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Democratisation of Work through the application of Web 2.0 technologies

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ABSTRACT

Under the influence of Web 2.0 Work (purposeful directed action) is democratised moving it away from productionist metaphysics. Web 2.0 symbolises a cultural phenomenon summarised as a collection of emerging technologies and methodologies that, in the enterprise, provides for a shift in the asymmetric distribution of power such that the technological human has access to mechanisms and processes that allow greater participation in formative decision-making. The technological enterprise, through fostering Web 2.0 technologies, is able to offer the infrastructure the technological human can use to build its own social networks. This provides an opportunity for employee to invest emotionally in the purposes and intentions of the enterprise.

Keywords

Philosophy, Work, Taylorism, democracy, productionist metaphysics, Web 2.0.

INTRODUCTION

In this paper I argue that under the influence of Web 2.0, democratisation has redefined Work away from what was understood as productionist metaphysics. Democratisation of Work are shifts in the asymmetric distribution of power in the enterprise if the technological human has access to mechanisms and processes that allow greater participation in formative decision-making. To be successful, responsibility must be passed down through the enterprise and a high degree of autonomy.

THE TECHNOLOGICAL HUMAN

The human is said to be a social animal and, unlike other social animals, is a member of the genus hominidae that carries the characteristics of superior intelligence, articulate speech, and erect carriage. Strawson (1959) says the individual human is a substance that is both physical and mental. Ryle (1979) says it is a category mistake to make the assertion that it is the mind that thinks or the body that walks, but that it is the person of the human that both thinks and walks. James says it has long been understood that the human has an innate intelligence and a spiritual and soul dimension that sets it apart from the other creatures (Goodman, 2009). It is important to see that the human is a unity and that the human is the embodiment of personality, will, soul, spirit, mind, emotion, intelligence, and so on. Humanity is the essence of the human that carries forward over the whole of the range of human appearances. A dead human is a corpse and while it looks human it is absent of those other animating characteristics. A zombie is a corpse that is animated but lacks humanising characteristics. A cybernetic human is animated and attains most of the characteristics of a human but lacks the spiritual and soul dimension.

Gathering together in social groups allows humans to use their collective strengths and overcome obstacles. Humans form socio-cultural groups in which they co-operate with each other and form bonds. Humanity also includes the range of cultures that have become established in human social groups. Culture as a term is broad and often open to disagreement but a culture includes knowledge and values shared by social groups, religions, laws and legal structures, forms of governance, expressions through the arts, attitudes, behaviours, and the various techniques and modes of development and growth of all of these. A human is not culture but culture is human. Socio-cultural groups that humans form are societies and the socio-cultural group in which a human resides is its society.

Technology, as understood today, is the usage and knowledge of tools, techniques, crafts, systems or methods of organisation. The root of technology is found in the Greek *techne* and *legein*, which leads to *logos*, meaning to gather or to assemble (Zimmerman, 1990). *Techne* means both art and handicraft so technology relates to the disclosure of something and it's revealing. Technology is used to effect changes on the environment and having the ability to use technology has enabled the human to advance its evolution. It is a characteristic of the human that it uses technology to forward its aims and

intentions over the environment and to effect changes on its society (Winner, 1986). Technology is not humanity although humanity uses technology that is part of its cultural domain.

PRODUCTIONIST METAPHYSICS

From Zimmerman (1990) productionist metaphysics is the semantic distinction made between the ancient Greek 'production' and 'making' and 'production processes' employed in industrial technology. He brings into question the 'being' of humanity where, for the ancient Greeks, 'to be' meant that something was produced. Heidegger's beliefs, common for his time, are based on the ideal of the Fall of Man although Derrida (1978) says he failed to deconstruct the idea of a primordial epoch in which there was an immediate relationship between a primordial being and the human recipient. The conception that the human condition has moved inexorably from a point of purity (which reached its zenith with the ancient Greek philosophers) to a lesser state of being (represented by the nihilism of the twentieth and twenty-first centuries) and where modernity is the final stage of appearance for the West. Nihilism is the materialist perception that lays claim to the view "apart from my body there is nothing" (Masaryk, 1971, p. 42).

For the early Greeks the conception of producing something meant 'releasing' or 'freeing' some object from where it had been locked up, so that it could manifest itself and that production itself was primarily an instrument or some means to attain some human end. With industrialisation, Work became the means by which scientific principles could be applied in order to strip away the 'beingness' that hindered the manufacturing process, resulting in a dehumanised production environment. For Heidegger (1993) the use of *Dasein* (a term used widely in German philosophy to mean the 'existence' of something) refers to the kind of existence in which there is an attempt to disclose the thing's 'Being' and the destructive aspect of modern technology is directly related to the constriction of human Dasein's capacity for genuine caring. Alienation from this capacity is the worst kind of dehumanisation and leads to the most terrible crimes against humans and non-humans alike. Tannenbaum (1952) and Masaryk (1971) support this view, they both say that throughout the industrialisation of the West, it is the separation of workers from their communities that has caused the separation of the worker from their social and moral basis and it is this that provides conditions for violence, insurrection, and discord. This same movement can be observed in large parts of Asia that are presently undergoing industrialisation.

THE CONCEPT OF WORK

Smith (1937) said Work is the real price of everything. Work is the energy expended to cause something to be and to disclose its objective usefulness from its occurrence in its natural state to some other thing that is wanted or desired. As a human act, Work fulfils more than just an economic prerogative but is used to justify social and moral stances too (Masaryk, 1971). Work is a means by which a human can lay claim to the belief that they belong to something greater than themselves, a greater something that they might refer to as being more real, purposeful, useful or creative. The ends that Work provides are measured by the economic gain it provides, the sense of fulfilment afforded during the act of it, the facilitation of life's requirements, and the legitimisation of religious doctrine or utopian ideals. A child ought not to have a conception of Work. For the young child, learning, experiencing, and other activities are surrounded as play. When play is fun much can be learned but when it is no longer fun it becomes boring for the child. And in this learning process of fun/not-fun activity the child also learns what it wants to do or not.

Work is wholly part of the human agency and expresses its being; physically, emotionally, psychologically, spiritually. Work allows the human to attach to an industry in a way that is symbiotic. Work benefits the human by confirming their beingness and identity on the one hand, and it benefits the industry by providing the power to meet the challenge of storing and ordering of the standing reserve of data. The human is ordered and categorised through Work such that their efforts may be stored and redundant patterns can emerge. When those patterns do not match requirements, the number of humans may be increased or decreased as needed. The desire to treat humans as data reached its most extreme form in the West when the scientific method gave theorists, such as Taylor (1911), the opportunity to build a conception of Work where space and time were reframed. For the worker Work was their only reality, the time spent working or otherwise 'unemployed' and out of work (Heidegger, 1981). Work became work for the sake of more work (Zimmerman, 1990).

The modern human, the worker, is a technological human that works for a money wage, as Tannenbaum (1952) says, instead of seeking to provide for and facilitating life's essentials. The technological human is the by-product of the production process, whether we are talking about the displaced person who washes up on the shores of the industrial complex or Heidegger's artist. Zimmerman (1990) thus brings into question the purpose for which products are manufactured or the artist brings that art into being. He says that it is a feature of technological humanity that it tries to rationalise everything either through defining for everything a purpose or its use as an instrument. "Talk of producing as a 'freeing' or as a 'letting-be' makes no sense. Instead, to make something means to cause it to happen, to will that it come forth, in order to serve some

purpose within the technological system" (1990, p. 235). While for technological humanity there is a sense of completeness and security in knowing that all exists because it is meant to be, this masks a purposelessness in at least two respects: (1) In Heidegger's view the technological system has left behind the purposiveness characteristic of merely human projects. As the manifestation of the Will to Will, the technological system strives for ever greater production for its own sake. (2) The motivation for the remanufacture of artwork appears to differ whether we call it art or the product of an industrialised process. Zimmerman suggests that the artist is not motivated by the dollar value of their work and often masterworks reach their greatest value long after the death of the artist. He says the monetary value of artwork is incidental to its being.

The technological system derives the value of its parts from an economic model in which the value of an object is determined by its tradability and not from social, moral, or ethical attributes. The result of the transformation of the human from living a natural existence in which social, moral, and ethical values are highly prized to existing in the industrial complex has created a technological world that is artificial. However the technological world, which masks the purposelessness of 'production', means that those tasked with producing therefore have no purpose either. It is in this state of perpetuated production fulfilling the Will to Will that the technological human's sense of self in itself is abdicated. It is more important in the reality of the technological world to Work to enhance the power of the system than it is to contribute to the well being of the people. Therefore the technological human, to find any benefit in the technological world, must come to terms with the technological system.

PARTICIPATORY DEMOCRACY

Discussions by authors on the role of participation in the democratic process or democracy normally focus on the merits of participation versus leadership by an élite and whether or not increased participation weakens or strengthens qualities that denote a system as democratic. In most cases authors do not address sectors in society other than national and public bodies, and governments, leaving out private institutions since it is assumed that they will be autocratic by nature where democracy has no place. However Pateman (1970) describes a participatory theory of democracy that applies to industry and is referred to particularly on the basis that "democratic idealists have long envisioned a vital egalitarian society, and for them the Internet represents a means to implement classical participatory democracy" (Margolis & Moreno-Riaño, 2009, p. 18).

Contemporary theory of democracy is described as "a political method or set of institutional arrangements at national level. The characteristically democratic element in the method is the competition of leaders (élites) for the votes of the people at periodic, free elections... 'participation', so far as the majority is concerned, is participation in the choice of decision makers. Therefore, the function of participation in the theory is solely a protective one; the protection of the individual from arbitrary decisions by elected leaders and the protection of his private interests... Certain conditions are necessary if the democratic system is to remain stable. The level of participation should not rise much above the minimum necessary to keep the democratic method (electoral machinery) working... [and] any increase in participation by the apathetic would weaken the consensus of the norms of the democratic method" (Pateman, 1970, p. 14).

'Participation,' Pateman (1970) says, became popular in politics in the later part of the 1960's. The theory is applied to group phenomena such as Cole's Guild Socialism and to industry because, she says, it represents a small-scale political environment in which the principles of participation are observed through experiment. In the industrial or management context participation provides the opportunity to create conditions in which people are able to influence decisions that affect them. The degree of influence varies and can perhaps be viewed as a special case of delegation where a subordinate can gain greater control and freedom of choice relative to their responsibilities. McGregor (1960) says 'participation' is usually applied to the subordinate's greater influence within the superior's responsibilities. Participation may be process oriented where, according to Sawtell (1968), it is those processes non-managerial employees use to reach managerial decisions that affect their work and Lammers (1967) says that it is the legitimate upwardly oriented exertion of power by subordinates.

Schumpeter (1943, p. 242) summarises it as "a political method, that is to say, a certain type of institutional arrangement for arriving at political — legislative and administrative — decisions."

DEMOCRATISATION OF WORK

Democratisation of Work occurs if there is a shift in the asymmetric distribution of power in the enterprise. Power asymmetry exists between the technological human whose existence is within the artificial constraints of a hierarchical organisational structure and its authority. The technological human abdicated its responsibility to self when it chose to adopt a servile existence inside that of the 'systems' ' Will. It traded its will for a sense of security and paradoxically, independence. The apparent independence afforded to the technological human takes the form of seemingly major and important decisions when 'authorities,' outside of its control, make truly life-affecting choices.

Asymmetry in human relations takes various forms. Typically, it refers to differences in the power relationship between parties (say between management and employees in an enterprise), but from there it becomes more difficult to define because how power is perceived or exercised varies. Thus investigations will lead one through a maze of management, political science, sociological, and psychological domains, each of whom use their own epistemological frameworks and language to refer to similar naturally occurring phenomena in human interactions. That is, "under management's asymmetric power, cooperative practices paternalistically alter workers' descriptive perception of workplace reality or their normative sense of their own preferences and interests in ways that serve managerial interests. The proposition, in the argot of economists and cognitive psychologists, is that capital suppliers' managerial agents, acting either in the distributive interests of their principals or in their independent interest in managerial control, use their bargaining power to generate 'endogenous' changes in the 'preferences' or 'perceptual frame' of weaker contracting parties. Stated in the terminology of critical theory, employers exercise domination over workers through 'hegemonic' transformations in worker consciousness or ideology, either as an alternative or a supplement to coercive forms of control. In lay terms, cooperative schemes 'co-opt' workers. That is, such schemes do deflect workers' group choice over workplace governance modes, and in a systematic direction — away from the full collective bargaining that the New Deal policy equates with objective 'industrial democracy.' " (Barenberg, 1994, p. 762). Power asymmetries can be viewed across lines such as race, gender, class and position, access to authority and information, economic power, social and political influence, and degrees or lack of respect (Bowman & West, 2007).

Much of the driving force of asymmetrical power within an organisation comes from the need of management to ensure compliance for decisions that have been made. To make decisions palatable they are cast in "the dual language of instrumental discipline and non-instrumental consent or commitment" (Barenberg, 1994, p. 771). This was especially true in the 1930s, at the height of the machine age where the technological system was in its ascendency. Vallas (1999) refers to a manifestation of productionist metaphysics in industry as 'Fordism.' Taylorist principles had been universally adopted into the motor vehicle manufacturing industry in the United States by the second decade of the twentieth century and this created a technological system that had inculcated related industries. Prichard (1999) asserts, and is supported by Tannenbaum (1952), that the industrialisation of Western society produced anxiety in workers and that a defensive reaction against that was to pursue strategies of control that would secure the identity of the controlling groups. However the result was that, rather than the emancipation of mankind, power relationships that existed before industrialisation were reproduced within the framework of industry and enterprises individually.

It is a characteristic of human nature to order itself and its world into ranking systems and hierarchies. This characteristic is no less evident in the enterprise but the industrial system stripped the individual worker of their 'natural' place in society. Whereas they had lived by values related to their society, within the technological system ordinary meanings that make life acceptable evaporated. To fill the void, illegitimate means for the attribution of power advantages were built, such as the 'company union' (Barenberg, 1994). The industrial juggernaut destroyed societal frameworks so workers sought to form their own social units based on their occupational employment, these became 'trade unions.' The 'company union' was a reaction against these (although in some jurisdictions they are legal) and invoked practices that transformed workers' consciousness of what they ought to be interested in and desire, how they ought to react and behave, and how they ought to work to safeguard the future of the company (Barenberg, 1994). The principal aim of the 'company union' was to place the interests of management and worker in phase with each other.

If management seeks to put workers in phase with its decisions then it needs to have a means of controlling responses in given situations. Asymmetric information distribution has been used as a deliberate ploy in industry, for example Barenberg (1994) says the company union has been used to create a conditioned employee representative. The union representative is bombarded with company-biased information and arguments about workers' performance but at the same time making certain that the representative was well aware of their favoured status and apparent role of building solidarity. However the representative would likely also begin to regard themselves as part of the management team and its machinery through constant exposure on a cordial basis. To the representative, rank in a status hierarchy is addictive and since the effects of largesse wear off quickly, greater degrees of satisfaction are called for but the greater pain is loss of status. To assuage the pain the representative is increasingly likely to seek to find favour with management through the demonstration of information asymmetries over their peers.

That a condition of asymmetric power distribution exists between authorities and subordinates is not necessarily a function of coercion or normative consent (Barenberg, 1994). Compliance may just as well be a result of apathy, resignation, unconscious habit or custom, emotional patterns of coping or compulsion, or behavioural or psychic diversions and displacements. While it may have been produced from an abstract political stance taken by either the employer or the union, for example liberalism or socialism, it may also be the technological system's representatives expressing their demand to manifest its Will. In effect the result of "the pre-reflective dispositions and discursive performances, the inarticulate,

spontaneous practices and emotions that suffuse everyday experience" (1994, p. 813). With the loss of social context referred to by Tannenbaum (1952), Barenberg says that his views direct the focus towards the local social contexts that encompass the daily experience of the worker and mediates between them, the enterprise, and other individuals they interact with. He cites as an example the process of naturalisation in which a new subordinate is introduced to an existing context to find they must comply with its norms because of the existence of seemingly natural or inevitable practices woven into the fabric of Work.

Those who engage in Work are not a homogeneous group and are not fixed. The desires, interests, and perceptions of the human are plastic and multi-faceted. External influences are exerted upon it such as ethnicity, generational influences, family status, economic wellbeing, religious and civic institutions, popular culture, mass media and advertising, and political ideology. These serve to shape how power can be exercised both by and upon it, such that a group's opinions, desires, and will might appear changeable and indeterminate. This may be illustrated in an individual who displays indifference to, or apparently irrational or a-rational changes in allegiance in response to company attempts at social integration or communications (Barenberg, 1994). Such volatility is a natural state for the human.

The human finds security and safety in the non-disclosure of their true self, their feelings or intent, that which Barenberg (1994) refers to as 'ambiguity' and 'inconsistency.' Such behaviours are especially marked in settings of asymmetric power and information where the less powerful deliberately or unconsciously choose "ambiguous preferences and perceptions as a psychological defense against those with the apparent incentive and communicational resources to manipulate subordinates' preferences and perceptions" (1994, p. 871). The human has only had recourse to withdraw either themselves or their co-operation from the asymmetric power relationship between themselves and the technological system. The technological human on the other hand does not seek security in non-disclosure but in the expression of self-worth. In coming to terms with their place in the 'system,' the technological human brings into phase personal and Work life by creating a technological bridge of information flow. Their role in the enterprise shifts from one of abject subordination to active participation in the decision-making processes that provide governance to both themselves and the enterprise.

WEB 2.0 AS A MEANS TO PARTICIPATORY DEMOCRACY

'Web 2.0,' normally attributed to Tim O'Reilly and John Battelle (2009) but actually coined by DiNucci (1999), denotes technologies that facilitate activities on the Internet. Web 2.0 contains attributes of (Sutter, 2009): (1) Data are the driving force; (2) it has architecture of participation; (3) it favours open source development; (4) it involves content and service syndication; and (5) it introduces the concept of the perpetual beta. It has these features and applications (Grace, 2009, Sutter, 2009): (1) *Wiki*, a democratic, accessible community of users responsible for its own content, supported by an open model of knowledge creation and communication; (2) *Blog* in which entries are made in the style of a journal; (3) *Really Simple Syndication* (RSS) allows for the aggregation of changed content of different websites; (4) *Social networking* takes many forms and may include file sharing and peer-to-peer networks, post ranking systems, friends lists, social bookmarking and linking, and the sharing of links, articles, and lists; (5) *Mashups* are the 'mashing' together of two or more web services or web-based applications.

The concept of 'Web 2.0 as a platform' serves various groups in differing ways, for example it is a platform for business, communications for marketing, new media distribution for journalism and entertainment, and software development for developers (O'Reilly, 2005/2009). As such it can be said that Web 2.0 symbolises a cultural phenomenon that Tenenbaum (2006) summarises as a collection of emerging technologies and methodologies that make the Web more participatory, semantic, and real-time.

Kim, Yue, Perkins-Hall, and Gates (2009) say that users experience six key features on numerous Web 2.0 applications: (1) *Participation*, in which an application or service is designed to improve or facilitate user participation and at the same time lower barriers to use; (2) *collaboration* that is similar to participation with the distinction that users work together with a common goal or aim in mind; (3) *Social networking* that builds on the concepts of participation and collaboration in order to fulfil social and cultural norms; (4) A *rich user experience* in which the success of Web 2.0 applications is closely tied to the ease with which the user can interact, share, and access Web content and facilitated by the common use of scripting and programming languages; (5) *semantics, consistency and standardisation of terminology* are important to enable a rich user experience where a logically structured system is essential to the success of Web 2.0 technologies to facilitate organisation, management, and relationships between data; and, (6) *interactivity responsiveness* so that with increased complexity in web-based applications there is an apparent drop in waiting time experienced by end-users.

Under productionist metaphysics the technological human is absent of decision-making power but participatory disclosure (production) via Web 2.0 technologies provides a means of emergence into a greater freedom. The technological human recaptures a sense of its social self when it can renegotiate moral and social boundaries, and regain the power to make decisions about factors that affect it. The process of making decisions is further enhanced when there exists a heterogeneous

citizenry in which there exists a range of attitudes, experiences, and abilities. This provides a stable and flexible system in which partisan loyalties remain somewhat fixed but change occurs when people or policies exert forces that are onerous (Berelson, Lazarsfeld, & McPhee, 1954).

Eckstein (1966) promotes the inertial effect of productionist metaphysics when he says that economic organisations are an example of the type of government that are too removed from democratic principles and must stay undemocratic, authoritarian, for fear that changes that result from the democratic decision-making process may lead to "consequences no one wants" (1966, p. 237). This fear, the fear of the unknown, stimulates enterprises to restrict access to Web 2.0 technologies, for example Dennison's (2007) report on the initial resistance met at British Telecom when social media was trialled. Eckstein (1966) says that for a graduated democracy to remain stable there must be a healthy element of authoritarianism in its makeup because effective decision-making can only occur when it is present. The second argument he makes in this regard is that people need firm authoritarian leaders and leadership. In the Web 2.0 space this role may be filled by site moderators or corporate bodies tasked with monitoring functions. While Web 2.0 appears to support both democratic and authoritarian leadership styles, it is its support for participatory democratic processes that is of particular importance.

Rousseau (1968) says that for a participatory system to be successful certain economic conditions need to be met:

(1) *a*. There needs to be a society in which its members exercise economic equality and independence, for example a community cloud infrastructure has shared ownership that reflects the nature of the activities associated with it, such as SETI (Mell & Grance, 2009). *b.* Differences in economic equality should not be to the extent that political inequality results, such that social networking sites take many forms (Sutter, 2009) and their equalising property lies in the each person having access to the Internet. *c.* Each person should own some property because this affords security and independence, while the issue of property rights is not yet resolved on the Internet with a large range of ownership provisions for data and content, having the ability to add and control data through all Web 2.0 applications provides the perception of contributory ownership.

(2) The members of society need to be interdependent, yet equal and independent which describes accurately the relationship between participants in the Web 2.0 space where the success of applications exists because of the participation of individuals (for example, Majchrzak, Cherbakov, & Ives, 2009; Dennison, 2007; Kane & Fichman, 2009).

(3) Voting by independent equals provides a situation in which no one need vote for any policy in an assembly where there is no advantage for themselves when compared with the advantages that might be gained by others. Thus policy that is accepted is done so on the premise that it is acceptable to all and any benefits and burdens are shared by all and therefore is always just. The implication is that no one need vote for anything that does not hold the potential for personal gain and may be found in internal business applications that are related to internal activities and focus on improving business processes by delivering productivity gains, innovation, teamwork and employee relationships, and helping to make better decisions (Murugesan, 2007).

(4) While there would be tacit associations linked by common interests, ideally there should be no groups present in the decision-making process, just individuals. However, in a situation where it is impossible to prevent such a formation then there should be as large a number of groups as possible to dissolve their respective influence. Dennison (2007) questions whether the concept of the 'wisdom of crowds' will work with a smaller population of people such as that found in the enterprise, or that the result may be unbalanced opinion rather than 'truth.' However participants collaborate together with a common goal or aim in mind, where wikis are a common example, and social networking builds on the concepts of participation and collaboration in order to fulfil social and cultural norms. Social networks are built to facilitate the establishment and maintenance of social connections both in private, public, and work oriented situations (Kim et al., 2009).

How does one exercise effective participation? Dewey, Rousseau, and Pateman answer that it is the system that ought to develop responsible individual, social, and political actions through the process of making effective decisions. Particularly for Rousseau, the key to the success of this is through education wherein the individual learns to take into account factors that are greater than themselves and that to gain the co-operation of others the individual needs to see that their private interests are linked to those of the public.

Once a participatory system of democracy has been established it then becomes self-sustaining because those attributes and qualities that are required of the individual that ensure the success of the system are the same as those that the process of participation develops (Rousseau, 1968). For the educative process of participation to be successful the individual needs to be able to exert some control over both themselves and others, and for this to be effective there must be a degree of freedom. "The individual's actual, as well as his sense of, freedom is increased through participation in decision-making because it gives him a very real degree of control over the course of his life and the structure of his environment" (Pateman, 1970, p. 26). To that extent the individual might be forced to be socially responsive where they are 'forced to be free,' that is they may be obliged to exercise control in Web 2.0 applications over their peers, perhaps by exercising social rules and mores.

Nevertheless, participation in the process enables the individual's increasing the value of their freedom because it enables them to maintain self-mastery, but within the self-imposed constraint of moral codes, etiquette, and rules developed for specific sites. As the individual becomes more involved in participation, they learn to be better participants in the process.

The functions Rousseau (1968) ascribes to participation, that it forces the individual to deliberate on matters and forces them toward freedom, then derives a third function as a result of these two. Participation provides a means of social integration, that the individual gains a sense that they belong to something greater than themselves; a sense that one experiences when engaging in social media applications. This integration removes considerations of class and social or economic status much like Dewey's 1927 conception of the Great Community, a theory in which the aim of a democratic government is to pursue the common interest of the public (MacGilvray, 2010).

The strength of the Open Source community is reflected in the perception that public(s) consist of all "those who are affected by the indirect consequences of transactions to such an extent that it is necessary to have those consequences systematically cared for" (Dewey, 1981–1991, p. 245). Bohman (2010) explains that the members of a public are not the direct participants, those who have full self-awareness engagement in some collective enterprise, but those who are affected indirectly by the consequences of the actions of social and political arrangements. That is to say, the members of the public have no authority or power within their domain. Whenever the individual works on behalf of the public they become a part of the Great Community. The individual is made to feel that "not only [is] the common weal . . . his weal, but that it partly depends on his exertions" (Mill, 1963, p. 230).

Mead (1934) displays certain optimism at the possibility that the application of democratic norms and ideals in large publics and that those who cross national boundaries will be able to solve problems. Presaging the Technological Age he asks whether a conversation might be conducted internationally and that such a question is one of social organisation. On the other hand, Dewey does not see that a substance akin to the technological human would be successful in establishing a society that does not have a localisation of geography or consistency on societal makeup as its properties. He points out that the primary purpose of any public is to recognise itself as a public, having one that is international in makeup presents obstacles and barriers to that possibility from actuating. "The [technological] age has so enormously expanded, multiplied, intensified, and complicated the scope of indirect consequences, formed such immense and consolidated unions in action, on an impersonal rather than a community basis, that the resulting public cannot identify and distinguish itself" (Dewey, 1981–1991, p. 314). For this view, Dewey entails the technological system and productionist metaphysics.

For Mill (1965) the individual has the opportunity to gain experience in the management of collective affairs in the same way they are exercised in local government. He says that real value is to be found in socialism and co-operation and especially as a means of education. Voluntary organisations in small communities that replicate national applications of principles accommodate widespread and disparate participation. The benefits, when extended to a co-operative industrial organisation, include: (1) A 'moral transformation' of those who take part which would lead to an increase in production; (2) friendly rivalry in the pursuit of a common good; (3) elevation of the dignity of labour; (4) renewed sense of security and independence in the labouring class; and (5) the transformation of the person's occupation from being merely a job to an opportunity to learn about socialisation and matters of practical intelligence. To an extent, Mill considers the role the industrial organisation can play is similar to that of the government in teaching the individual about social responsibility. Principally he sees that in the modern world the fundamental relationship between the employer and employee has changed so that what existed previously would no longer be maintainable. For this to be possible "the authority relationship would have to be transformed from the usual one of superiority-subordination (managers and men) to one of co-operation or equality with the managers (government) being elected by the whole body of employees just as representatives at the local level are elected" (Pateman, 1970, p. 34–35).

This utopian perspective, while fundamentally changing the purpose of Work, as a function it remains the same. Work moves out from under the aegis of productionist metaphysics and, as a democratic process, becomes educative and enriching for the individual and the industrial organisation on the one hand, and it gives the labourer greater control over both those factors that they can influence, and that influence them, on the other. Bohman (2010) adds that Mill argued for citizens' to be given the opportunity to deliberate on matters that affect them, and by doing so they build knowledge of their current situation and commonalities between them. The discourse that results does not require that they should renounce concrete identities and opinions.

Cole's (1919) social and political theory builds on Rousseau's argument that it is will and not force that forms the basis of organisations. That means people must co-operate if their needs are to be satisfied and for actions to be just, that is to not infringe upon the freedom of others, and people need to participate in the organising and regulation of their associations. Indeed, Pateman says his is a theory of associations such that society is comprised of them and the individual must be prepared to participate in all those they are part.

The purpose that Cole (1919) finds for associations is through the principle that democracy is itself manifest only through its function and purpose. It is through the assignment of functions throughout society that the individual finds understanding of the whole system, a state which cannot be achieved if the individual can only take recourse via a representative or mediator. Pateman (1970) makes the point that the individual needs to be able to participate in all those associations that concern them, and for this to take effect democracy must be participatory. However Cole also says that it is in industry that the average person spends the greatest amount of their time and effort and in this arena they are taught to be subservient to their superiors through their daily occupation. The circumstances of their lives lead them to be unfit for power or responsibility and this reflects in society as a population that is politically servile. Thus productionist metaphysics provides for the technological human the training for it to be dependent upon the 'system.'

How is it that the technological human who has been taught to be subservient can then turn around and be self-governing? Cole's (1919) reply is that if industry were organised on a participatory basis then the effort expended on teaching staff to be servile could be equally spent on training them for democracy. For example IBM implemented social networking tools to keep its huge number of employees connected at a time of changing demographics in the company. There are three distinct generations of workers: mature workers who feel comfortable with using email as their main means of communication, mid-career workers comfortable with using instant messaging, and new generation workers who are not only comfortable with using social networking tools but come with the expectation that they can use those tools to connect with others. Social networking tools were adopted to bridge the generational gap between the newest and more senior workers (Majchrzak et al., 2009). But the most important motivator for the adoption of social networking tools was that they facilitate innovation through collaboration, and that is a key strategic and tactical driver for the company. The tools enable collaboration across time, distance, function, and interests.

Cole's principal objection to the capitalist organisation of industry is that it represents the productionist metaphysical notion that labour is no more than a commodity and the individual is denied their humanity. The incorporation of Web 2.0 applications in the enterprise provides the opportunity for participants to engage in Work and build socially supporting culture with moral and ethical values. For example, Majchrzak et al. (2009) say that factors that have contributed to the success of social networking tools at IBM (amongst others) were that they promoted a culture focussed on employee outcomes, in particular innovation, rather than monitoring activities and as a result it has been integrated into IBMs core business strategy with a focus on innovation through mass collaboration.

Under his participatory system, first the structure would be flat and all having equal rights of decision-making. Leadership would be provided on the basis of a representative function (Cole, 1919). For example, Kane and Fichman (2009) take issue with the current peer review process, which they say, while largely automated and online, still follows the previous paper-based process. A wiki-based process, they say, would allow editors to make better informed decisions if reviewers can respond to each other's comments, the period of open dialogue is a better use of the reviewers' time in deciding whether to accept the submission for publication and what might be suggested for improvement, and the interactive nature of the process would allow the editor to leverage the social nature of the environment to improve the review process as a whole.

Therefore for a democratic polity to exist it is also necessary for all political systems to be democratised and, Pateman (1970) says, industry is the most important area of a participatory democracy since that is where people spend most of their time and the opportunity to provide education is unparalleled. Pateman identifies three senses or forms of participation from empirical evidence she has investigated: (1) Participation as control — the impact of different Work situations affects the psychological orientation expressed by individuals and is a crucial variable in how much control they are able to exercise over their own job and their job environment; (2) participation as satisfaction — worker's satisfaction with their job is found to correlate to levels of morale, efficiency, and productivity; and (3) increases in participation — for example, job enlargement programmes are designed to broaden the boundaries of the individual's job and increases in decision-making opportunities to give them more autonomy over factors that affect their conditions and productivity.

CONCLUSION

The technological enterprise of the future relies on the loyalty of its employees; it requires its employees to make an emotional investment in the success of the enterprise but this must be given willingly and within the technological human the anarch exists (Jünger, 1994). While the technological enterprise must employ management practices to achieve its goals, it still needs to acknowledge the value of human socio-cultural objects and the provision of supporting infrastructure.

Productionism has shown that monetary reward is not sufficient to satisfy the requirements of people. Remuneration is only the medium of exchange that compensates for the time that is given over to Work. It does not compensate for loss of socio-cultural integration or the dismemberment of community values. The technological enterprise, through the fostering of technologies, is able to offer the infrastructure the technological human can use to build its own social networks. This

becomes as valuable as remuneration and provides an opportunity for the employee to invest emotionally in the purposes and intentions of the enterprise.

Therefore, where industry is held to be the most important area where participatory democracy can be used as a vehicle for the education of workers to have greater decision-making powers, and Web 2.0 entails infrastructure, functions, and features that permit of participatory democracy, and participatory democracy entails a shift in the asymmetric distribution of power. Then the introduction of Web 2.0 technologies into the industrial enterprise can result in the redistribution power because workers are provided with the means to have a greater say in Work. Thus how Work is managed changes under the influence of Web 2.0 applications, and the decisions that are made, being made through channels of participation and deliberation, also change Work itself. Work becomes more a socio-cultural construct, in the form of the community, than the artificial by-product of the technological system.

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