In many ways, what Scribner proposed has framed much of the focus for my enquiries in the subsequent two decades. That is, to understand the relations between the person acting and the social circumstances in which they are acting, and how this explains human cognition, learning and adaptability and also the enactment and remaking of occupational practice.

Yet, despite what is often proposed as Cartesian dualism, de Carte (Cottingham et al. 1988) had realised the importance of these relations. As early as 1644, in *Principles* (part one S48, 1, 208–209) he noted that the mind and body are separable in principle, but are in fact in a ‘close and intimate union’. Later, in his final major publication—*The Passions of the Soul* in 1649, he outlined the strong association between human passion and desire and human thinking and acting. However, he is not alone in reaching conclusions towards the end of a career about the importance of human passion and desire in shaping the nature and the kind of human activity and learning. In his final work—*The History of Sexuality* (volume 3), Foucault (1986) claimed that no amount of surveillance and control can suppress desire. Here the importance of understanding the relation between the social world and personal practices is paramount. Also, far from being irreconcilable, these relations are inevitable for understanding human action and learning. So, beyond being guided by Scribner’s challenge, Miller and Goodnow (1995) advised that, when

considering these phenomena, it is important to negotiate a pathway between the twin hazards of individual constructivism and social determinism. Indeed, it is that challenge and these outcomes that led to a strong focus on trying to understand the dualities that comprise the relation between the worker and the occupations they practice and the workplaces in which that practice occurs.

## My Project and Dualities

Much of the explanatory concepts that have emerged through program in inquiry have focused on dualities of the kind referred to above. Given some misunderstandings about this word, it is worthwhile reiterating what dualities comprise. That is, unlike dualisms—two entities which are separate and not reconcilable, dualities referred to the opposite—two entities which are richly interlinked and linked to each other. Dualities are helpful in seeking to explain how individuals learn through working life. For instance, both co-participation at work and participatory practices are founded on the duality between workplace affordances and individual engagement. Affordances comprise the invitational qualities extended or suggested by work settings (Billett 2001c): i.e. how individuals are invited to participate. That invitation can variously be welcoming and supportive, or minimal or even rejecting or actively inhibiting individuals' participation in work and learning. However, beyond affordances, are the bases from which, and means by which individuals elect to engage with what is afforded them. That is, how they take up the invitations being afforded. These practices were referred to as being co-participatory (Billett et al. 2004). Later, the concept of relational interdependence was advanced to refer to both the interdependence between the person and social setting, but also its relational and person-dependent qualities (Billett 2006). These relations were not evenly shared, uniformly enacted or perceived. So, the relational qualities of individuals' interactions came to the forefront of these explanations. Within subsequent analyses the centrality of interdependence has been sustained, as has individuals' personal epistemologies as the means by which individuals came to engage with what was afforded or suggested to them in and through their work. Going beyond epistemological beliefs, personal epistemologies comprise the capacities of and ways in which individuals come to construe and construct from what they experience. That is, they mediate the process of experiencing, and therefore, learning.

Dualities are well acknowledged and represented in accounts of learning and education. In terms of the project of human learning, rich learning of the knowledge required for occupational practice is understood to be dependent on the kinds of activities and interactions available to those who are learning, and, on the other hand, how learners engage with them. In terms of the educational project, experiences provided in educational institutions and practice settings are nothing more or less than invitations to change. Ultimately, how individuals take up that invitation is salient to what they learn. The distinctions that Wertsch (1998) makes between

appropriation and mastery are worth noting. Mastery is a superficial form of learning which arises for individuals who comply with what is being socially suggested. However, although apparent compliance does not mean individuals are committed to have learnt that knowledge or are convinced by it. They have simply mastered the requirements to meet external demands. When acting independently however, means they are unlikely to utilise that knowledge. Conversely, for Wertsch (1998) appropriation comprises individuals' enthusiastic engagement and taking up of what they have experienced and making it part of themselves. So, these two forms of engagement are premised upon how individuals elect to respond to that particular experience and, how and what they learn from those experiences.

Together, these precepts have guided much of my considerations of occupational practice and its learning, and anchored the centrality of interdependencies in my theorising of how individuals have come to mediate what they experience and learning across working life. Yet, an enduring concern that affects that mediation is how occupations are societally privileged as this shapes how they come to be viewed as worthwhile and worthy of personal and societal investment.

## Societal Privileging of Occupational Practice

The standing and worth of occupational practice is deeply rooted in societal values and relations. Indeed, across human history it has been 'privileged others' who have decided the worth of occupational practice: aristocrats, theocrats, bureaucrats and academics (Billett 2011b). Moreover, decisions about conceptions of occupational practice are most often advanced in the absence of those who practice voices. This has led to distorted understandings and an uninformed basis of what constitutes these occupation, the knowledge required to practice them, and how that knowledge can be learnt. Taking some examples, for Plato, artisans and artists' work belonged to that side of life which the average freeborn Greek (male) citizen regarded as banal and unworthy of his serious attention (Lodge 1947). Similarly, Aristotle claimed that 'citizens must not lead the life of mechanics or tradesmen, which is ignoble and far from conducive of virtue' (1964, p. 40 as cited in Elias 1995). Aristophanes referred to potters as 'stupid buffoons' because of the work they do. Plato also suggests that the nurse and the tutor were of no worth for anything else. Moreover, Plato claimed that artisans were incapable of generating new ideas themselves. Instead, "they have to wait for God to invent a solution" to their problems (Farrington 1966, p. 105). He conclude, not surprisingly, that the "lowest form of education was to be for those who work with their hands and not their minds" which was referred to as technical from the Greek *techne* (Elias 1995). So, these aristocrats claimed that not only was the work undertaken by these practitioners of low worth, but also they themselves were of low worth and incapable of complex thought. Whilst it has been suggested that in Homeric Greece there was a more benign approach to the standing of occupations, the above kinds of sentiments were not restricted to Greece. In Imperial Rome, Cicero stated that "... now in

regard to trades and employments, which are to be considered illiberal... all craftsmen are engaged in mean trades, for no workshop can have any quality appropriate to a free man” [De officiis (On Duties)].

Similarly, elsewhere and later in human history, theocrats as powerful social elites also expressed sentiments about the worth of work based on their own precepts. The word vocation has its Latin root as ‘vocare’, which is to call—a summons, a bidding, an invitation to a particular way of life. However, that invitation was based upon a particular set of views and beliefs about what constituted worthwhile work. For instance, “some economic activities were seen as being distinctively more ‘perilous to the soul’ than others and the more commercial the motive the more dangerous activity became” (Rehm 1990, p. 130). Hence, the valuing of occupations was again premised on the sentiments of privileged others: theocrats. Even within Calvinism, where work was set to reshape the world in the fashion of the divine ‘kingdom-come’ through dedicated labours of particular kinds and in ways that reflected theological rather than personal purposes (Dawson 2005). Within such traditions, daily work became the design and location for what became characterised as the so-called Protestant or puritan work ethic. That is, for individuals to labour unquestioningly and without disrupting the status quo, which included particular religious beliefs and values. Marx critiqued this sentiment as being instances of workers being duped into false consciousness. What he proposed was that this societal sentiment was reducing workers to being mere ciphers and subject to the demands of societal elites and directly contributing to their own servitude and enslavement to such elites. While such criticism has validity and has been rehearsed more recently in accounts of democrat work and workplaces, it again emphasises again the sentiment of another kind of societal elite (academics and commentators) much of what is written is advanced in the absence of the voices of those who practice). That is, an elite view is that if individuals found satisfaction, interest and fulfilment in their work, then they were being duped. If, however, workers were dissatisfied and critical of their work, they were being socially emancipated. Again, what this rehearses is a continuation of socially privileged views that have failed to account for the perspectives of those who work.

More contemporaneously, bureaucratic and sectoral accounts have made distinctions and allocate worth amongst occupations. The formation of modern nation states led to the rise of bureaucratic control, much of that was associated with securing and maintaining those states. Initially, when they were being formed there was the need for a strong emphasis on switching allegiance from individuals’ estates to the state. That is, rather than having an allegiance to the local lord upon whose land individuals lived, the guild that workers were associated with or the professional association, those allegiances had to be first and foremost directed to the state. This then led to interventions of different kinds, most noticeably the destruction of the guilds in republican France, because their associations with the Ancient Regime, and their dismantling and re-establishment under bureaucratic control in Germany, for instance. Hence, occupations were classified and sorted bureaucratically.

So, although a key outcome of modernity was the rise of individualisation, that rise needed to be broadly aligned with the state's interests (Quicke 1999), part of which is to delineate occupations into hierarchies. For example, the development of what is now referred to as the professions also arose from a concern to delineate and create hierarchies in work that were a product of societal changes arising from various industrial revolutions. In essence, parts of the changes that comprised modernity were to generate a new set of occupations associated with science and technology reflecting changes in the kinds of work to be undertaken. In particular, those occupations that were held to offer clean and decent work were those privileged by societal elites and growing middle class. Part of this delineation was to emphasise occupations that were deemed worthy of a level education that was higher than schooling. Although the virtues of the liberal higher education are often made, its key intent was occupational (Roodhouse 2007). That is clean non-manual work, employment as befits the kind of education that provided pathways for the children of the upper middle classes to gain employment in the public service and in diplomacy. Hence, these mechanisms were used to generate and extend societal sentiment that allocates different kinds of worth on different occupations and emphasises those that are seen to be 'clean', despite some obvious contradictions (i.e. the work that surgeons do).

It is noteworthy that in the Table 4.1, sentiments identifiable at the time of Plato are still being rehearsed in terms of what is seen as being desirable occupations in the twenty-first century. In this table, a scale of the social desirability of occupations is presented. It is noteworthy that the hierarchy of desirability is characterised by the so-called mental-manual divide, and that the knowledge required to manufacture things (i.e. *techne*) features most strongly in the lower levels of desirability. For instance, Class III work involves routine non-manual activities (e.g. clerical work) is seen to be more socially desirable than the work of the self-employed, technicians and skills manual workers. Within all of this delineation and hierarchies of work, also come different demands and requirements for the recognition of work and the discretion afforded to workers.

So, just as earlier, Plato had suggested that tutors were no use for anything else, with the development of modern nation states often came the formation of mass education systems to align individuals with the goals and values of these states, and avoid threats to those states. Over time, this alignment between states interests and

**Table 4.1** Occupational social desirability (Hope-Goldthorpe Scale 1974)

Class	Occupations
Class I	High-grade professionals, managers, administrators and large proprietors
Class II	Lower grade professionals and managers, and higher grade technicians
Class III	Routine non-manual workers
Class IV	Small proprietors and the self-employed
Class V	Lower grade technicians and supervisors of manual workers
Class VI	Skilled manual workers
Class VII	Semi-skilled and unskilled manual workers



education has led to a growing regulation of teachers' work and often clear imperatives arising from the bureaucratic provision of education directed towards controlling what teachers do, what they teach, how that teaching occurs and how students' learning is assessed. All too often, these very measures are undertaken without reference to or consultation with those who teach, as Plato would have suggested.

So, the point made here is that across human history, it has been privileged others who have issued the call, made judgements about occupations, and have advanced views of their worth, and organised educational provisions accordingly. It might be easy to view this as being an issue of the past, but as the examples above indicate, the regulation of teachers' work in contemporary times is but one of a number of instances of this sentiment continuing. Indeed, the kinds of values that were laid down in Hellenic Greece by the likes of Aristotle and Plato still seemingly frame much of the views of what constitutes worthwhile work, the delineations between what is erroneously taken as mental and manual work and placing low values on the capacities to produce goods.

### *Academics*

However, it is not only aristocrats, theocrats and bureaucrats that contribute to distorting societal sentiment about work and delineating in unhelpful ways the requirements for work and occupational standing. Academics have also contributed to this exercise. Again, it seems that much of the views expressed without bothering to engage with those who work. For instance, Bauman (1998) states that "...the majority of people [are] locked into meaningless and degrading work that offer little opportunity for notoriety or fulfilment" (p. 36). He goes on to suggest that such activities are not worthy of individuals key life projects. Yet, it is not at all clear whether these views were formed through engaging in discussions with the individuals to whom he refers. Similarly, Wright Mills (1973) who did interview some workers came up with the conclusion that "For most employees, work has generally unpleasant quality. If there is little Calvinistic compulsion to work among propertyless factory workers or clerks, there is also little bit Renaissance exuberance in the work of the insurance clerk freight handler, or department store sales lady" (p. 3). Yet, it is clear that he did not interview sufficient numbers to make conclusions about entire classes of workers and those who work. Dewey (1916) was far more circumspect. He proposed that the worth of occupational practice is essentially what it means to those who enact it and also their associates. "A vocation means nothing but such direction in life activities as renders them perceptibly significant to a person, because of the consequences they accomplish, and are also useful to his (sic) associates" (p. 307). Pusey (2003), whose research projects interviewed and surveyed large numbers of Australian workers, also reached similar conclusions claiming that work was a social protein that buttressed individuals' sense of self. Similarly, Noon and Blyton (1997) referred to the diversity of work in

the ways in which workers' experiences emphasise both satisfaction with work and alienation from it and how this is expressed through patterns of cooperation and resistance to work.

Much of this second set of sentiments seems to be more closely aligned with the findings of research projects I have conducted about individuals' engagement with work and working life. Even those who are employed in forms of work that others might view to be low status and demeaning (e.g. production process workers, employees in a wholesale fruit and vegetable market) report satisfaction in their work and finding meaning within it. Moreover, these workers reported taking pride in what they do and being seen as being effective in that work. Furthermore, surprisingly across a series of studies was the extent of discretion that workers had, but their emphasis on needing to perform that work effectively. Hence, necessarily, even low status forms of work and seemingly precarious forms of employment afforded levels of discretion which were engaged with by the informants that were interviewed. This is not to suggest that all individuals' work is rewarding and that all individuals find worth within it. However, it does contest the delineation of work on the basis of societal sentiment about its worth. Ultimately, the valuing of work, what constitutes occupational practice and how it is enacted will be mediated by the individuals who practice. Hence, it is important to understand the role of the personal plays in accounting for what constitutes occupational practice, how it is enacted, and in what ways is individuals' learning about it and the development of occupational practice.

## **Positioning the Personal**

It follows that the positioning of the person in the enactment and remaking of the social practice and learning in and through it becomes clear. Although the individual or the personal is often seen as being oppositional to or antithesis of the social, quite the opposite is the case. That is, the personal is the epitome of the social. It arises through individuals' ontogenetic development that comprises the ongoing negotiations amongst the contributions of the individual, the social world and brute facts across individuals' life histories. What individuals have suggested to them every day by the social world shapes what they know, can do and value. But it is also the brute factors of nature such a maturity that also influences how we experience and our responses to it. As we age, hearing may be less acute, sight less clear and our expectations about what we can and are able to do is transformed. These comprise bases upon which individuals construe what they experience and construct knowledge from what that process of experiencing that arises through socially derived processes engaged in everyday across individuals' life histories. So, individuals' processes of experiencing are themselves a product of earlier or premediate experiences that are often socially derived (Valsiner and van der Veer 2000). As Harre (1995) suggests "personality becomes socially guided and individually constructed in the course of human life. People are born as potential

persons, in the process of becoming actual persons takes place through the individual transformation of social experience” (p. 373). Hence, these processes are person dependent by degree. The cultural psychologist Valsiner (2000) refers to socially derived everyday experience being unique to individuals in some way. This is salient because it is human’s intentionality and agency that shapes their meaning making.

## Individuals and the Social Suggestion

The product of social efforts and suggestions is not and cannot be some uniform construction, as implied in the concept of socialisation. Socio-genesis is not uniformity of experiences and experiencing. Instead, the social suggestion is constructed personally in many ways. Here, for instance, it is worth distinguishing between occupations and vocations. Occupations are those that arise from the social world and social need. Humans need doctors, nurses, hairdressers, carpenters, etc. to address their needs. Those occupations transform over time as social requirements and expectations change and practices of these occupations are transformed by new discoveries, technologies and ways of being practised. Yet, these are institutional facts (Searle 1995). They arise from the social world. However, in contrast, vocations are personal facts. That is, individuals elect what constitutes their vocations and the degree by which they will exercise their effort and interests to engage with them. As noted, the word is derived from ‘vocare’, what calls the individual to engage with it. Individuals have to assent to an occupation being their vocation. No amount of social press can make an individual want to engage wholeheartedly and effortfully with an occupational practice that they do not take to be their own. But, more than that, not only is it assenting to accepting an occupation as a vocation, but it is how it is enacted—practised. What individuals brings to the enactment of the occupation—the knowledge about it, capacities to enact and values associated with it, comprise the occupation in practice. Without the person, there is nothing being practised. What that person brings, not only gives life to the practice but also shapes it in particular ways. Dewey uses the example of a small room with nothing in it apart from a window and telescope, to meet this point. He suggests that to a brute realist the room seems relatively barren and constricted. However, to the astronomer who lives there it opens up on to the entire universe (Higgins 2005). Indeed, it is this personal mediation of experience—the process of experiencing, through which humans learn and come to practice. Factors associated with human capacities, intentionality and agency are those that shape what people do. Valsiner (1998) proposes that “most of human development takes place through the active ignoring, the neutralisation, of most of social suggestions to which the person is subject in everyday life” (p. 393). He goes on to suggest that this process of mediating what is experienced is essential to buffer individuals’ personalities against the constant demands of social suggestions. He continues, “hence, what is usually viewed as socialisation efforts (by social institutions or parents) is

necessarily counteracted by the active recipients of such efforts and can neutralise or ignore a large number of such episodes, aside from single particularly dramatic ones” (p. 393). Moreover, Valsiner (2000) invites a reconsideration of some precepts which have long been established within theorising about the social world and human development. He suggests that the popular portrayal of Vygotsky’s concept of the zone of proximal development is quite counter to what was originally intended, which was to give licence to the agency and intentionality of individuals.

In play, the child is always higher than his (sic) average age, higher than his usual everyday behaviour; he is in play as if a head above himself. The play contains, in a condensed way, as if in the focus of a magnifying glass, all tendencies of development; it is as if the child in play tries to accomplish a jump above the level of his ordinary behaviour....Play is the resource of development and it creates the zone of near miss development. Action in the imaginary field, in the imagine situation, construction of voluntary intention, the formulation of life plan, will motivate, this all emerges in play. (Vygotsky 1966, pp. 74–75 as cited in Valsiner 2000)

His contemporary, Leontyev (1981) referred to appropriation as individuals making their own from what they experience in the social world.

Similarly, as was foreshadowed previously, Wertsch (1998) distinguishes the effortful and full-blooded taking in of what is being suggested by the social world. Conversely, mastery is the superficial acceptance of what is being suggested that arises through social press, because individuals resist or are uninterested in appropriating that suggestion. A qualification here is that, appropriation and mastery are not to be seen as being inherently positive in the first case, and negative in the second. Individuals can enthusiastically engage in and appropriate bad practices and inappropriate values or misunderstandings. Equally, individuals might well engage in a process of mastery because they simply do not believe, agree, or value, what is being suggested to them. For instance, in one of the first critiques of the concept of ‘communities of practice’, Hodges (1998) pointed out that rather than participating in a community of practice and then inevitably leading to identifying with it, that quite the opposite could arise. Experiences of an early childhood education program led her to dis-identify with that particular community of practice.

Central here is the concept of individuals’ ontogenies. That is, the development that has risen across personal histories, from the accumulation of individual processes of experiencing. Through having had experiences in particular social circumstances, individuals learn moment-by-moment from what they experience. This ongoing process of learning shapes what individuals know, can do, and value, and in ways that are quite person dependent, because the particular set of experiences individuals have had and how they have reconciled those experiences across their life histories. These occur, moment-by-moment, every day and in different ways across individuals’ life histories. Consequently, there is an inevitability that individuals’ mediation and construction of knowledge, and their role in remaking occupational practices, are person dependent by degree.

All of these propositions have consequences for the learning and practising of occupations?

## **Learning for and Transforming Practice: Personal Mediation**

As individuals engage in their occupational practice, two kinds of legacies arise: learning and the remaking of occupational practice.

### *Learning Through Practice*

As has been noted above, the process of engaging in thinking and acting is generative of change in individuals (i.e. learning). That change can comprise the construction of new knowledge (i.e. fresh concepts, novel perspectives, new means of achieving goals) that quantitatively and qualitatively can change what individuals know, can do, and value. So, when individuals have experiences that are novel for them in some way or ways, these kinds of legacies can arise. Of course, sometimes new experiences can be overwhelming and, as a consequence, the kind of changes that arises may be confusing or unhelpful. Nevertheless, novel experiences can lead to changes in individuals. Yet, here it is important to be reminded that what is a novel experience for one individual is a routine experience for another. Being confronted by a foreign language might be overwhelming for one individual, but for the individual for whom that language is native it is quite ordinary and routine. More likely, perhaps most frequently, throughout our everyday lived experience as adults, we hone and refine what we know, develop links and associations, and reinforce our sense of self and that about the world in which we engage. Hence, experiences which are routine and commonly encountered also have a legacy in terms of qualitatively and incrementally changing what we know, can do, and value, even through reinforcement and refinement. Again, what is familiar to individuals is person dependent, as is how they experience, construe and construct from those these experiences (i.e. the process of experiencing), and therefore, what they learn from them. Hence, in this and person-dependent ways, as individuals engage in thinking and acting within and across their working lives they are learning. Certainly, engaging in work activities and interactions are no exception. Indeed, the very goal-directed nature of work activities and interactions are those that require conscious engagement and are likely to be variously generative of new knowledge or the further development of what individuals already know. Yet, in all of this, it individuals' personal mediation of those experiences that shape what changes in what individuals, know, can do and value (i.e. learning arises).

## *Remaking and Transforming Occupational Practice*

Beyond individuals' learning arising through every day experiencing, the activities that are engaged in are remade or transformed through their enactment. Just like other social norms, forms and practices, individuals' occupations are shaped by history, culture and situation. Yet, as occupational practice are enacted in particular circumstances of practice in responding to specific goals and through activities and interactions shaped by those situations, occupations are remade (Donald 1991). This consideration emphasises the importance of how cultural practices are maintained, refined and sustained through its enactment. Importantly, for a consideration of occupational practice there is a co-occurrence between individuals' learning and the remaking of the occupational practice (Billett et al. 2005). As individuals engage in their occupational practices incrementally, individually, and collectively, they are contributing to a process through which occupations are remade as requirements for occupational practice either stay the same or slowly change. In this way, rather than changes in occupational practices being characterised as some kind of tsunami of change sweeping all before it, it is more like thousands of small waves of different kinds and intensity which bring about that change. For instance, an occupation like nursing is increasingly confronted by not only an ageing population of patients but increased frequency of demented patients. It is predicted, that soon as many as a third of all patients in hospitals in Western countries will have issues of delirium and dementia beyond the particular health-related issues for which they are being treated. It will be doctors, nurses and other healthcare staff who will be responding to these challenges in their wards and remaking their occupational practices in response to these changes in patients.

Moreover, engagement in practice can also lead to the transformation of that practice as new circumstances arise and requirements change. Awareness of environmental damage has led to changes in practice associated with disposal of refrigerants, oil waste, and then understanding the dangers arising from construction workers encountering asbestos has led to transformations in renovation work. Some of these transformations to occupational practice can arise quite rapidly. For instance, the recent outbreak of Ebola led to new quarantining protocols as existing practices were found to be insufficient to contain the disease. Solutions had to be generated and implemented locally and quickly by healthcare staff. In this way, the practices of disease control work transformed. So, as Lave (1993) reminds us "knowledge always goes through reconstruction and transformation in use" (p. 8). What anthropology also provides are insights into the kinds of practice oriented curriculum and pedagogies that arise as part of the enactment of occupational practices and these support the remaking of occupational practices.

So, beyond individuals needing to access and engage with the occupational knowledge that arises through history, culture and situation, the very development of that occupational knowledge is dependent upon individuals acting on and with it

in responding to requirements for the occupation in particular circumstances. Hence, cultural practices such as occupations co-occur with individuals' learning, with both processes being mediated by personal factors.

## Learning Through Practice

The learning of occupational practice provides an example of this kind of co-occurrence. Across human history the most common and sustained mode of initially learning occupations has been through the practice of those occupations. Family and local workplaces were common sites for that learning in Europe (Hanf 2002), Hellenic Greece (Lodge 1947), India (Menon and Varma 2010), Japan (Singleton 1989), Mesopotamia (Bennett 1938) and China (Ebrey 1996) to mention a few examples. In Europe, as perhaps in other places, family-based occupational preparation was largely displaced by industrialisation that destroyed family businesses which were perhaps the mainstay of local communities and economies (Gowlland 2012; Greinert 2002). However, that mode of learning has been central to humanity and human progress because not only was it about developing occupational capacities, but also their transformation. As foreshadowed, it seems that in these countries, and over time, the key process of learning occupations was through individuals' mediation of what they experienced in occupational practice. That is, through processes of observation, imitation, practice and action (Downey 2010). Collectively, these processes are referred to as mimetic learning. Importantly, this is a process of learning, rather than being taught. Indeed, the practice that is commonly referred to as teaching (i.e. the transmission of knowledge from a more informed to less informed social interlocutor) is a recent phenomenon and one linked to the formation of modern nation states and compulsory and universal education and the ubiquitous processes of 'schooling' and the need for this kind of didactic approach (Billett 2014b).

The important point here is that mimetic learning is largely personally mediated and arises through active engagement and construction of meaning and development of procedural capacities (Billett 2014a). Indeed, analogously, the word apprenticeship is derived from the word 'apprehend', inferring it is the learner's job to engage with and grasp the knowledge required for the occupation. Similarly, contemporary processes of apprenticeship learning in the Middle East have been described as apprentices having to steal the knowledge required for their occupation, rather than being given easy access to or taught it (Marchand 2008). The Japanese word for apprenticeship—'minarai', means one who learns by observation (Singleton 1989), and there is even a term 'minarai kyooiku', which refers to learning by in unobtrusive observation. Further "it is expected that serious learning will proceed unmediated by didactic instruction" (p. 26).

From a series of studies into how learning occurs in workplaces and across a range of industries and kinds of employment, three of the four key contributions to that learning were premised on individuals' participation (i.e., engaging in

goal-directed activities, observing and listening, engaging in practise) and only one (direct guidance of more experienced partner) was largely mediated by others (Billett 2001b). Hence, whilst not diminishing the importance of expert guidance, particularly when learning through discovery alone is insufficient, it is wrong to deny, minimise the importance of the personal mediation of experiences and learning. This is probably never more salient than in an era of schooling that privileges teaching and the organisation of educational experiences, often based around institutional imperatives, than students' learning.

The importance of what is proposed here is that the personal mediation of learning is an innate and foundational basis of human cognition and therefore, learning is central to how human society has evolved (Byrne and Russon 1998; Downey 2010; Plotkin 1994). Therefore, rather than the teaching of occupations being the starting point for considerations about developing occupational capacities, but rather their learning. As the anthropologist Jordan (1989) notes, "learning through observation and imitation ... is important in all higher social animals, but it is humans who have developed this propensity into the primary modality for the acquisition of skills" (p. 931). So, although within 'schooled societies' there is propensity to view mimesis as mimicry (i.e. mere copying), but it is an important and foundational process through which humans make sense of what they experience and learn from those experiences. To utilise what is experienced requires an evaluation of it, and prediction of its applicability, and the reproduction of what has been experienced demands a level of engagement requiring higher forms of cognitive functions (Byrne and Russon 1998). Indeed, relatively simple imitative acts (i.e. copying another person's thumb movements) utilises a number of cognitive functions and sensory processes (Barsalou 2008), all of which are coordinated by higher forms of cognition. In all, mimetic processes do much to shape how we act, particularly when seeking to achieve particular kinds of goals such as in and through work (Meltzoff and Decety 2003).

However, given this complexity it is important that we move from a consideration of mimesis as observation, imitation, and rehearsal, through to a broader conception of mimetic learning. There are three key reasons for proposing this shift to a broader conception of personally mediated learning. First, the kind of sensory inputs that humans engage are not restricted to observation. There is also auditory, haptic, taste and olfactory contributions, and even peripetal sensations. Second, it is account for the contributions for the intra-psychological processes (i.e. those within the person) which include how the cognitive, sensory and nervous systems mediate what is experienced and are generative of responses. Indeed, it is timely to revisit the contributions of intra-psychological processes given the advances in our understandings that are being informed by developments within neuro and cognitive science. Given new findings about how the sensory (Barsalou 2003, 2009) and neural (Heyes 2005) systems engage with and has legacy associated with what is experienced socially, these contributions are informing in ways that have never been possible before. Third, there is a need to understand how mimesis can be augmented through other kinds of experiences that can support its efficacy. For instance, in studies from anthropology and history, it is possible to identify practice



curricula and pedagogies that can augment learning in ways that extends the potential of personally mediated experiences (Billett 2014b). It is important to account comprehensively for how the moment-by-moment learning (i.e. microgenetic development) arises in individuals and contributes to their ontogenetic development (i.e. that arising through the legacy of personal experiences), and how this development is shaped by the range of sensory contributions, need to be understood through both inter-personal and intra-personal processes, and there are means exercised in practice settings that support the remaking of practice that can be described as practice curriculum and pedagogies.

## The Conceptual Promise

In sum and conclusion, proposed here is an account of understanding occupational practice and its learning which posits conceptual promise. First, it offers some reconciliation between nativist and empiricist perspectives of human development, some of which are premised upon recent findings from cognitive science. While nativists emphasise innate capacities within humans and empiricists hold that human capacities arise through experience, what is proposed here is that both of these contributions are important, with perhaps the innate capacities and foundational qualities of human cognition being a part of our phylogenetic development (i.e. across the history of the human species), the experiences individuals encounter are mediated but also mediate those innate capacities. Hence, it is the interaction between both the innate and the experienced that is essential to understand human learning and development.

Second, whilst learning and development are two separate concepts best captured in the distinction between microgenetic and ontogenetic forms of development, both are founded on interdependence between the person and the physical and social world they encounter. That is, the basis of learning and development is bidirectional and mediated by social sources and those from the brute world, and individuals' personal epistemologies and their mediation of what they experience. Interdependence refers to the need by individuals to engage with some of these sources to learn on the one hand, and, on the other, how institutional facts (i.e. those arising from the social world) require to be engaged with, remade and transformed for them to exist.

Importantly, and thirdly, this theorising contributes to our understanding of the socio-genesis of knowledge. It extends a consideration of the social origins and contributions of knowledge and knowing to individuals' personal histories and ontogenies. There is nothing more social than the personal. It also questions the Vygotskian premise of knowledge arising first on the social plane and then becoming an intra-psychological attribute. How can anything be experienced if there is no basis for that experiencing? To deny the innate contributions of individuals' cognitive, neural and sensory systems, let alone what they have learnt across their lives, and the capacities and understandings that they have developed,

suggests a very poor theorisation as Wertsch and Tulviste (1992) suggested long ago. Indeed, all of this suggests that inter-psychological processes cannot be understood without a consideration of the intra-psychological. Finally and importantly, for a consideration of learning occupational practice, all of this elaborates human occupational practices as being mediated relationally across culture, situation and personal facts including brute facts which are part of our own personal experiencing.

In all, here the co-occurrence of human learning and development, and the remaking and transformation of cultural practices has been posited and elaborated, with an emphasis on the personal mediation as being central to this concurrence.

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