Interdependencies at work: 
Constituting reflection, performance, dialogue and reward

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Abstract

This paper discusses progress in a two-year study of the work, working lives and learning of twelve workers. They comprise four groups of three workers in emergency service, gymnasium, restaurant and IT help desk work settings. The concept of relational interdependence between individual and social agency (Billett 2005), is used to understand how their participation, learning and remaking of cultural practices that comprises their work progresses. These processes are held to be products of the interdependence between social suggestion experienced at and individual agency exercised through engagement in work life. In identifying and elaborating bases of these interdependencies and their consequences for changes to individuals’ cognitive experience and sense of self (i.e. learning), and the remaking of cultural practices (e.g. workplace practice), four linked and overlapping bases for understanding the processes of interdependencies emerge. These are: (i) reflection and review (i.e. reflection); (ii) performance roles (kinds of selves developed in the workplace); (iii) prospects for dialogue (i.e. opportunities for interpersonal interactions); and (iv) how conceptions of rewards and recognition are constructed. In different but distinct ways these four bases provide a means to elaborate interdependencies at work, thereby providing a platform to analyse processes of individual learning and the remaking of work practices and concepts throughout working life.

Work, Learning and the remaking of cultural practices

This paper sets out to elaborate how the processes of both individual learning for and through work, and the remaking of the cultural practices that constitute work, progress. It draws upon the conceptual positions proposed in a previous paper (Billett, Smith & Barker 2005) that set out some initial findings of an investigation that is discussed in this paper. That investigation comprises an ongoing review of how the affordances and engagement of groups of three workers engaged in each of four distinct kinds of work and workplaces shapes their learning and the remaking of their practices. In that earlier paper, it was proposed that the process and outcomes of engaging in work activities is more than the completion of tasks and interactions. For many, it is the means through which their identity is shaped and exercised (Noon & Blyton, 1997; Pusey, 2003). Given the role that individuals’ existing conceptions and processes play in the construal and construction of what they encounter, this process comprises a negotiated relationship arising through participation, as the process and outcomes of that engagement are not the same for all individuals (Billett 2005). One way of understanding the learning that occurs through the processes of individuals’ engagement with the social experience they encounter is to use concepts from the socio-cultural project, in particular the concept of inter-psychological processes attributed to Vygotsky (1978): those between the individual and social world. Links between self and work through inter-psychological processes of knowledge formation
by individuals can be apprehended through their engagement in ongoing and moment-by-moment individual learning or microgenetic (i.e. moment by moment) development (Rogoff, 1990). Consistent with more individually focused constructivist theories, it is held that when individuals engage in activities they do more than merely deploy their cognitive capacities. That deployment also necessarily leads to some change as tasks are undertaken and interactions occur with social partners and socially derived artefacts and practices. Whereas individual cognitive constructivism would see the individual as being the most powerful mediating influence in that change, the sociocultural constructivist perspective view the social contributions as also mediating individuals change. Hence, engagement in work leads to particular legacies in terms of individuals’ ontogenic or lifelong development that is generated by the relations between individuals’ sense of self and their work. These are referred to as intra-psychological attributes within the socio cultural project. That is, work and learning are so intertwined as to inevitably link individuals’ learning, including their identity formation through their work activities (Fenwick, 2002; Somerville, 2002).

Individuals may not always construe this learning positively. Nevertheless, a cognitive legacy of different kinds arises through this participation with inevitable links to individuals’ sense of self. So, on the individual plane, it is held that individuals’ learning arises through their engagement in their work activities as they deploy their cognitive experience (i.e. their knowledge, conceptions, bases for construal) in engaging in workplaces activities and interactions: the social experience.

Yet, on the cultural plane, another kind of development occurs. When individuals engage in work tasks and interactions, they are also actively participating in the remaking of those practices (Billett 2005). The social experience -- the social press -- does not and cannot exercise its suggestion comprehensively or unequivocally. As Newman, Griffin and Cole (1989) noted, if the social suggestion was clear, unambiguous and potent, there would be little need to communicate because socially sourced and transmitted meaning would be understood unequivocally. It is proposed in our project that individuals have to engage in the process of remaking culture because, as with microgenetic development, individuals actively negotiate meaning and construe and construct what they experience drawing upon their cognitive experience, which is in some ways unique to them (Billett 2003). Hence, if for no other reason, they are necessarily engaged in remaking work activities and practices, because what is projected socially (i.e. in the form of the vocational practice) is unlikely to be clear and unambiguous. Moreover, this remaking occurs at particular times, in particular circumstances and moments of cultural transformation. So, on the cultural plane it is suggested that individuals engage in the active process of remaking cultural practices through their everyday work activities and interactions.

This claim, in particular, addresses an important and enduring conceptual perturbation. This is as follows. There is considerable ongoing interest in the relationship between the social and the individual within the major disciplines of psychology (Rogoff, 1995; Scribner, 1997/1990; Valsiner, 1994), philosophy (Archer, 2000; Bhaskar, 1998) and sociology (Fenwick, 1998; Giddens, 1991). Although different in emphasis, much of the deliberations in these disciplines are focused on the prominence of one or the other of the contributions (i.e. social structures or individual agency). Such debates address important issues associated with the origins of the knowledge and the knowing required for work, and whether and in what ways the individual or the social predominates in the formation (including its remaking and
transformation) and learning of this knowledge. These perspectives offer different responses to the question: do individuals bring about personal and cultural change, or is that change dependent upon social forms and structures (Ratner, 2000; Valsiner, 2000)? Here, we propose that the answer is to be found in the dualities comprising relationship between the two. Workplaces provide a useful test bench to investigate, illuminate and discuss further this proposition.

This paper proposes some bases to identify how these dualities play out, can be illuminated and elaborated and understood further. Firstly, premises of the complex relational interdependence between the social and the individual (or ontogenetic) contributions to individual learning and the remaking of practice are briefly rehearsed. Following this, the procedures adopted in the research project are proposed and described. Then, using an initial analysis of the data of just three workers, four bases for illuminating and elaborating both the relational interdependence and also the learning and remaking of practice are proposed. These comprise: (i) reflection and review (i.e. reflection); (ii) performance roles (kinds of selves developed in the workplace); (iii) prospects for dialogue (i.e. opportunities to for interpersonal interactions); and (iv) how conceptions of rewards and recognition are constructed. Finally, some tentative propositions about the efficacy of these bases are advanced.

**Interdependencies at work**

In earlier work, we investigated the dualities involved in individuals’ participation and learning through work (Billett, Barker and Hernon-Tinning 2004). These dualities comprise the affordances of the workplace and individuals’ engagement in the workplace. Central to our consideration of these dualities is the relational interdependence that arises between them. That is, they are interdependent, but in ways that are relational, rather than mutual or reciprocal in equal parts. We propose that: neither the social suggestion nor individuals’ agency alone is sufficient to understand learning and the remaking of the cultural practices that constitute work (Billett, et al 2005). The social suggestion or press comprising societal norms, practices and values, and their enactment in instances of social practices such as workplaces, is never complete or comprehensive enough to secure socialisation. Here, socialisation is defined as the unquestioned and comprehensive passage of knowledge from the social world to the individual. As Berger and Luckman (1967) and others propose, the social suggestion is not projected in a way that is likely to lead to socialisation. This is because individuals will engage with the suggestion with greater or lesser reception, and greater or lesser fidelity in its appropriation. Because of limits in the social suggestion, individuals necessarily have to be agentic and active in the construction of meaning, if for no other reason than socially-sourced knowledge requires interpreting and construing to understand what is being suggested. Yet, even beyond simply attending to, engaging with and comprehending what is being suggested, individuals brings a possibly unique base of conceptions, procedures and values to their engagement with social forms and practices.

These conceptual premises seem particularly salient for understanding the learning, through participation, of the cultural practices that constitute paid work. Much of what needs to be learnt for vocational practice, has its origins in cultural practices and historical precedents (Scribner, 1985). This knowledge is important because it arises from cultural need and has been refined overtime through its enactments.
Consequently, to access this knowledge with its important historical and cultural legacy requires engaging with the social world, because this knowledge does not arise from within the individual. As foreshadowed, when individuals engage with this knowledge and reconstruct it, in addition to their individual development, they are remaking these cultural practices at a particular point in time and under particular access to the social suggestion. Their enactment is not through faithful and mechanical enactments of the social suggestion that results in its reproduction. Instead, it is through individuals’ engagement, construal of and construction of those practices, albeit mediated by the exercise of social and cultural norms and practices. The exercise of personal agency (i.e. its intensity and focus) is essential in transforming cultural practices because new cultural needs arise, such as those brought about by changing times or technologies. Wertsch (1998) distinguishes between compliant learning (i.e. mastery), which is superficial and may well be the product of forceful or compelling social suggestion of the kind which Valsiner (1998) identifies, and learning in which individuals engage willingly (i.e. appropriation) to a concurrence between what is experienced and individuals’ values and beliefs. Richer or deeper kinds of learning requires effortful engagement buoyed by individuals’ interests and intentionality (Malle, Moses, & Baldwin, 2001). Such learning is most likely to occur when individuals are engaged actively in the process. So, there is an inevitable interdependency between the agency of social world in projecting its suggestion and the agency of individuals in making sense of what is suggested to or afforded them. At the heart of this interdependency is individuals’ personal epistemology (Smith 2005) that is socially derived ontogenetically, but mediates in personally unique ways what is subsequently experienced.

**Procedures**

To understand more clearly the relations that underpin the interdependencies at work and their consequences, we are currently investigating the working lives of groups of three workers in each of four different kinds of occupations and workplaces. Selecting three workers across four workplaces was undertaken to gain insights into how affordances or invitational qualities were exercised towards workers in the same workplace; how these workers then construed and constructed what was afforded them in the ‘same’ workplace setting; and how they engaged in their work and learned as result of these processes. Previously, we investigated individual workers in three workplaces to understand the continuities of both the workplace and individuals (Billett, et al 2004). That revealed instances of the negotiated bases for participation in the workplace and how both individuals and the workplace development was premised on factors that were both internal and external to the workplaces. This study aims to account for how different workplaces afforded opportunities for workers and workers, in turn, engaged with what was afforded them. Our site selection was designed to gather data from sites with different purposes, organisational structures and patterns of employment. Earlier research (e.g. (Grey, 1994)) indicated that institutional rules and practices have a significant impact upon the workplace participatory practices we are seeking to identify and understand. We also wanted to investigate different kinds of work, including some utilising technology and also teamwork; in order to gain insights in diverse work situations and workers whose employment standing and status were diverse. The four workplaces engaged in this study are: (i) a gymnasium; (ii) a restaurant; (iii) an Information Technology (IT) support section within a university; and (iv) a fire station. In each of these workplaces,
three individuals agreed to participate. In the gymnasium -- Trim and Healthy -- they comprised a receptionist, a trainer and a manager. In the restaurant -- Platinum -- they comprised a chef, who is also a part owner, a waitress and a manager, who is also a part owner. In the IT support section the participants comprised three helpdesk consultants, one of whom is a manager. In the fire station, the participants comprised a station manager, and two fire officers, one of whom is a specialist officer.

The procedures adopted comprised a series of interviews that will proceed over an 18-month period. The data gathering commenced with two lengthy semi-structured interviews, the first focusing primarily on the workplaces, their requirements for continuity and their norms and practices. The second interview focused primarily on the workers’ history and personal preferences. These lengthy interviews were initial attempts to understand the affordances of the workplace and its practices: what constitutes their institutional facts (Searle, 1995) and also the bases for workers’ participation in and learning for their work. Beyond these two initial interviews will be a series of progress interviews occurring over a 12-month period. These progress interviews will be used to map changes in work and the individuals’ learning overtime. They are also used for the participants to comment on the initial analysis of the data from earlier interviews. The focus here is on the first set of progress interviews for each of the 12 participants. It is used to reveal the bases for workplace affordances and individual engagement in these four workplaces.

Earlier findings
An earlier analysis of data from the first round of interviews identified distinct bases through which these workplaces afford opportunities for engagement, learning and the remaking of the cultural practices across the four worksites (Billett, et al 2005). This included the relations between workplace affordances and how they are engaged with, construed and constructed by the individuals as exercised through their intentionality. However, the dualisms identified were not simple. They are richly interconnected and intertwined. The societal value and standing granted to fire fighters is something generated outside of their workplace but manifested in their practice and public execution of their work. The apparently contradictory mix of adherence to command and control protocols, on the one hand, and the opportunity afforded to have second forms of employment, on the other, are nuanced and relational bases for these workers to be highly integrated with their work practices and its culture. That is, beyond the sense of self that is afforded by the work, the conditions are also attractive, even within a highly top-down form of work organisation. In some ways, the work demands both this kind of engagement and the practice of command and control. Yet, clearly some contravene that requirement by not being wholly committed to their work, thereby raising questions about their competence to be relied upon during emergency work. The intentions arising from the personal histories of the help desk workers are exercised in different ways within work that is hidden from many of those who benefit from it. Instead of public adulation and support (as in the case of the fire officers), some of these workers rely on electronic feedback from client surveys as a means to demonstrate their worth. Equally, the workers in the gymnasium and the restaurant are seeking quite different bases for their continuity and confirmation of their being effective through that work that shapes their intentions and agency. For some, this comes from within the workplace, but for others it comes from outside of it. This early work and tentative findings demonstrate how work and learning work are integrated in different ways and different purposes across these four workplaces. It
emphasises the relational nature of the interdependencies between the social and individual contributions, yet articulates strongly how the confluence of the social and individual is exercised perhaps most strongly by individuals through their construal and construction (learning if you like), and that the social practice is as much dependent on these individuals as individuals upon it. Hence, even from the perspective of the remaking of work practices, such as in those skills required for workplaces, the individual stands as an important component and needs to be considered by pragmatic agendas currently associated with learning and learning throughout working life.

Following from those initial analyses, our consideration of the data has turned to identify bases through which these dualities between affordances and engagement play out for these 12 workers.

**Reflections, Performance role, Dialogue and Reward,**

From an analysis of the interview data, factors associated with: (i) opportunities for reflection; (ii) construction of performance roles; (iii) opportunities and bases for dialogue; and (iv) constructions of reward emerged as the premises of platforms to understand how these dualities play out. In the elaboration and illustration of these bases, below each of the bases is briefly described with an illustrative example of the data from one of the fire fighters.

**Reflection and review**

The constant demand for engaging with new knowledge and new practices that were required in these workplaces through changing customer and workplace requirements (e.g. restaurant, IT helpdesk), reshaping of the occupational practice (e.g. emergency services), technology (e.g. IT helpdesk) and work organisation (IT helpdesk and gymnasium), were reflective of changes to workplace requirements that are reported as being an increasingly general feature of contemporary work (ref). This demand for change can bring with it uncertainty, challenges to competence, new demands and stress. Consequently, opportunities provided by the workplace (i.e. affordances) for individuals to reflect upon these changes and respond to them, and how individuals elected to respond to these changes stand as a basis to understand and elaborate the relational interdependence between the individual and the social contributions.

The work and workplace of the fire fighters are rich with opportunity for reflection and review of both personal and contextual experience. The culture of care and concern that focuses on safety within the working operation of teams or ‘crews’ is integral to the job and promotes an awareness of self and others that in turn requires and develops the capacity for reflection and review. This work characteristic is supported by a number of primary workplace affordances that emphasise teamwork and the responsibilities and interdependencies by which it is defined. These include:

1) Shift allocation, that is, the placement and retention of the individual fire fighter within a team of usually four members for extended periods of time,

2) Shift rotation, the team working a shift of four X 12 hour days on and four off, two each by day and night, meaning that while on-station the team lives together – this is particularly important through the night shift where workloads are usually lighter and sleeping is permitted,
3) Designated roles and duties within the team, eg, driver, pump operator, etc, that differentiate individuals and define working relationships within the team.
4) Regular in shift team training exercises.
5) Relatively large amounts of down-time that enable a high degree of interaction and personal communication around work and non-work related experiences. Essentially, these workplace affordances bring specific fire fighters together for the same related practices over relatively extended periods of time in the same place.

Hugh has successfully completed the 13 week recruitment training and exam and is currently working his way through the self-paced training modules that will over a three years period lead to a diploma qualification necessary for continued employment in the fire service. Yet he also refers to other kinds of affordances. You learn by going to incidents, witnessing things and then talking to the boys afterwards. A big part of our job is a debrief among the boys because you don’t see everything – there’s so much action going on that you only see your little bit. For Hugh, the immediacy of the hands-on experience at incidents is central to learning. This is linked to the need for a debrief after the incident that forms the third component in the learning chain - do, witness then talk. He makes a point of returning to the site after the incident if possible. This process allows you to work out what was actually there as opposed to what you perceived was there through all the smoke and confusion and the limited vision that is afforded by doing your little bit. Without this process I go away from the incident with a feeling that there’s something missing, I didn’t get the whole picture. Sometimes what you see afterwards doesn’t relate to the picture you mind built up through all the smoke and limited visibility. For me it finalises things and gives you something more to build on for next time. It’s a personal learning process that makes me a better fire fighter. In this way, the duality of the affordance of the work practice and also workers’ agency and intentionality in engaging in and reflecting upon work activities serves to illustrate the relational basis of this interdependency.

**Performance roles**

Emphasising more a focus on the individual contributions were capacities to be seen to be and performing particular roles. This included specialist skills within work teams (e.g. IT helpdesk, emergency services), a training role given to a part-time worker and a marketing function taken by another (i.e.. restaurant), being self-employed individual for one worker and a more corporate management role for another (i.e. gymnasium) were identified as important performance roles that were being constructed in these four work settings. However, these roles were not uniformly welcomed (e.g. part-time waitress), and constructed through negotiated relations between individual and workplace goals (IT helpdesk and gymnasium). Here, issues of self and the intentionality of individuals’ participation and remaking practice come together. That is, the individual who takes upon himself or herself a particular performance role is seeking to exercise that role for particular intentional purposes. However, the degree by which the role is welcomed and is successfully anointed by the workplace is linked to its consistency with the individual’s intentions and goals.

The emergency service work requires fire fighters to enact a number of roles, often simultaneously. For Hugh, this is a Junior fire fighter - who holds the designated position of seat number 4 in the appliance (water pump vehicle) that takes crews to
emergency incidents. In the multiple crewed station where he works, there is provision for 2 only junior fire fighters. However, Hugh relishes the role of a junior fire fighter. His commitment to this position includes the completion of a diploma within the allocated 3 years. Yet beyond this he is afforded on-going development in the workplace best characterised as an apprenticeship with all the learning experiences of that training model. Despite his position being recognised as junior and, therefore, inexperienced, Hugh brings a high level of experience to this position as a result of years of service as a fire fighter in Britain. So, Hugh does not personally identify as an inexperienced fire fighter. He recounts stories of his ‘inexperience’ in the British fire fighting service and the learning by mistakes that resulted, eg, the axe through the plate glass window. Yet his ‘inexperience’ does not personally accord with his afforded role of junior fire fighter. He notes the level of support he is afforded is different than that in Britain where inexperienced fire fighters are known and treated as the ‘sprog’. There are some long serving boys here and I’m not treated as the sprog as such because that culture is fast fading and my experience is recognised by the boys here who may have been in longer here in Queensland than I have but I’ve seen a lot more fires than they have. In this way, similarly, the duality of performance roles are elaborated in what roles and support for those roles are afforded and yet hows this role, by different degree, is engaged with by individuals.

Dialogue
In addition to managing the change requirements of work, dialogue with others was identified as a basis for ongoing work and work practice, and the maintenance of performance roles. So, the process of, opportunities for and bases of dialogue were central to the performance of work, learning and remaking practice. Yet, this important process was, not surprisingly, afforded in different ways in different workplaces and the same workplace. Moreover, its engagement by individuals was not wholly a product of what the workplace afforded.

In Hugh's situation, the opportunity is afforded to engage in informal debriefs in the appliance when returning from incident and over a cup of tea on return to station. Formal debriefs and professional counselling are available after major incidents. However, he suggests “you can beat the boys sitting down and having a good chat about what they saw, especially if you witnessed something not nice yourself – you can get it out of your system, talk about it – it just helps alleviate stress and that type of thing”. He also notes the importance of "talking to other fireys to relate their experiences – that’s a big part of the culture, sitting around with a cup of tea chatting about the job. They’ll pass on their experiences". However, he also comments that often, these dialogues arise “through someone's failure to do something. Once recognised others chime in with their similar experiences and you learn something”. Yet, this dialogue is not only between co-workers, it is intentionally afforded by the workplace. Critical stress management policy requires officers to check fire fighters’ need for counselling after major incidents. Moreover, there are norms and conventions within the workplace about how these dialogues progress. Hugh refers to exercising some caution in conversations, especially with older more experienced fire fighters. He noted the need to approach the situation correctly. They are very willing to share that knowledge with you. If you go about it the wrong way, take them for granted, get too selective with what you’re trying to learn, picky, they can shut down a bit but if you're receptive to everything they’re saying to you, prepared to listen – sure you filter it with what’s relevant to more modern times - they can impart some
fantastic knowledge. So, there are relationship-building skills involved here that reflect the negotiations between individuals and the social practice. Yet despite the availability of opportunities, communication and particularly conversation is not guaranteed here. Learning and gaining access to “the important stuff that’s outside the manuals, the knowledge of experience” requires effort and sensitivity. In this way, both ontogenetic and situational contributions serve to underpin the bases of dialogue through which participation, learning and remaking of practice occur.

Rewards
Securing rewards was identified as exemplifying key purposes towards which individuals were driven in their work and their remaking of their work practices in responding to changes in work requirements. Yet, their actions reflected the duality of participating in work, learning and remaking practice. The workplaces afforded different kinds of rewards, in different ways and for different purposes. However, individuals also constructed rewards that were separate from (although not necessarily unaligned to) the requirements of the workplace, on the bases of their own needs and trajectories. Learning rewards are also afforded by the workplace setting. After major incidents, opportunities are provided to build context and a sense of personal purpose and performance in team response through debrief and or return to site - *It's nice to go back in and check how accurate your brain picture was so next time you'll know what something is by the ways it feels – it fills in the blanks – gives you an understanding to fall back on when you next have very restricted visibility. Without this process I go away from the incident with a feeling that something is missing, I didn't get the whole picture.* Learning rewards for Hugh are when prior learning serves to solve an immediate work place problem. Yet another type of reward is afforded when the culture of care and safety extends to protection of crew by each other from the potential threat of other fire fighters with a reputation for laxity. Being warned is a reward of acceptance, inclusion.

There are other kinds of rewards provided by this workplace that permit continuity of employment, long non-work periods between shifts and opportunities to progress through the organisation. Moreover, as the physical work required in fire-fighting and emergency service work is less easier to do later in working life, there are opportunities and positions available that permit fire fighters to retain their identity as fire fighters. Again, the exercise of both rewards afforded by the workplace and those that are central to individuals’ identity as a worker (e.g. fire fighter) are exercised in a way that is interdependent. The prospect for both is entwined an interwoven with the other.

Prospects for further elaborations
Here, four bases for elaborating and illuminating the relational interdependence between the social and individual contributions to participation, learning and remaking of cultural practice have been identified and presented. An instance based on the data from just one subject has been used to illuminate these relations in this section. The data from other workers in the same workplace (e.g. one who works from home while tending to his sick wife, another who is a senior officer) offer different sets of relationships that serve to shape their kind of participation, learning and remaking of practice. Across other bases of interdependence, these bases are also played out in different ways premised on quite different relationships. Across these sites, as identified in the earlier analyses are quite different institutional arrangements
for participation and learning. It is intended to explore further these workers experiences through the bases outlined above. It is clear that quite different and distinct opportunities for reflection, dialogue, rewards and performance roles are afforded and exercised across these workplaces. Moreover, the initial data suggests there are stronger distinctions and differences within these workers goals, their intentions for participating in work and how they exercise their interest and agency. It is these analyses that will elaborate the next phase of this study.

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