This paper discusses workplace participatory practices -- the reciprocal process of engaging in and learning through work (Billett 2000). Reciprocity between the affordance of the workplace (its invitational qualities) and individuals’ engagement in the workplace is proposed as a means of understanding how participation in and learning through work proceeds. These affordances are shaped by workplace norms and practice and affiliations (e.g. cliques, associations, occupational groupings, employment status) and are often characterised by contestation and their inequitable distribution. The distribution of access to opportunities for practice are directed towards sustaining the work practice and/or the interests of particular individuals and groups who participate in it. These reciprocal processes of participation in the workplace are illuminated through an analysis of the participatory practices of three workers over a six-month period. These are those of a union worker, a grief counsellor and a school-based information technology consultant. The findings first illuminate the work of these three individuals through an analytical framework comprising categories of activities and interdependencies. The bases for participation, performance and learning for each of the three workers are then illuminated.

Work, participation and learning
Understanding the requirements for work and participation in and learning for work may be best understood through an analysis of micro-social processes in workplaces. These processes are proposed as shaping how work is enacted, and understanding the relationship between workplace participatory practices and what is learnt through engagement in work activities. An account of how micro-social workplace processes shape activities, actions and learning is advanced. Little distinction is made between participation in workplaces and learning. Consequently, factors shaping participation in work -- workplace participatory practices -- are also central to how and what individuals learn through work. The need to understand further workplace participatory practices arose from earlier work (Billett 2001b) that identified how contributions to learning were shaped by workplace affordances and how these affordances were construed as being invitational by individuals in workplaces. Judgements about workplace affordances shaped how they engaged in and learnt through work. These findings illuminate the inter-psychological processes that occur between the social world and individuals and how micro-social processes shape the moment-by-moment learning that Rogoff (1990) refers to as being micro-genetic. To advance an understanding of requirements for work, learning through work and workplace pedagogical practices, it is necessary to illuminate and elaborate these reciprocal participatory practices. In the following, what constitutes workplace participatory practices is outlined and advanced. Then the procedures and findings of a recent study of the requirements for work and the micro-social processes that constitute the reciprocal participatory practices of work are discussed.

Workplace participatory practices
The contributions to and limitations of learning vocational practice through work were identified in earlier work (Billett 2001b, Billett & Boud 2001). Whether considering learning
through everyday work activities or through intentional workplace learning activities, reciprocal participatory practices shape this learning. That is, how workplaces afford opportunities for individuals or cohorts of individuals to participate in and learn through workplace experiences, and how individuals elect to engage with what is afforded them. The scope and focus of tasks they are invited to engage in are often directed towards maintaining the work practice’s continuity. This may include the standing and employment of individuals or cohorts in the workplace. For instance, Bernhardt (1999) has identified how, to safeguard their own employment, full-time workers restricted the activities and learning of part-time employees. Consequently, opportunities were afforded in ways that were aimed to sustain the work practice and/or particular interests in the workplace (e.g. other workers).

The bases for participation in workplaces are rendered particularly salient because of associations between participation in social practice and learning (Rogoff 1995, Lave 1993). The knowledge required for work practice has social and cultural origins. Therefore, it needs to be accessed inter-psychologically – between the individual and the social source (e.g. Vygotsky). Therefore, more than merely completing a work task, a lasting cognitive legacy may occur. This legacy arises through the reinforcement or refinement of what individuals already know, or through extending what they already know. However, although access to activities and interactions are shaped by workplace norms and practices, individuals also exercise their agency in determining how they participate in social practice, and what they learn through their engagement. The bases of this agency and its exercise are likely shaped by individuals’ personal histories and their subjectivities. Individuals may well be directed to sustain and extend their practice in ways that are inconsistent with the social practice’s goals, albeit leading to a disassociation and dis-identification with the social practice (e.g. Hodges 1998). Tensions may arise when the kinds of participation individuals want is not afforded by the workplace. For instance, a worker used his two-way radio to listen to fitters fixing and maintaining parts of a manufacturing plant. He actively sought out the fitters to learn more about their work, as this was work he prized for himself. However, his efforts were frustrated by restrictions on the number of fitters that could be employed in the workplace, and by the safety officer’s efforts to constrain his attempts to observe and interact with the fitters in places that were off-limits (Billett 1994). In this way, the tensions between the individuals’ goals and those of the workplace are played out in these reciprocal participatory practices.

Conceptually, understanding further these reciprocal processes contributes to key discussions within psychological theorising about the relations between individual cognition and the socio-geneses of knowledge (e.g. Cobb 1998, Rogoff 1995, Scribner 1997, Valsiner & Van de Veer 2000). Procedurally, it is necessary to elaborate an understanding of work requirements and the impact of workplace participatory practice on work and workers.

**Illuminating three work practices**
The study discussed here aimed to illuminate and understand further these workplace participatory practices and their consequences for learning through work. Key questions guiding the inquiry were:

(i) In what ways does the social practice of work afford participation?
(ii) What is the range of bases by which individuals participate in the workplace?
(iii) How does co-participation and its consequences differ across workplaces?
(iv) What are the consequences for learning arising from co-participation?

**Procedures**
The procedures comprising this study are two interrelated sets of activities. The first mapped the requirements for three participants’ work practice while the second investigated their workplace participatory practices. Firstly, the three individuals were identified, and selected, and permission obtained for their involvement. The aim was to identify individuals engaged in diverse work practice, including at least one who was in some way a contingent worker.
(i.e. part-time, contractual or home based). The participants selected comprised: (i) a trade union official; (ii) a grief counsellor at an institute of forensic pathology; and (iii) an information technology (IT) consultant to five primary schools. Their work and work practices were quite distinct from each other. For example, the IT consultant represented a worker who was contracted to work part-time for one day a week at each of five primary schools. In addition, the work practices were also selected respectively for the importance of developing shared understanding, knowledge that is difficult to learn, and circumstances where interactions with co-workers may be limited or difficult.

A scheme of Activities and Interdependencies was used to describe the three individuals’ work practice over a four-week period through processes of interviews and observations. The direct observation of work and interviews were used to describe the work practice. Data were gathered and analysed to evaluate the scheme’s capacity to: (i) identify the requirements for that area of work practice; (ii) make predictions about the likely learning through their participation; and (iii) examine those factors assisting or inhibiting participation. The second phase comprised a six month investigation of the workplace participatory practices of the three workers. Commencing, progressive and summative interviews were conducted throughout the six-month period with the participants, using sets of items designed to map the trajectories of both the work practice and the subjects’ participation in their work practice. Data derived from the observations and interviews were analysed using the refined scheme of activities and interdependencies. The workplace data provided rich descriptions of the requirements for performance and factors assisting and inhibiting participation and how they have evolved over a six-month period.

Findings

Continuity of work practice

The bases for the continuity of each work practice first need to be elaborated in order to understand the kinds of activities they are focussed on and the bases by which participation will be afforded. The trade union exists because of a need for the industrial and professional representation of its members. To sustain itself, the union has to be positioned to best address members’ needs, to advocate for the public sector and the professional standing of workers in that sector. As government policies are central to shaping of the public sector’s employment practices, the union seeks to influence government policy. However, because of its party political affiliation, the union is aligned to one of major political parties (Labor). However, this affiliation is complicated when this political party gets elected into office and becomes the employer of the majority of its members. This affiliation brings additional internal complications for the union as some of its officers are also members of factions within the political party and are aspirants to be pre-selected as members of legislative assemblies. So there are complex relations between the industrial and professional concerns of its membership, and the union’s political affiliations. As the union’s industry sector is responsive to and services the community, it is also important to be positioned in key debates and discussions about the sector. In addition, the union plays a role in supporting and sustaining employee unionism. So its key goals are all about sustaining and maintaining unionism more generally.

The forensic pathology center has a legislated role. Its existence is not under threat unless the legislation under which it is constituted is revoked. As long as the state wants coronial inquests, there will be a role for the centre. Like any other government body it needs to be seen to be performing effectively to maintain its current level of funding and to secure growth (e.g. for an adequate provision of counsellors). However, there are other threats to the centre’s continuity. In a climate of outsourcing and cost cutting, the privatization of the centre’s functions has been canvassed. Recently, another threat to its continuity arose from
earlier practices in other forensic pathology institutes where access to body parts and their retention had occurred without consent. This issue, and non-consented retention of human tissue in hospitals, raised widespread concerns in the community, upon which governments reacted in a number of Australian states. In this particular pathology center, the counsellors took the lead role in responding to governmental inquiries and community concerns about the retention of human tissue for coronial and scientific purposes.

The five state-funded primary schools for whom the Information Technology (IT) consultant (Aden) works, play an ongoing role in the community, educating young children. Like many public institutions they have been subject to structural changes. These include the requirement for each school to adopt wider administrative responsibilities and be responsive to innovative practices, such as using IT for both administrative and educational purposes. As the staff in these schools lacked appropriate computing expertise, the five schools have collectively employed Aden to provide these services. Much of Aden’s initial work was to assist teachers with routine breakdown and maintenance tasks. As a casual employee, early in his employment, his tenure had been dependent upon working effectively with teachers in assisting them with information technology for educational purposes. However, the departmental directives about the implementation of the Standard Operating System (SOS) caused a change in the priorities and saw his status rise as he became more centrally involved with the schools’ administration. So, in these ways it was possible to identify some key bases by which the three workplaces’ continuity was based. In the next section, the bases for the continuity of individuals’ practice are described and discussed.

Continuity of individuals’ practice
Each of the three participants had distinct bases for their participation in their work. Common was some relatedness to important personal goals. Anna works as a trade union official. Her reasons for working in the union are highly consonant with the union’s goals and bases of its continuity. She has a long-founded concern about equity and social justice and comes from a family with a tradition of public service. She enjoys a high level of relatedness with many, but not all of the core values of the work practice in which she engages. An exception is her growing disaffection with political party politics, and of the union’s associations with the Labor party of which she was once, but is no longer, an active member. Her concern about close affiliation with one political party is not shared by all her colleagues, some of whom are closely affiliated to the party and are active members of party factions. This complicates her standing in the union, as she is unaffiliated, in a system where factional support and numbers can be very important and potent. Some officials in the union have the goal of being pre-selected for seats in the legislative assembly. Therefore, their relationship and loyalties are, at times, ambiguous.

Her capacities to research, write and present cases are well aligned to the procedures for advancing policies in the Union. Through her position she is able to exercise social justice issues and commitment to the public sector. Given the congruence between Anna’s personal values, and those of the workplace, it is not surprising that she has not looked elsewhere for work. However, she commented that a quality of her working life that could cause her to consider leaving would be the breakdown of personal relations in the workplace. More than the volume, intensity and complexity of her work, the deterioration of workplace relations (affordances) presents the key threat to the continuity of her practice. She also has concerns about how those affiliated with her may also be subject to workplace contestation. She is concerned that in the intensely contested work environment, these newer workers may be targeted or marginalised because of their associations with her. In terms of her participatory practice, the work pressure and the shifts in affiliations have meant she has to “make more of an effort to contribute”. So despite her growing workload outside the union, she needs to maintain her standing and engage closely within the workplace.
Jim, is a grief counselor working in the forensic pathology center. He is engaged in work for which he is professionally-prepared, experienced, finds interesting, challenging and, at times, rewarding. His interest in working directly with clients and providing a public (i.e. free) service is central to his beliefs about counselling. He possesses a strong commitment to the public provision of counselling services and the obligation for government to fulfil its social obligations. However, despite his commitment to counselling, he remains skeptical about and adopts a criticality towards his work, which he believes is open to questions about its processes and values. These qualities may be in contrast to the professional medical values and scientific discourses that permeate and are influential in the forensic pathology centre. At the beginning of the project, Jim was a casual employee. However, a permanent position was created that Jim was able to secure. This permanency has permitted him to practice counseling in ways more consonant with his personal and professional beliefs. One of these ways has been to include more face-to-face counselling and to offer his services to a wider clientele. So, he has extended the scope of the counseling practice through the exercise of his agency in a way that is consistent with his beliefs and values.

As noted already, Aden is an IT consultant for 5 primary schools. Working in schools sees Aden engaging in a familiar environment. His parents both work in primary education (as a principal and teacher). So all his life he has been involved in discussions about and often physically associated with primary schools. His competence with computers and information technology arose from an interest he developed as an adolescent through having access to a computer at home. While still at school he undertook a period of work experiences that permitted him to extend and demonstrate his competence with computers. Initially, he viewed this employment as paid work experience, but it has grown to full-time employment. He remains concerned that working in schools as a consultant may exclude him from more interesting, prestigious and highly remunerated work in the corporate world. So although quite content with the work in schools, he could be tempted by an offer from elsewhere, although he is not actively seeking such offers. The job has now been classified within the education system (i.e. Technology Officer) and he is included in staff listings and has his superannuation paid for by the department. So, while still a contingent worker, the workplace is now inviting his participation and involvement more strongly.

The concepts above, which relate these individuals’ life direction, are linked to their subjectivity. That is, the sense of self that individuals projected in their responses was consistent with many aspects of their practice, and, in particular, how they conducted their employment. So, whereas Anna had never sought out alternative employment, Jim would not consider working for a private sector company in a counselling role, yet Aden could be tempted by an offer that would allow him to extend his practice further in the kind of corporate direction he cherished. What is identifiable here are the bases associated with individual subjectivity. These shape their participation in work activities and the exercise of their agency. However, how this exercise was afforded in each of the workplaces was quite diverse. That is, the intersection between the trajectories of the workplace’s bases for continuity and those of the three workers were the bases that determined the reciprocally-constructed participatory practices at work. In order to illuminate these practices the following section describes there practices.

**Constructing workplace participatory practices**

Diverse instances of participatory practices were identified across these three workplaces. These have consequences for the conduct of their work and others’ practices. For instance, in the highly demarcated professional work environment of a forensic pathology centre the counsellor was permitted to exercise considerable discretion in his work activities, without the need to consult or seek permission. The workplace comprises a number of separate areas
where quite distinct forms of work are conducted (e.g. dissection rooms, laboratories where scientific testing and analysis are undertaken, storage areas for cadavers and samples, counselling facilities, and police facilities for investigation and administrative purposes). So the workplace is characterised by distinct divisions of labour premised on the possession of particular specialist knowledge. Professional autonomy is prized and practised in this workplace. Staff designated as professionals enjoy discretion within their demarcated area of work. Given the relative standing of counselling work, Jim was able to control and direct his work. Much of his work might be described as routine (e.g. only the conduct of a few standard functions – assisting with the identification of cadavers, counselling next of kin, and assisting with coronial processes). Yet, given the emotionally demanding and distinct character of each event, its requirements go beyond the mere repetition of frequently performed tasks. It also involves him interacting with other staff. This includes the mortuary attendants who provide information, and make the cadavers ready for viewing; working with pathologists to ascertain information to pass on or withhold from next of kin, discussing with the police officers in the centre about the deceased and their relatives. However, there is little opportunity for boundary crossing because many of the work functions are so discrete.

Anna’s work practice was far more homogenous in terms of activities to be undertaken, but with far more complex workplace interrelationships premised on negotiations, collaborations and consultations. Within the union, highly democratic workplace practices are in place. However, there are also cliques and affiliations that were often the basis for negotiations and the working through of contested ideas and practices. Hence, unlike the grief counsellor, Anna’s standing and capacity to make decisions is constrained by and tightly interrelated with workplace relations and affiliations that are constantly being renegotiated, and to decision-making processes that are open to scrutiny and contestation. Also, although her work encompassed a broad range of tasks and discretionary actions, the executive authority that is largely vested in the union Secretary’s position limited her authority. So although Anna enjoys wide discretion in her work, she is denied a commensurate level of authority, which is embedded in consensual arrangements at one level, and highly centralised executive authority at another. So she lacked the capacity to take the kinds of relatively unilateral actions that Jim was able to take in his workplace.

The work requirements of Aden were constructed through the interactions with the five schools he serves weekly. As a contingent worker, he seeks to maintain relationships with administrators and teachers in the five schools. However, as the schools have converted to a departmentally-mandated standard system of computer operation, his work has become more focussed on establishing and maintaining that system. As the implementation of this system became a key strategic goal for the schools, the basis of Aden’s tenure has changed. He is now less dependent upon maintaining his tenure through the good will of the teachers, and more focussed on his capacity to establish and maintain the SOS in the school. For the schools’ administrators this is currently taking precedence over routine requests for assistance for classroom teachers. So, as the goals have changed, so too have the participatory practices and range of tasks with which he has to be involved.

As indicated, over the duration of the project, each participant was afforded the opportunity to exercise his or her vocation. However, different bases existed to exercise their agency. Over the six-month span of this study, Jim and Aden experienced expansion in their affordances that permitted them to extend the scope of their practice, and their discretion within those practices. Anna on the other hand, although enjoying wide discretion, did not experience an extension of her practices. Instead, she felt the need to give extra time to workplace relations, despite her growing workload and a requirement to be externally and strategically focussed. Taking account of the changes in work requirements and participatory practices seems important. Social practice is dynamic, as are the relations that constitute them. The dynamic qualities of workplace activities and participatory practices were evident
in these three workplaces. Jim is able to exercise agency and make changes to his practice so that it and the practices of the counselling service have become closely aligned. Aden’s bases of accountability and continuity have changed and firmed up as well. By the conclusion of the project, he has clear goals and lines of authority and his vocational interests and the requirements of the workplace had become closely aligned. Anna’s participation continues to develop as staff change and affiliations of interest change in her workplace. So there is some evidence of associations between changes in work and participatory practices, which illustrate the dynamic social ecology of workplaces and what shapes engagement, participation and learning.

**Workplace participatory practices**

The data provide illustrative examples of how individuals’ socially-derived practices and workplaces reciprocally shape participation and learning. It supports the contention that participation, and the learning that arises from workplace participation, is premised on intentions. So while there will always be unintended learning, there is an intentional basis to workplace experiences. That intentionality arises from the kinds of micro-social processes identified above. Corresponding with the intentionality of the workplace (its affordances) is the individuals’ decisions about how they elect to engage in the workplaces. For example, the decision of Jim the grief counsellor to conduct face-to-face, rather than phone-based, grief counselling was a product of his earlier practice. This decision transformed the work of the counsellors and the work of others. Because clients were more frequently on-site and for longer periods of time and the behaviour of his co-workers had to change. Also due to the extended periods of face-to-face counselling Jim was less available to take phone calls that resulted in clerical staff having to take calls from distressed next-of-kin. Significantly, the counsellor’s change in work practice coincided with his movement from temporary to permanent employment. That is, the workplace afforded him permanency which provided the platform for him to exercise his agency. So, this change in practice illuminates a complex of factors comprising the enactment of the individuals’ agency, premised on the capacity for relative autonomous practice that arose from a change in employment status (a workplace affordance), yet which was of a kind not afforded to all other workers. In all, this single change transformed work practices, bases of participation and requirements for performance. This example of workplace participatory practice illustrates how opportunities for change, learning and development are distributed across the workplace. For instance, workers with less discretion (e.g. the administrations staff) may be subject to the changes of others and not be able to intentionally transform their participatory practices and learning, as others in that workplace were able. So, just as the teachers in the schools experienced a reduced level of technical support when the schools’ priorities for information technology changed, the clerical staff in the forensic pathology centre had to learn about Jim’s schedule and develop the skills to take call from distressed next-of-kin. This example indicates how, when the opportunity was afforded, the bases for the continuity of the individuals’ practice are exercised to ensure its continuity. These bases reside in its participatory practices.

In all three cases there was evidence of the exercise of individuals’ agency in shaping the organisation of their work. This agency was associated with preferences, beliefs and values – their subjectivities. Linked to these values is individuals’ subjectivity, how they view themselves in relation to the workplace’s activities and tasks. This subjectivity, like individuals’ goals and values shapes their agency. The exercise of personal agency, varied over time and circumstances, and for some more so than others. In this way, the study illustrates and elaborates the inter-psychological processes occurring through work as well as their distribution. Given that micro-social practices play such a salient basis in this analysis it may be timely to reconsider the social ecology of workplaces more fully (and perhaps revisit some of the earlier work in ecological psychology). As in Somerville and Bernoth’s (2001)
study, individuals’ subjectivity provides an explanatory principle for the direction and shaping of individuals’ agency. This agency appeared to be most exercised when there were threats to their subjectivity and identity, brought about by changes in the workplace, or where the individual had the opportunity to exercise that agency.

New activities for all three participants (e.g. considering responses to arising from the Anthrax scare, involvement in an on-scene disaster response, involvement in decision making about superannuation, implementing the SOS) led to significant new learning. These opportunities arose from events that were structured by workplace practices. They were not ad hoc or incidental. Instead, they were central to the workplace’s practice and were afforded by workplace circumstances. Some learning is likely to be unintentional on the part of the workplace (e.g. Anna’s learning about shifting power structures, Jim’s capacity to compare disaster-support incidents and Aden’s heightened sense of worth). Along the way they also elaborated on or refined their knowledge about work that had arisen through everyday work activities.

In conclusion, this initial analysis of the micro-social processes that comprised the three workers’ work activities and participatory practices, illuminates the multifaceted bases for participation in and learning through work. It also emphasises the complex array of contributions that shape microgenetic development (Rogoff 1990) – the moment by moment learning that occurs through engagement in conscious thought which draws upon historical precedents, cultural requirements, and situation contributions. So when considering learning through work or the development of a workplace pedagogy it is necessary to account for the relations between the kinds of micro-social processes that constitute workplace participatory practices and their consequences for micro-genetic development.

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