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Cognition in a Hierarchy

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To contribute to the organizational turn in research on participatory democracy, this paper examines the effects of organizational hierarchy on individual thinking. Power corrupts, but neither political scientists nor psychologists can really tell us *how*. To identify mechanisms by which it does so, the paper introduces recent advances in the field of cognitive psychology, here to suspicious political theorists. The study of cognition shows that we actively make meaning, and that we do so with a discernable neurological apparatus. The paper presents hierarchy as a social construct that 'fits' this apparatus in such a way as to assist the capture of meaning by the interests of power. This process of capture takes place beneath individual awareness. For this reason, the concern here amounts to ideology critique: specifically, using cognitive psychology to reveal the ideological propagation of hierarchy. The fact that hierarchy has hidden cognitive costs has important implications for the prospects of a more participatory democracy. Any democratization of organizational life is seen to turn on the capacity of participants to selectively use and manage hierarchy and to minimize its cognitive costs. This entails, among other things, a recovery of our own thinking from the knowledge processing requirements of power saturated hierarchic organizations. In its examination of the personal effects of power, the paper seeks to reveal psychological mechanisms by which power corrupts, and by which, inadvertently, we come to serve the interests of power in the very way we think.
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Hierarchy is a remarkably common organizational form. It has a long and distinguished history and presents a set of well-known management difficulties. These include the likelihood that power will become concentrated in the hands of the few (Michels, 1958) and that those few will become corrupt (Acton, 1887). Moreover, a hierarchy will often be maintained and defended well beyond its actual effectiveness (David, 1975), leading to a stuck organization that actively resists learning. Such management difficulties led the early liberal and representative democracies to insist that political authority be regularly

legitimated by informed popular consent, state powers be separated and the duration of public offices be fixed.

For democrats of a more participatory and deliberative persuasion, and living in a very different world, the need to manage the negative effects of hierarchy now moves to the organizations of everyday life. In face-to-face groups, teams and associations, there are pressing needs for both coordination and personal autonomy. Here also, hierarchies must be evaluated, tyranny resisted and corruption by power monitored. The democratization of organizational life thus turns on the capacity of participants either to reject hierarchy, or to use it selectively, whereupon it requires careful and conscious management.

Despite its prevalence and its evident tensions with democracy, we know surprisingly little about hierarchy, and still less about how it affects our individual thinking. For example, power corrupts, but social scientists cannot tell us *how* (Kipnis, 1972, 1976; Keltner *et al*., 2003, 266). Evidently, it is a subtle and insidious affair, for it can take place beneath individual awareness and affect even those who swear they are immune. Similarly, psychologists study obedience, yet it remains unclear whether subordinates somehow collude in their own oppression; let alone *how* this might occur (Scott, 1990; Mbembe, 1992; Prilleltensky and Gonick, 1996). So complex are the ontologies of social structure, of individual personality and of power itself (Foucault, 1980; Lukes, 2004; Scott, 2001), that current social scientific knowledge struggles to inform the democratic management of hierarchy. Indeed, the smart thinking is now that power is not just 'power over', but that it is also *productive* of subjectivity. Forever circulating, power can never be 'removed' — as though surgically — from our thinking (Rose, 1993; Connolly, 2002). To inquire into the effects of hierarchy on individual thinking is thus to confront all the dimensions of power, all the subtleties of ideology and all the complexities of false consciousness. Even where political theory does analyse the effects of power on participants, as do postmodern, postcolonial and psychoanalytic approaches, little clarity emerges in regard to the actual *mechanisms* by which it corrupts and still less what might be done to counteract it.

This paper analyses the personal effects of hierarchy. To do so, it uses recent advances in the field of cognitive psychology. Though interest in neurobiology and the 'cognitive revolution' is growing across the social sciences, suspicion of psychology in general and cognitive science in particular has resulted in a failure to use its explanatory tools (Turner, 2001) and a lack of critical engagement with its methodological assumptions (Clegg, 1994; McIntosh, 1998; Schneider and Angelmar, 1993). Cognitive science shows that humans process knowledge; they actively *make* meaning, and they do so with a discernable neurological apparatus. The paper introduces two areas of

cognitive research: schema and bias theory, which it uses to examine the effects of hierarchy on the thinking of participants.

The argument presented here is that hierarchy is a social structure that 'fits' the structure of individual cognition in such a way as to assist the capture of meaning by the interests of power. This has important implications for deliberative democrats, and for how a more participatory democracy might 'self-organize'. Only when the cognitive costs of hierarchy are visible can the institutionalized asymmetries of power that surround us be properly interrogated, minimized and managed. Our concern is thus to consider how, as participants in a hierarchic organization, our very thoughts get used.

The Power-Divide in Hierarchy

Hierarchy is institutionalized power, a frozen set of relations, a congealed difference of status. Organizationally, it features ordinal layers of structure (Chandler, 1962; Marglin, 1978; Radner, 1992, 1390) and interpersonal interactions characterized by marked asymmetries of power. Hierarchy is a social construction. It is the product of communication between individuals. Yet so does it act back upon its producers (Berger and Luckmann, 1967).

Hierarchy affects its participants in a variety of ways, though one significant variable is clearly that of relative rank and role (Lenski, 1984; Thompson *et al.*, 1996). Social psychologists and those who study the psychology of oppression often describe power relations in terms of those who have power and those who do not (Keltner *et al.*, 2003). Similarly, political scientists and sociologists have distinguished between dominance and subordination. This distinction is heuristic, and serves to begin rudimentary analysis. So too is the distinction synchronic, for it freeze-frames what are complex, layered and dynamic power relations. Its purpose is to provide a working analysis of the complexities of conflicting status roles. Certainly, a more dynamic and diachronic view would reveal the Janus-faced nature of hierarchy, with its offer of rapidly changing roles of dominance and subordination. Yet, the synchronic conception of dominance and subordination can serve to illuminate the effects of hierarchy on how we think, and how individuals with the same cognitive apparatus can be so differently affected.

Classically, Hegel's dialectic between the master and the slave, presented in the *Phenomenology of Spirit* (1977, 115–118), shows how the divided perspectives of dominance and subordination affect individual thinking, and how they do so in different ways. One such difference, according to Hegel, lies in what each party needs to know. For the master, knowing about the individuality of the slave is of little importance. The stability of the hierarchy does not require such knowledge, and there is much room for the master to 'exist only for himself' (Hyppolite, 1974, 173–174; Hegel, 1977, 116). Where

such self-indulgence evades adequate control, the master becomes corrupted by power. For Hegel, however, corruption takes the form of a growing dependence, here of the master upon the slave (Lauer, 1982, 107–109, 113, 119). The master must carefully inspect the eyes of the slave for the recognition of his power that he craves (Hegel, 1977, 116). Their experience has divided in two; broken, indeed, by the master's occupancy of a higher-status role. From the slave's perspective, it is of considerable importance to have good knowledge of the master, for without it the slave will not survive. Hegel thus states that 'servitude has the lord for its essential reality' (Hegel, 1977, 117).

The claim that subordinates need the greater vigilance is reflected in an array of modern psychological research (Keltner *et al*., 2003, 269). Thus, for example, Snodgrass *et al*. (1998) have attributed women's greater ability to read non-verbal communication to their relative subordination, while Depret and Fiske (1993) have shown that high-status individuals are more likely to use stereotypes in their judgment of others.

Rousseau (1984) also recognized that hierarchy affected the dominant and subordinate in different ways. In his examination of elite corruption, he describes a gradual process of self-inflation and personal aggrandizement. Princes slowly increase the estimation of their own importance and at last come to see their self-interest (their 'particular' or 'corporate' will), as paramount. This results in a diversion of collective action away from the collective interest, a mission-drift, and is one reason cited by Rousseau for demanding that hierarchies should be carefully constrained and actively managed by a vigilant republican citizenry. Yet power also corrupts the citizenry, and for Rousseau, their loss of autonomy is both a physical and a moral weakening. Steeped in the history of civic republicanism, he sees a corrupt citizenry as one that is unable to manage hierarchy, or even to perceive its negative effects. Such corruption brings dependency and suffering — a condition Rousseau bluntly equates with slavery.

The hierarchic organizational form thus influences us personally, and does so in different ways, depending in part on one's location and perspective. Hegel and Rousseau suggest that corruption somehow involves a reorientation of collective activity towards the psychological needs of elites. Both stress the importance of a psychological element in the corruption by power, yet they balanced this element with an understanding of social and cultural processes. Neither could draw upon established psychological research, so that even as they pioneered their own conceptions of human consciousness and evocatively described individual corruption, they could not tell us *how* power corrupts. For this would require the identification of psychological mechanisms. At the same time, these mechanisms must be seen to be in dynamic interaction with other, more social, processes, if they are to avoid psychological reductionism and determinism. Finally, the differential effects of hierarchy require us to examine what are *both* universal capacities and distinct individual perspectives.

Hierarchy divides; it separates. Its participants experience different meanings on either side of what might be termed the 'power-divide'. The power-divide is one of perspective; it differentiates the experiences of dominant and subordinate parties and allows us to investigate the distinct ways each is affected by hierarchy. With this in mind, we turn now to recent developments in cognitive psychology. Can this burgeoning field of research help us understand the subtle and complex ways in which we are corrupted by power? Can it help democrats notice when their thoughts are not their own?

Sharpening Cognitive Tools

Cognitive science now dominates the field of psychology, but its claim to species-wide individual structures of information processing remains methodologically distasteful to many social scientists. The identification of universal tendencies to think in certain ways smacks of determinism, while the claim to experimental verification seems shallow and positivistic. Such criticisms may be valid, but they tell only half the story. There is *both* nature and nurture, material and cultural, individual and social — and much between. Cognitive science certainly does suffer from epistemological delusions. It is beset with a limiting methodological individualism that pays insufficient attention to relations of power (Pfeffer, 1997; Connolly, 2002). Nevertheless, it offers empirically verified tools with which to analyse individual information processing, the social construction of knowledge and the effects of organizational structures on how we think.

Already hugely successful in its own field, in human-computer interfacing and the study of artificial intelligence, cognitive psychology is increasingly expansionist. Anderson (1995, 3) states that it, 'studies the foundation on which all other social sciences stand', and so should occupy a role akin to that of physics in relation to the material sciences. Similarly, Turner (2001, 11) likens the current status of social scientific explanation to that of biology prior to the discovery of genetics. The charge here is that social scientists do not engage sufficiently with the current revolution in cognitive psychology (Schott, 1991, 55; McIntosh, 1998; Ramachandran, 1998; Stein, 1997, 729), and so fail to identify the mechanisms that underlie their (merely) functional explanations of social phenomena (Elster, 1983; Douglas, 1986).

Cognitive psychologists see the human mind as an active processor of information. Bathed in a 'buzzing-blooming confusion' of sensory input (James, 1983), the extraordinary trick of human consciousness lies in its capacity to *reduce and select* data, to 'narrow and concentrate, rather than to expand awareness' (Schott, 1991, 58). Cognitive psychologists are particularly interested in the duration of information processing tasks, in other words, in the tiny yet measurable delays that occur between the reception of data and the

generation of meaning. It is within the duration of this delay that we actively work on selected data. While behaviourism asserts that nothing of interest takes place between stimulus and response, cognitive psychology sees us as active makers and constructors of meaning. What appear as simple acts like walking or talking here emerge as impressive, and largely hidden, triumphs of information selection, processing and integration.

It is important to be clear about what is being claimed here. Cognitive psychologists assert that individuals *in fact* (always, everywhere) go through certain (structural) stages of information processing. Although extremely fast, each stage is of discernable duration and can be measured empirically in the laboratory. The first stage of cognition is a *general sweep* of available sensory data. The second is an *initial cut* of data deemed irrelevant. The third is a more *detailed inspection* of the data that survived the initial cut. The fourth is the *active integration* of the selected data into usable knowledge and meaning (Kahneman *et al*., 1982; Stein, 1997, 731). The stages by which individuals process knowledge reveal just how much active work is required to wring meaning from 'raw' sensory data. We are by no means passive recipients, nor blank slates. We are *active makers* of meaning, constantly operating on, sorting through and adding to, the data we receive.

Of course, the existence of species-wide cognitive tendencies tells us nothing about the specific contents of individual minds. Though we may share certain characteristics in our neurological apparatus, the *products* of individual cognition are wildly diverse, historically and culturally situated, personalized, embodied, emotive, inherently perspectival and often shaped by power (Connolly, 2002, 7–8). Species-wide tendencies, therefore, do not determine our thoughts. Biology is not destiny. Yet neither should we imagine that our long evolutionary history has not left its mark on the human genome (McIntosh, 1998, 558; Connolly, 2002, 203). The challenge here is to consider the universal and the particular in dynamic interaction, to think two things at once, or more. Innate cognitive structures should thus be conceived as 'empty' and 'thin' universals (Sperber, 1985) and as tendencies rather than biological necessities. In this, they resemble human legs, in that species-wide similarities of structure and quantity (almost always two) do not result in all of us walking to the same destination.

The second stage of individual cognition, the 'initial cut', selects and highlights relevant sensory data. Evidently, this selection requires selection criteria, and these must exist *prior* to the encounter with the raw data (Augoustinos and Walker, 1996, 169). If there is a process that determines what we will attend to, then it must be pre-attentive (unconscious or pre-conscious). As Evans observes 'subjects are aware of that to which they are attending, but *not* of the selection process directing their attention' (1989, 16, 92–93). The process by which cognition descends beneath awareness is termed 'automation'

(Augoustinos and Walker, 1996, 67; Keltner *et al*., 2003, 279), and we observe it, for example, when we realize we have just driven through a complex road junction without conscious attention. Automation serves to reduce cognitive work and speed processing time. It involves the learning of selection criteria, the social origins of which are then forgotten, and the products of which subsequently appear in consciousness as common sense (Augoustinos and Walker, 1996, 52, 166–168, 178). So effective is this loss of awareness that we are quite capable of learning without knowing we have learned (Evans, 1989, 94).

In individual cognition, then, the heuristic selection of data takes place beneath awareness and uses pre-existing selection criteria. Cognitive psychologists have advanced and empirically tested a number of hypotheses to explain how these selection criteria work, but all share a reliance on some kind of generic template which the mind holds prior to exposure to the data, and which functions to extract and classify data into broad types. Whether 'models' (Johnson-Laird, 1983; Schott, 1991, 60), 'chunks', 'semantic networks', 'cognitive or mental maps' (Lawrence and Lorsch, 1967; Thau, 2002), 'scripts' (Schank and Abelson, 1977), or 'schema' (Bartlett, 1932), these templates are themselves products of prior experience; they are knowledge, learned and stored.

Thus, for example, schema theory holds that we carry general and abstract knowledge in category-like blocks, and that the initial data sweep proceeds as an attempt to find the appropriate generic block into which specifics can be inserted (Turner, 2001). We thus have schema for greeting another person, for getting into a lift, for eating a meal and, indeed, for the full range of everyday events, objects and activities. Schema function to pick out relevant, 'schema-consistent', data from the rush of information we regularly confront. As such, they are pre-existing selection criteria that manage cognitive overload and enhance the capacity to solve problems. Experimental evidence confirms that processing time is reduced when incoming data is schema-consistent, and that schema-inconsistent data tends to be filtered out and ignored (Augoustinos and Walker, 1996, 171).

Individual structural tendencies towards selectivity and automation mean that we often cheat in our construction of knowledge; regularly fooling each other and almost always ourselves. We evince a whole series of structural biases in our cognition, and these have been extensively studied. Research shows that these biases are not merely due to a lack of information, nor to too much information, nor even to insufficient processing time (Evans, 1989, 23, 41, 50, 98). Human cognitive biases are not really *processing* mistakes at all. Rather, they are by-products of a cognitive apparatus that is structurally oriented to selectivity and automation. We will here inspect three kinds of cognitive bias, those of confirmation, affirmation and reification.

The first tends us towards confirmation of our existing knowledge. Confirmation bias arises when we try too hard to avoid cognitive work and fall back on existing automated schema. Numerous empirical studies show our strong tendency to seek evidence that validates our prior beliefs, and in the laboratory, we can be readily induced to adopt a hypothesis, collect data that confirms it and to *fail to notice* data that suggests our hypothesis is wrong. Even when pressured with contradictory evidence, we still prefer to moderate our existing position rather than to generate a new one (Evans, 1989, 44). Individual cognition is thereby biased towards the automated confirmation of existing beliefs. There are significant benefits in cognitive repetition. Confirmation bias reduces cognitive work, increases processing speed, gives empirical validation of beliefs and stabilizes the knowledge environment. It can also lead to complacency, to a loss of responsiveness and thus to a chronic failure to learn.

A second type of cognitive bias serves to affirm our existence and amplify our personal importance. Affirmational bias produces false and self-flattering beliefs about our own cognitive processes. It can take the form of a consistent overestimation of what we know (Evans, 1989, 97), and a general over-confidence in our reasoning and judgment (Evans, 1989, 109). For example, we regularly imagine, with hindsight, that our powers of prediction were better than they really were (Evans, 1989, 99), and in the widely researched 'fundamental attributional error', we consistently claim credit for success and deny responsibility for failure (Augoustinos and Walker, 1996, 90, 170).

Affirmational bias is compatible with, and should be studied alongside, psychoanalytic notions of ego-defensive (Freud, 1961) and esteem-building strategies (Kohut, 1971), for it concerns the slightly rose-tinted glasses necessary for human agency to flourish in a time-bound and uncertain world. Lewinsohn *et al*. go so far as to suggest that normal human functioning is characterized by an illusory 'warm glow' in which 'one sees oneself more positively than others see one' (Augoustinos and Walker, 1996, 93). In empirical experimentation, the most accurate self-appraisals of cognitive performance are by people who suffer from depression (Augoustinos and Walker, 1996, 93). The affirmational bias is thus a kind of automated overconfidence that assists the ego, accentuates surety and motivates agency. Though overestimating our own capacities can sometimes impede our judgment, for the most part, the affirmational bias helps us join the world.

The cognitive biases we have so far considered each illustrate our tendency to routinize and habituate, to defend and settle back into what we already know. Before considering a third kind of bias, it is worth noting that research in cognition repeatedly identifies a strongly conservative agenda built into the very neurological structure of our knowledge processing apparatus. This is not to say that we cannot learn, only that we mostly avoid doing so if we can. We

are, of course, not *merely* shirkers of cognitive work (Haslam, 2001, 19), or, as many researchers have suggested, 'cognitive misers', (Broadbent, 1958; Kahneman, 1973; Clegg, 1994, 467). We are also highly responsive to change, hardwired to be interested, able to relate to others, to invest energy and *do* cognitive work. Evidently, schema and bias theory struggle to explain the bold fact of human learning. They cannot account for the ways in which children fall in love with the world, or why adults strive despite their mortality. Individual cognition is somehow oriented to both stability *and* change, to laziness *and* learning, to stasis *and* disturbance (Deleuze, 1994). Once again, there are at least two sides to such a story.

We should also note that the notion that a portion of our cognition is material and universal has been a constant source of confusion in social scientific analysis. In debates around the nature of language (Chomsky, 1972), between structuralists and poststructuralists, between Habermasians and Foucauldians (Ashenden and Owen, 1999) and in the 'rationality debate' in anthropology (Wilson, 1970), we repeatedly observe the difficulties caused by processes of social construction in which *both* a universal *and* a contextual element are in play. Certainly, pure universalism is oppressive, denies difference and tempts us to sever legs to fit a Procrustean bed. Equally, pure contextualism leaves us to suffer without recourse to anything beyond what is here-and-now the case (Passerin d'Entrèves, 1988). Lukes's careful analysis (1970) of the universal and context-dependent criteria of rationality shows the importance of *both* elements, and reminds us that a structural tendency to make knowledge in a particular way is not some essentialist plot, nor mere positivistic homogenization.

A more dialectical and dynamic understanding appears in the work of Durkheim (1982), and again in Berger and Luckmann (1967), where a relation of mutual causation is seen to pertain between social structure and individual cognition. Both these research projects sought to explain the durability of social constructions and the tenacity of social inequality. For Durkheim, this stability was a function of the human tendency to experience social constructions as real. In fact, Durkheim made the conceptual mistake of attributing this effect to the *socially constructed object itself*, here seen as 'having' a special capacity to mimic the material. The apparent 'reality' of social constructions had been noted previously, where it was variously referred to as hypostatization, or naturalization. Since Marx and Lukács, of course, we know it as reification (Lukács, 1971; Marx, 1974). This is a third kind of cognitive bias. It involves the tendency of socially authored structures to appear as real, as external to and independent of, individuals.

Marx himself was never entirely clear whether reification was a property of the socially constructed object, a psychological tendency of individuals, or some combination of both. Sometimes he refers to such objects as themselves

'mysterious', (Marx, 1974, 72), and as propagating an illusion that is immune to empirical falsification. However, he also describes individuals as having a 'religious reflex', which encourages their attribution of reality to social constructions. For Marx, power (in capitalism) trades on the fact that 'human minds are better at representing some things than others' (cited in McIntosh, 1998, 565). Again, in his time, there was little to help analyse this psychological element. Marx knew that when a social structure becomes reified, we are somehow unable to get behind the immediate evidence of appearance. As with the self-fulfilling prophecy, paradigm blindness and prejudice, we here confront a false world that is empirically self-confirming. The racist thus finds his prejudices confirmed by (selected) experience, and the torturer does not *perceive* the suffering of his victim (Vetlesen, 1994; Cohen, 2001).

Intriguingly, Marx's concept of reification itself receives empirical validation from cognitive psychology, suggesting that the easy attribution of reality to social constructions is, at least in part, a structural cognitive bias. Cognitive science shows that the human mind uses the same neural pathways when handling internal representations as it does with external realities. Whether processing the real or the imagined, cognitive operations are similar, and the cognitive delay is the same (Anderson, 1995, 135). This structural capacity enables us to automate the attribution of reality to social constructions with extraordinary rapidity. Awash in a rich mélange of material *and* symbolic phenomena, we simply perceive social constructions as real (Weick, 1969). We can immediately suspend disbelief upon a change of primitive masks, and are easily fooled by dreams and virtual realities. Here again, the benefits of reification are a reduction in cognitive work and an increase in processing speed. As with the other biases, this serves to accentuate certainty, stability and stasis. In particular, it tends to freeze social constructions, to conceal their social origins and to provide legitimating 'natural' narratives for extant practices (Boulding, 1956; Rosenberg, 1976; Douglas, 1986). Unfortunately, though its benefits resemble those of the other cognitive biases, reification has not received the detailed research in cognitive psychology it deserves.

Though tempted by methodological individualism, reductionism and determinism, cognitive science offers powerful explanatory tools with which to study the subtle ways in which hierarchy affects individual cognition. In particular, these tools can illuminate the cognitive mechanisms by which power corrupts. Thus, for example, organizations regularly favour, rehearse and drill certain schema *at* their participants. The interests of power are well served by pushing such schema. The hope is that through repetition, sticks and carrots, selected schema will become automated in individual cognition. The act of influencing individual thinking here takes place beneath the awareness of the individual, for whom cognitive work is both reduced and directed. Pushed schema include criteria for the selection of information, categories of

classification, interpretation and evaluation, agendas and legitimating narratives (Douglas, 1986). Hierarchic decision-making structures are themselves schema which, when reified, appear as natural and necessary, and when automated, become immune from critical examination.

Yet just as schemas are pushed at the individual, so are they pulled beneath awareness by the individual's cognitive biases. Power in organizations here benefits from a subtle and powerful combination of push and pull that resembles that of a martial art: for as one reaches out, expecting resistance, one is instead tugged off-balance. The offer meets a temptation; a 'fit' occurs between the organizational structure and the cognitive apparatus of the individual. When push and pull work together, the interests of power win the great prize of organization: coordinated and motivated intentional action that serves their own ends. In the attempt to capture and harness this prize, organizations must deliver certain schema, draw the maximum benefit from the individual cognitive biases and do so out of sight and mind. The resulting cognition serves the interests of power, for it enables individual commitment to be appropriated towards those interests, while at the same time concealing that appropriation behind a veil of ideology.

Because the construction of knowledge is always a situated activity, it takes place within contexts that already feature stored prior knowledge. Like language, this confronts the individual as ontologically independent, and as 'incoming' from a variety of societal levels. Norms, assumptions and schema are on offer from the micro-level of social groups, the meso-level of institutions and the macro-level of society (Eder, 1993). We thus inhabit crosscutting and overlapping communities of meaning which are perspectival and socially constructed. Yet we experience these as real. Indeed, as we have seen, our cognitive biases assist us in doing so.

To plumb the relation between individual cognition and organizational knowledge processing is thus to stumble upon an ongoing political struggle over knowledge in organizations. The interests of power seek to control the automated heuristics with which individuals make knowledge. It is because these heuristics occur beneath awareness that the power struggle over individual cognition in organizations is so often hidden. Organizations thus emerge as notably political places (Schott, 1991, 55), for within them we strut and fret, bereft of either truth or certainty. In our daily organizational lives, there is an ongoing, yet concealed, struggle over the very contents of our minds. Though political scientists have at last torn their gaze from elite institutions, and now study civil society, social capital, new social movements and collective identities, cognitive psychologists are right: they have not yet reached down far enough. The real struggle is personal, and thus also, organizational. Hierarchic organizations are spaces of public argument, recognition and display. They are our ruined agora, choked by power, wasted and unused.

The Personal Effects of Power

Incoming schema, active but invisible biases, hidden power struggles over meaning and social constructions that appear real, loom across our organizational lives and continue, in this most rational of times, to mystify our social world. Awash in hierarchic organizations, we are subject to powerful cognitive effects — almost always denied. To continue with our case study, in which the roles of dominance and subordination are momentarily frozen, we can use our sharpened cognitive tools to examine the *cognitive* costs of hierarchy; first from the perspective of the dominant, then from that of the subordinate.

Power gives control over resources, corruption by power is lucrative and the indulgence of narcissistic need is generally pleasurable. Yet to achieve these ends, elites must process knowledge. In this, they are much aided; both by their own cognitive apparatus and by the hierarchic organizational form itself. An organization is also a space of public recognition and display, a stage upon (within) which identities are performed (Goffman, 1990). Holding status is thus, also, strongly affirmational. Elevated status encourages a positive self-image (Keltner *et al.*, 2003); one that is confirmed in every interaction with subordinates. As we have already noted, one of the effects of hierarchy is to turn such interactions towards the interests of the dominant party, making *their* needs and psychological processes paramount. This affords repeated opportunities for narcissistic self-indulgence and disinhibition; opportunities that quickly work with the affirmational cognitive bias to become automated beneath awareness (Keltner *et al.*, 2003).

Promotion up the hierarchy further blurs the boundary between the individual and the collective, for the taking-on of new decision-making responsibilities serves to increase identification with the organization. When we identify with a particular hierarchy, we bring it into ourselves and meld its interests with our own. Any slight against the organization is now one against our very selves. Rousseau was describing such identification when he said 'the rich have feelings in every part of their possessions' (Rousseau, 1968). In our case, we might say that the high-status role occupant has feelings in every part of the organization, and certainly, with every part of decisions for which they have responsibility. Identification is a bleeding between self and organization. It further invites the leader to confuse his own cognition with the information processing of the organization. This progressive blurring is an important element in how power corrupts.

From this perspective, it is a constant source of irritation that subordinates take so little responsibility for decision-making. They barely concern themselves with collective interests. To the leader who identifies with the organization, and whose internal process is already bleeding into that of the

collective, this is, again, a *personal* rejection. However, it also appears as a palpable error of judgment. Subordinate disinterest, and their failure to join the leadership in taking responsibility for the making of decisions, begins a process in which elites come to systematically devalue subordinates and reify the poverty of their judgment. This devaluation is pulled into the mind, as it were, by the cognitive biases. However it is also pushed, here in the form of oft-repeated schema that systematically undervalues subordinate capacities.

One effect of hierarchy is thus to encourage elites to adopt a strongly negative assessment of those with lower status (Keltner *et al*., 2003, 269), one which increasingly regards them as shirkers of responsibility and incompetent free-riders, requiring constant supervision and motivation. Kipnis and Rind demonstrates empirically that when individuals were successful in their use of sales techniques on others, they immediately 'viewed target persons as less worthy than themselves, and moved away from them socially and psychologically' (1999). He labelled these changes the 'metamorphic effects of power', and concluded, 'The successful use of influence transforms the influencing agent's view of self and others'. Now we can see that this change of view is, in part, a cognitive process. Upon assumption of dominant status, subordinate capacities and identities become rapidly occluded. At its most advanced, this can lead to outright fear of subordinates and even to their demonization. Such disengagement undoubtedly restricts communication, and may serve to reduce elite exposure to critical input. It thus contributes to the growing isolation of the leader and the progressive shrinking of his cognitive world.

Now granted an expanding zone of individual cognition and the gradual withdrawal of the other, the leader is again encouraged to substitute his own interests for those of the collective. In this, he does no more than fill what by now has become an empty space (Keltner *et al*., 2003, 272). Minow has accurately termed this process, 'privileging subjectivity' (1990). Seeing no other responsible actor, no possibility for coordination other than hierarchy and no cognitive world but his own, the leader gradually turns the organization towards his own self-interest. There is often only faltering awareness of this change, for it is quickly automated and disappears, leaving the occupant of the high-status role quite unable to *perceive* any interest other than his own.

When questioned or threatened by change, those who occupy positions of power often adopt a markedly defensive posture in their conceptions and strategies (Benveniste, 1996). This defensiveness is the product of their psychological investment and the cognitive bias towards affirming their own selves and confirming existing knowledge. When a hierarchy is subjected to critical questioning, this defensive posture can motivate a petty preoccupation with even the smallest of symbolic challenges, and a reckless willingness to sacrifice everything to retain control.

In particular, the proposition that the existing hierarchy is necessary and inescapable is aggressively defended, as is the reality of elite knowledge. Such perceptual aberrations are caused by high-status role occupancy in a hierarchy, and account for corrupt elites being so much more dangerous than the 'mob'. In this, Hobbes (1958) was quite wrong when he claimed that anything was better than the state of nature, for as Dewey (1988, 208) correctly points out, 'the world has suffered more from leaders and authorities than from the masses'. Even Machiavelli (1979) understood that, 'Princes and governments are far more dangerous than are other elements within society'. So too does this ideological delusion exclude any serious attempt by government to meaningfully increase political participation, despite all its remonstrations on active citizenship and consumer choice. Finally, the very possibility of self-organization disappears behind the 'self-evident' need for a representative hierarchy. Participatory democracy thus appears as disorganized; though it has never been properly tried, researched or resourced (Blaug, 2002).

This, then, is how power corrupts: it encourages high-status role occupants to substitute their own cognitive processes for those of the collective. Hierarchy simplifies and absolute hierarchy simplifies absolutely. Hierarchy favours the use of certain schema and uses the cognitive biases to lull its participants into automated cognition and a shrinking cognitive world. As Dewey put it, 'all special privilege in some way limits the outlook of those who possess it' (Shusterman, 1997, 195). Here, the limited outlook derives from structural cognitive tendencies and their dynamic 'fit' with the power saturated organizational form of hierarchy.

Though we all share the same cognitive apparatus, the effects of hierarchy on individual cognition are very different for subordinates. They too receive significant benefits, and they do so, once again, via a process of cognitive substitution. However, while the leader substitutes his own cognition for that of the collective and so inflates his own self-interest to the exclusion of all else, the subordinate substitutes collective information processing for his own. It is *this* substitution of cognition, facilitated and pulled at by individual cognitive biases, which results in the unwitting collusion with oppression.

When given a low-status role in a hierarchic organization, it is important to stay alive, gain carrots, avoid sticks and generally defend yourself. To do so, one requires knowledge, and this is provided according to your status. Inescapable partialities of view, and an exclusion from decision-making responsibility, are here part of a general simplification and reduction of cognitive work offered you by the hierarchic organizational form.

At the same time, power formations in hierarchic organizations endlessly dose subordinates with particular schema, in the hope that they are taken up in the construction of knowledge and which are intended to ensure a zone of collective meaning. Pushed schema include norms, routines and rules (Nelson

and Winter, 1982), but they also feature powerful assertions about the necessity of hierarchy and the paucity of subordinate capacities. Regularly drilled and rehearsed, these schemas are then eased into subordinate cognition by the biases of confirmation and reification. When fully automated, power thus operates beneath awareness, and subordinate cognition can be effectively coordinated to deliver organizational goals. Here, then, subordinates are encouraged to directly cede portions of their own cognition to the hierarchic organization. This outsourcing of cognition to a hierarchy serves to reduce the cognitive work required of the individual.

This reduction in work has its costs, chief among them being what has been called 'learned helplessness'. Subordinates are severely limited in their affirmational identification with the organization, most particularly by being denied responsibility for decision-making and having their knowledge undervalued. When they finally relinquish a portion of their cognition to a hierarchy, they achieve a psychological dependency that is self-confirming. Helplessness, a social construction that takes place beneath individual awareness, can now be empirically studied as objective fact. Subordinate collusion contributes to the maintenance of hierarchy, and allows individual cognition to be managed in the interests of power. Offered a form of proxy cognition, a stand-in, a water carrier, and one willing to share the load of information processing and defence, most of us take it. Upon joining a hierarchy, then, we are not only force-fed ways of thinking. We are also invited, by the very structure of individual cognition itself, to alienate portions of our thinking to the organization, and thus achieve what Baynes (1992) has called 'institutional relief' .

Yet this is a dangerous kind of cognition, for what is being automated here is blind obedience. It can serve the interests of power, and do so beneath awareness. It is self-reinforcing, and, when in full cry, supports the cruelest excesses of individuals within organizations. There is something deeply passive in its adoption. To have a portion of one's cognition invisibly colonized is not an admirable quality. So important is this kind of cognition that we should note its principle qualities and give it a suitable name.

Where individual cognition is:

1. *also* a part of hierarchic organizational knowledge processing,
2. *automated* beneath individual awareness and
3. *serves* the interests of hierarchic power,

we will refer to it as 'Battery' cognition. This captures the sense in which this type of thinking is invisibly taken over, managed and *farmed* by the formations of power for its productive efficiency. Battery cognition is a poor stand-in for autonomy, and is certainly an example of undemocratic thinking. As such, it reflects Rousseau's infamous critique of representative government: that the

alienation of sovereignty to a proxy constitutes a serious violation of autonomy (1968, 77–80; Wolff, 1970). As Arendt put it, no one has the right to obey.

The structural biases of individual cognition and the individual's respective location in the relations of power combine to create hierarchy's tendency towards elite corruption and subordinate collusion. In this way, 'our innate tendencies to think in certain ways', are '*parasitized* by local power formations and used in their service' (McIntosh, 1998, 560). Hierarchic power is thus able to utilize universal structures of individual cognition, and to do so differently for elites and subordinates.

Conclusion: Hierarchy and Democracy

In a democracy, we legitimate political power by the informed consent of the citizenry. Without legitimacy, no political order can last for long. Democracy uses hierarchy for its capacity to coordinate collective action. Yet where its costs outweigh its benefits, it should become subject to critical questioning. Even when hierarchy is necessary, and is knowingly selected and agreed to by a democratic process, its cognitive effects do not go away. They therefore require not only conceptual clarification, but also, careful practical management. Our cognitive analysis of hierarchy suggests that such costs are often hidden, and that democratic citizens seeking both collective action and personal autonomy would do well to pay them heed.

We have seen that elite and subordinate cognition dramatically diverge in a hierarchy, particularly around responsibility for decision-making, identity formation and the direction of cognitive substitution. Where a hierarchy is old and stable, self-legitimating and heavily encrusted with collective identities, each side of the power-divide offers a distinct epistemological perspective and community of meaning (Sandelands and Stablein, 1987, 13; Schott, 1991, 66). This divergence of cognition, and the waste of knowledge it brings about, is what finally dooms organizational hierarchy. Cognitive separation is a structural tendency of hierarchic organizations, and accounts for perhaps the oldest critique of hierarchy: that it degenerates into tyranny. Michels (1958) described this separation as a growing *distance* between elites and subordinates, Rousseau (1968) as a gradual adoption of distinct types of will, Marx, as a division of class interest. Cognitive psychology shows that this separation derives, at least in part, from the occupation of different organizational perspectives particular to hierarchy and their interplay with the cognitive apparatus of individuals. It is the 'fit', here between the hierarchic form and the biases of individual cognition, which brings distinct cognitive worlds into being. Cognitive separation is a cost of all divisions of labour (Berger and Luckmann, 1967; Lawrence and Lorsch, 1967; Walker, 1985; Clegg, 1994, 469), and is exacerbated by the hierarchic form.

The separation of cognitive communities on either side of a power-divide goes some way towards explaining why communication so readily breaks down in hierarchic organizations, and how top-down administrative and technological initiatives can be so differently interpreted by their recipients. Certainly, cognitive separation poses particular problems in a representative democracy, where there is a division of *political* labour between professional politicians and occasional electors (Mill, 1972). Current levels of apathy and political mistrust, the concentration of executive power and the growth of bureaucratic hierarchy suggest the process of separation is already advanced in the liberal democracies.

Finally, cognitive separation is readily observable in hierarchic organizations and confirmed in experimentation. When Zimbardo divided students into 'guards' and 'prisoners', each group quickly came to inhabit distinct cognitive worlds. Within hours, the guards thought it acceptable, even enjoyable, to abuse the prisoners so severely that the experiment had to be stopped (Haney *et al.*, 1973). Hierarchic power here took over their thinking, and did so beneath awareness. One need only look at the faces of the Abu Ghraib torturers to see what they cannot.

The effects of institutionalized power asymmetries on individual cognition, or the cognitive costs of hierarchy, must be carefully observed, managed and minimized. Our analysis of the mechanisms by which individual cognition can be captured by the interests of hierarchic power suggests these costs to be both substantial and ideologically concealed. They at least include corruption, dependency, cognitive separation, the occlusion of non-hierarchic solutions and a quite extraordinary waste of subordinate knowledge. Together, these can result in very serious mission drift indeed.

The subtle push and pull by which hierarchic power interacts with individual cognition is itself but a small part of the complex ways in which social structures and individuals co-create meaning. To observe even these rather blunt mechanics, we have had to slow down this process, to simplify it by assuming one group as dominant and another subordinate — even though actual hierarchies are, as we noted earlier, characterized by rapid changes of relation; hence the Janus-faced quality of their interactions. In the static case of an institutionalized power-divide, cognitive psychology illuminates certain mechanisms. Yet cognitive science is already, itself, a simplification; abstracted as it is from problems of affect, context, corporeality and the complexities of social power. It may, therefore, well be the case, as the neo-Foucauldians (such as Rose) have argued, that our thinking can never be free, that we can never escape the ideology that artificially supports hierarchy and that power will forever occupy our heads. However, while evidence for our recurrent compliance with power is overwhelming, there *are* elements of Battery cognition that can be hauled up into consciousness, properly evaluated and

changed. We can learn, update schema in the light of new information, question hierarchy and reorganize. A behaviour may be natural (violence? superstition? Scapegoating?), but this neither justifies it, nor suggests it cannot be revised.

Crucial to such learning is the educational experience of participation itself. It has been widely noted that citizen capacities can rapidly improve when people take back responsibility for decision-making (Pateman, 1970; Warren, 1992). Here, cognitive science suggests that part of this 'transformation' is a *refusal* to accept pushed schema. Citizens can and do override their cognitive biases, question and reject schema that devalue subordinate capacities and recover more affirmative self-conceptions. Such learning is often accompanied by a profound discovery: that there are other very effective ways of coordinating collective action and that one of hierarchy's cognitive costs is the *invisibility* of those other ways (Deleuze and Guattari, 1987). For these reasons, democratic citizens require more than occasional 'widespread consultation' if they are to learn participatory politics and recover their own cognition.

In this paper, contemporary advances in cognitive psychology have been used to deepen our understanding of the cognitive costs of hierarchy in the hope of contributing to a more conscious, deliberative and democratic management. There is much we must *do* to sensory data in order to make it into meaning. One purpose of a more participatory democracy is to make sure the hierarchic organizational form does not do this for us.

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