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On dual processing and heuristic approaches to moral cognition

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We examine the implications of dual-processing theories of cognition for the moral domain, with particular emphasis upon 'System 1' theories: the Social Intuitionist Model (Haidt), moral heuristics (Sunstein), fast-and-frugal moral heuristics (Gigerenzer), schema accessibility (Lapsley & Narvaez) and moral expertise (Narvaez). We argue that these theories differ from each other in important ways and should be carefully distinguished. We examine these theories in the light of the 'Berkowitz Rule' with respect to educational practice and conclude with some thoughts about the implications of this work for resetting the boundary between ethical theory and moral psychology.

Kohlberg's standard model

It is rare for a doctoral dissertation to be so influential that it launches a field of study. But such was the genius of Kohlberg's dissertation that it introduced a set of theoretical and empirical claims that evolved into one of the most productive and famous research programs of the past 50 years. It is said that the mark of the true pioneer is not to have the last word but to say it first. Saying the first word is the most difficult and creative part. On this score Kohlberg was the true pioneer. He carved out a space for the study of moral development against the backdrop of behavioural and psychoanalytic paradigms that did not countenance the core claims of his theory. He did not do this completely unarmed. In addition to the writings of John Dewey, James Mark Baldwin and George Herbert Mead, Kohlberg availed himself of the powerful theoretical resources of Piaget's developmental theory but also the philosophical tradition associated with Kantian ethics.

This latter feature is crucial for understanding the innovative significance of Kohlberg's theory and its enduring attraction to scholars of many disciplines. Quite simply, Kohlberg 'moralised' the study of child psychology, and in a triple sense. First, he committed the 'cognitive developmental approach to socialization' to an anti-relativism project where the unwelcome spectre of ethical relativism was to yield to the empirical findings of moral stage theory. On this view, ethical relativism is

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defeated at the highest stages of development where the moral point of view commits one to secure moral consensus around rationally-grounded universal imperatives.

Second, Kohlberg appealed to ethical theory to establish the terms of reference for his investigations. For Kohlberg the study of moral development must begin with certain meta-ethical assumptions that define a moral judgement (Kohlberg *et al.*, 1983). He insisted, for example, on a *principle of phenomenalism* for defining moral phenomena. This principle asserts that 'moral reasoning is the conscious process of using ordinary moral language' (p. 69). The moral quality of behaviour hinges on agent phenomenology; it depends solely on the subjective perspective, judgement and intention of the agent. A behaviour has no particular moral status unless is it motivated by an explicit moral judgement. Put simply, moral behaviour is the result of moral judgement, and moral judgement makes 'reference to conscious processes' (p. 8). This principle was used as a cudgel against behaviourism (which rejected both cognitivism and ordinary moral language) and psychoanalysis (which emphasised emotional drives and unconscious processes) and is so deeply rooted in the cognitive developmental tradition that Blasi (1990) could assert that morality '*by definition*, depends on the agent's subjective perspective' (p. 59, our emphasis).

Finally, from Kohlberg we learned a lesson about the division of labour between ethics and psychology: first, make certain ethical assumptions, use ethical theory to define the domain of inquiry and, then, get on with your psychological research. Kohlberg's instruction on this was so successful that it is now part of the received view that philosophical analysis must precede psychological work. Psychological explanations must be grounded by philosophical considerations (see e.g. Turiel, 1998). Put tendentiously, while ethics is autonomous, moral psychology is not. Psychological research on moral functioning is to be constrained by ethical theory, an arrangement that is quite extraordinary (Lapsley & Narvaez, in press).

The formidable combination of Piagetian structuralism and Kantian deontological ethics, along with a research program that pursued relentlessly the stages of moral reasoning, led to the ascendance of Kohlberg's cognitive developmental paradigm to such an extent that his work was the Standard Model of moral development against which others contended. But after 50 years the Standard Model now looks a bit shop worn. It no longer animates the leading edge of developmental science and there is increasing recognition that the field of moral development is at an important crossroad as it enters its 'post-Kohlberg' phase (Lapsley & Narvaez, 2005).

The collapse of the Standard Model has many causes. One can be traced to the general decline of Piaget's approach to cognitive development. As Piaget's theory waned in influence, or was eclipsed by alternative conceptualisations of intellectual development, Kohlberg's theory lost much of its paradigmatic support (Lapsley, 2005). Factors internal to Kohlberg's research program are also implicated, including doubts about its empirical warrant and how to understand core constructs such as stage, sequence and structure. One got the sense that the research program was striking an increasingly defensive posture as it warded off criticism with a series of *ad hoc* stratagems that served more to protect its core commitments than to anticipate novel facts—a sure sign of a degenerating research program (Lakatos, 1978).

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Moreover, certain liabilities of the Standard Model's 'moralization' of developmental psychology have come into sharper focus. For example, the pursuit of an empirical basis for refuting ethical relativism had the unintended consequence of isolating moral development research from advances in other domains of psychological study. Entire lines of research were ruled out of bounds if they were deemed incompatible with Kantian moral agency; or if they were thought to give aid or comfort to ethical relativism. On this score, research on selfhood and personality, the mechanisms of internalisation, the study of moral dispositions or traits or of moral emotions were deemed suspect. Similarly, the allegiance to certain philosophical presuppositions shielded the Standard Model from empirical realities piling up in the literatures of cognitive and social cognitive science. The principle of phenomenalism, in particular, ruled out the legitimacy of research on the tacit, automatic and implicit features of cognition for the moral domain. Yet the image of moral agency insisted upon by the Standard Model—one involving rational calculation that is deliberative, effortful and conscious—collides with empirical research that shows that much of human decision making is not like this at all and that, indeed, much social behaviour is under 'non-conscious control' (Bargh & Chartrand, 1999; Bargh, 2005). As Hart (2005) pointed out, moral psychology cannot evade findings like these, although the deliberative quality of moral life also cannot be dispensed with.

What seems required, then, is a model of moral cognition that articulates both the deliberative and automatic processes that underlie moral behaviour. As we will see, the dual-processing approach is not univocal and there are numerous ways to capture the dual trajectories of cognitive development. Yet, at the most general level two-process theories coalesce around some common assumptions. As Klaczynski (2005, p. 49) points out, 'If these assumptions are borne out, theoretical construals of development as a unidirectional progression within a single processing system… will no longer be tenable.' The implication, of course, is that the construal of moral cognitive development as proceeding only within the single deliberative processing system also is untenable.

In the next section we describe the claims of dual-processing models of cognition. We show where dual-processing options (denoted as 'System 1' and 'System 2') are evident in extant research in the moral domain. We pay particular emphasis to System 1 moral theories insofar as these theories are becoming increasingly prominent in the moral psychology literature, although important differences exist among them, as we will see. We then discuss the educational implications of System 1 theories and conclude with some thoughts about the implications of this work for resetting the boundary between ethical theory and moral psychology.

Dual processing systems

The dual processes of human cognition have been variously conceived in the cognitive science and decision-making literatures.[1] For example, Sloman (1996; cf., Gigerenzer & Regier, 1996) summarised the empirical case for two forms of

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computation that he termed 'associative' and 'rule-based'. The associative system encodes statistical regularities and draws (often reflexive) inferences on the basis of similarity, typicality and contiguity among concrete images, stereotypes and feature sets that arise from personal experience. The rule-based system attempts to describe the world by encoding different kinds of logical, causal and hierarchical structure among abstracted features of language and culture. Whereas the associative system lends itself to forecasting, rule-based computations are oriented towards justification and explanatory coherence.

Other two-process theories divide on whether reasoning is heuristic or analytic, gist or verbatim, tacit or explicit, automatic or controlled and so on. Fortunately there is a family resemblance among the theories that permits useful summary. For illustrative purposes we have adopted the System 1 and System 2 nomenclature of Stanovich and West (2000) to capture the generic properties of the two processes. System 1 properties include heuristic processing that is associative, implicit, intuitive, experiential, automatic and tacit. System 1 processing makes fewer demands on attentional resources. It supports interactional intelligence, that is 'the ability to model other minds in order to read intention and to make rapid interactional moves based on those modeled intentions' (Stanovich & West, 2000, p. 658). It leans towards the 'fundamental computational bias' of automatically contextualising problems (Stanovich, 1999). It is 'deliberation without attention' (Dijksterhuis *et al.*, 2006) acquired by biology, exposure and personal experience.

In contrast, System 2 processing is rule-based, explicit, analytical, 'rational', conscious and controlled. It is deliberative, effortful reasoning that is slower and demanding of attentional resources. It is acquired by formal instruction and leans towards decontextualisation and depersonalisation of problems in the service of abstract rules, algorithms and underlying principles or causal structure.

The contrasting properties of the two systems are not rigid distinctions. For example, automaticity is inferred traditionally if cognitive processes are engaged unintentionally, involuntarily, with little or no expenditure of attention, without effort and outside of conscious awareness. In contrast, controlled cognitive processes are under conscious intentional control. Yet there is no *a priori* reason why, for example, automatic processes should not consume attentional resources (Kihlstrom, 1999), nor does the designation of automaticity require the co-occurrence of all of the traditional criteria. Indeed, Bargh (1989) argues that awareness, attention, intention and control are somewhat independent qualities that co-occur in different combinations, elicited under specific enabling circumstances. Moreover, the ascription of automaticity to behaviour (e.g. walking, driving, reading) does not imply necessarily that the behaviour is not intentional or that it cannot be controlled or halted (Logan, 1989); nor does it rule out the possibility that controlled processing can be mediated by unconscious automatic processes (Kihlstrom, 1999).

What's more, the two processes may be interactive in task performance and interwoven in development (Sloman, 1996). In Sloman's model, for example, associative and rule-based computations can have overlapping domains of application that vary among individuals on the basis of formative, background

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experiences. In overlapping domains both forms of processing may try to resolve a problem, which give rise (though not necessarily) to divergent or 'simultaneous contradictory belief' about its possible resolution. Indeed, it is worth speculating whether our experience of moral ambivalence is additional evidence of two computational systems of reasoning working through a problem but pointing towards divergent moral conclusions.

As a first approximation it would seem that a complete model of moral functioning must reference System 1 and System 2 processes, although this general claim will require qualification. Within moral psychology, System 2 cognitive processing describes deliberative calculation, rule-based processing and effortful expenditure of attentional resources much the way moral reasoning is described by the Standard Model, which has served as the benchmark for System 2 models of moral cognition. System 1 characteristics show up in moral psychology in the form of 'intuitions' (Haidt, 2001), 'heuristics' (Baron, 1993; Sunstein, 2005; Gigerenzer, 2008), chronic accessibility (Lapsley & Narvaez, 2004) and moral expertise (Dreyfus & Dreyfus, 1991; Narvaez & Lapsley, 2005). System 1 moral cognition is controversial insofar as it appears to run foul of the principle of phenomenalism insisted upon by the Standard Model. We therefore follow the established dichotomy between the System 1 and System 2 processes in order to distinguish the former from the original Standard Model, although this boundary may at times be blurred and appear more like a continuum in nature (Bargh, 1989). As most readers are likely to be familiar with System 2 moral cognition models, such as the Standard Model, we focus on discussion on the family of System 1 models.

System-level family resemblance notwithstanding, intuitions, heuristics, accessibility and expertise are different things and more clarity is purchased by drawing careful theoretical distinctions among them. One of the goals of this paper is to show that theories sharing certain System 1 properties nonetheless differ from each other in important ways and should not be considered all of a piece. In the next section we take up the theories with System 1 features.

System 1 moral theories

Social intuitions

One common element among the four theories is the role accorded automaticity in moral information-processing, although the theories differ in crucial ways on when and how automaticity arises in moral functioning. In Haidt's (2001) 'social intuitionist model' (SIM) intuitions enter the moral deliberation process prior to moral judgement and reasoning. Moral intuition is defined as 'the sudden appearance in consciousness of a moral judgment, including an affective valence (good–bad, like–dislike) without any conscious awareness of having gone through steps of searching, weighing evidence or inferring a conclusion' (Haidt, 2001, p. 818). Intuitions automatically generate moral judgements—their appearance into consciousness is 'sudden'—and the moral judgement automatically generated by intuitions leads to moral reasoning. In most cases, moral reasoning acts only as a

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post hoc rationalisation for the judgement *already made*, although sometimes reasoning can influence a moral judgement itself. For example, a decision-maker may use (System 2) reasoning to override the decision made by intuition or otherwise alter the judgment upon reflection, but this often requires large expenditures of cognitive resources and thus occurs rarely. Hence the SIM posits a corrective mechanism whereby one's moral reflection can 'fix' any issues with respect to one's automatic intuition. Still, moral reasoning is described as a 'slave' to moral intuition (Saltzstein & Kasachkoff, 2004) or as a 'press secretary for a secretive administration—constantly generating the most persuasive arguments it can muster for policies whose true origins and goals are unknown' (Haidt, 2007, p. 1000).

The automaticity of the SIM is front-loaded prior to judgement and reasoning, generated by intuitions that are constitutive of human nature (and are hence prior to experience, learning and enculturation). The SIM holds that there are five sets of intuitions that ground morality in all societies (and are evident in some other species): harm/care, fairness/reciprocity, authority/respect, purity/sanctity and in-group/out-group boundaries (Haidt & Joseph, 2004). Each cluster has an evolutionary history and is encoded in the human mind in the form of a learning module that generates more specific modules within a cultural context. So, for example, a child would '…learn to recognize in an automatic and module-like way specific kinds of unfairness or disrespect' (Haidt & Bjorklund, 2008, p. 205). Hence the automaticity of the SIM derives from evolved, innate modules, although SIM does provide for how children come to learn culturally specific moral codes. Put differently, intuitions seem to function like an evolved, hard-wired, innate Morality Acquisition Device (MAD) that is alert to local instantiations of the universal moral grammar represented by the five clusters of moral intuitions.

The analogy with MAD is perhaps not far-off. The developmental theory of the social intuitionist in fact holds that morality is a lot like language (or sexuality) in that it emerges *from* the child on his or her own maturational schedule, rather than imposed upon the child on society's schedule (Haidt & Bjorklund, 2008). This process, called 'assisted externalization', is joined with a view that virtues are 'constrained social constructions' of perceptual, reflective and behavioural skills (Churchland, 1998). But not all virtues (understood as culturally ideal skills) are equally possible or learnable, given the constraints of the five foundational modules of intuitive ethics. On this view, then, moral development 'can now be understood as a process in which the externalization of five (or more) innate moral modules meets up with a particular set of socially constructed virtues' (Haidt & Bjorklund, 2008, p. 209).

Moreover, there is typically a close match between moral modules and socially constructed virtues just because cultures can specify only the schedule of virtues that align with one or more of the intuitive foundations. Of course (and in the manner of language acquisition) it is left to experience to help children calibrate their moral intuitions with the examples and demands of local culture, but adults usually overestimate the influence of their moral instruction 'because they do not recognize

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the degree to which they are going with the flow of the child's natural moral proclivities' (Haidt & Bjorklund, 2008, p. 209).

Moral heuristics

In SIM the social intuitions that give rise to automatic moral judgements are the result of the evolutionary preparation of innate learning modules. For Sunstein (2005) intuitions are generated by 'moral heuristics'. Moral heuristics are the simple, highly intuitive rules-of-thumb that are used to negotiate everyday morality. They are generalisations from experience that typically work well in specific contexts, although their unreflective, undisciplined and decontextualised application can lead to moral blunders. One way that heuristics work is through *attribute substitution* (Kahneman & Frederick, 2002). For example, when confronted with a 'target attribute', say, 'what does the moral law require in this case?'—we might substitute instead a 'heuristic attribute' ('what would Larry Kohlberg do?') that is a shortcut easier to process. For Sunstein (2005) the generation and application of moral heuristics is a System 1 operation and must be understood in light of dual-processing theories. Hence 'System I proposes quick answers to problems of judgment and System II operates as a monitor, confirming or overriding those judgments' (Sunstein, 2005, p. 533).

In matters of morality (but also politics and the law) heuristics are pervasive and evident (it is claimed) regardless of one's philosophical preferences. Utilitarians generate heuristics that maximise utility. Deontologists generate heuristics that govern the discharge of moral obligations and 'those uncommitted to any large-scale theory should be able to specify heuristics for their own more modest normative commitments' (Sunstein, 2005, p. 532). And because (System 1) moral heuristics are pervasive, we are prone to (moral, legal and political) error, mostly because we mistake our heuristics for universal truths and misapply them to situations or problems that are better left to System 2 corrections.

Sunstein (2005) catalogues several moral heuristics that he sees at work in various domains. For example, in liability cases there is a widespread tendency to punish corporations if its decisions are driven by a formal cost-benefit analysis, for this seems to violate the basic moral heuristic that one should not 'trade money for lives' or 'knowingly engage in behavior that results in death'. Ordinarily, these are sound moral principles, but using them for wholesale condemnation of cost–benefit analyses 'is not reflective but is instead a product of System 1' (Sunstein, 2005, p. 536), insofar as it would rule out all public works, product design by business, pharmaceutical research and many other salutary, necessary endeavours. It is not always unacceptable, in other words, to engage in behaviour that results in human death.

Heuristics seem to drive our notions of fair punishment. For example, decisions about punishment seem to be motivated by an 'outrage heuristic' (mandating punishment that is proportional to our sense of outrage, which trumps all talk of deterrent punishment: Sunstein, 2005). Critics of emission trading policies (or of

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letting otherwise ineligible drivers pay a charge to use express lanes) are said to fall prey to a moral heuristic that says 'People should not be permitted to engage in moral wrongdoing for a fee'. People who increase their own risk (e.g. not wearing seatbelts, avoiding vaccinations) rather than subject themselves to a small hazard that is supposed to increase safety are driven by an aversion to betrayal as encapsulated in the heuristic: 'Punish and do not reward betrayals of trust'. Moral analysis of genetics research, reproduction and sexuality is influenced by heuristics such as 'Do not play God' (cloning), 'Do not tamper with nature' (genetically altered food) and 'Do not tamper with natural processes for human reproduction'.

The divergent reaction of most individuals to 'exotic' moral dilemmas such as the 'trolley problem' and the 'footbridge problem' are also based on moral heuristics, on Sunstein's (2005) view. Both problems involve identical outcomes (somebody has to die in order to save many others). In the case of the runaway trolley one can flip a switch to move the trolley to another track (killing one person). In the footbridge case one can save the others by throwing a stranger into the path of the trolley (killing one person, the stranger). Most individuals will agree to throw the switch but not the stranger. But Sunstein (2005) argues that there is no difference, in principle, between the two dilemmas and our intuition that there is—or that there is a categorical difference between harmful omission and harmful action more generally—goes to show the unreliability of heuristics.

It also shows the poverty of using exotic moral dilemmas in philosophical analyses in order to reveal the structure of moral judgements. To do so is to 'inadvertently and even comically' (Sunstein, 2005, p. 541) replicate the early cognitive biases-and-heuristics work of Tversky and Kahneman. But whereas Tversky and Kahneman designed cases to show that human reasoning relies on heuristics and that these lead to non-normative decisions, bias and error, some philosophers design cases (trolleys, footbridges and possibly cancer-curing druggists) in the hope of showing that our unreliable (System 1, heuristic) intuitions nonetheless reveal something about the structure of sound moral judgement. This is a fool's errand, in Sunstein's view.

Sunstein's major point, then, is that rules of thumb often lead to error in morality, politics and law (and not just in factual domains of interest to Kahneman and Tversky, where normative correctness is vouchsafed by rules of logic) and this is because of our tendency to over generalise intuitions to contexts where they misfire. Sunstein (2005) does not present a developmental theory as to how moral heuristics arise in one's cognitive repertoire, other than noting possible evolutionary preparedness and social learning.

Although Sunstein plants moral heuristics firmly on the field of System 1, the presumed distinction between System 1 'heuristics' and System 2 'rules' or 'principles' is not easy to maintain (Gigerenzer & Regier, 1996). The candidate moral heuristics noted by Sunstein, for example, look a lot like potential moral principles (Casebeer, 2005). As Bartsch and Wright (2005) point out, what is the difference between heuristics like 'Punish and do not reward betrayals of trust' and principles like 'Do not knowingly cause human death?' In addition, Moshman (2005) argued that the automatic-controlled dimension is orthogonal to the

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heuristic-rule-based dimension—with the result that automatic and controlled processing can apply both to heuristics and to rules. Yet this conceptual distinction is confounded by reference to generic System 1 and System 2 properties, casting doubt on the usefulness of the two-process distinction for capturing the diversity of reasoning.

Gigerenzer's (2008) approach to moral intuitions does not trade on the distinction between System 1 and System 2. Indeed, he is quite critical of the distinction. These dichotomies, he writes, 'account *post hoc* for everything and nothing' (p. 15). Moreover, these 'surrogates for theories' typically fail to generate testable models of cognitive processes (Gigerenzer, 1998). In his view moral intuitions are driven by 'fast and frugal heuristics'. Heuristics are fast to the extent they lead to quick decisions; they are frugal if the information searched to reach the decision is limited. Moreover, heuristics are embodied and situated—embodied to the extent that they exploit evolved capabilities of the brain—to the extent that they exploit environmental structures. The dynamic between embodiment and environmental sensitivity is distinctive of Gigerenzer's science of heuristics.

The science of heuristics asks three questions. It wants to know which heuristics people have in their 'adaptive toolbox' (Gigerenzer & Selten, 2001). It wants to know in which environments heuristics succeed or fail. Indeed, heuristics are deeply embedded in social environments and they are context-sensitive. From this perspective the rationality of heuristics is said to be 'ecological' rather than 'logical'. Finally, it wants to understand how people come to adjust heuristics for the sort of problems they face in the environments in which they live. Indeed, the design of environments—of institutions, settings and contexts—underscores the adaptive nature of heuristics and the possibility that moral action can be affected from the outside-*in*.

Gigerenzer (2008) makes three additional points. First, he rejects the notion that *moral* heuristics are distinctive in any way from other heuristics in the adaptive toolbox. As he put it, 'one and the same heuristic can solve both problems that we call moral and those we do not' (Gigerenzer, 2008, p. 10). Second, although he insists that the heuristics underlying moral action are generally unconscious, he rejects an overly strong dichotomy between heuristic and reasons. In moral psychology we argue typically about whether moral functioning is rational/reflective (e.g. Kohlberg) or non-rational/intuitive (e.g. Haidt). But the science of heuristics rejects this as a false distinction. Heuristics can rely on reasons and the proper opposition is between unconscious reasons underlying intuition and the conscious reasons that we generate after the fact (and to the public). And they need not be the same reasons.

Finally, Gigerenzer (2008) is more sanguine (than is Sunstein) about the usefulness of moral heuristics for decision-making. For Sunstein heuristics are a source of bias and error that require System 2 correction. But the science of heuristics asserts that ecologically valid decisions often do not require exhaustive analysis of all causal variables or an analysis of all possible actions-and-consequences. The best decisions do not always result from such effortful, reflective

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calculations but rely instead on 'frugal', incomplete and truncated assays of available information (Klein, 2001; Hogarth & Karelaia, 2006).

It should be evident that there are important differences between social intuitions (Haidt), moral heuristics (Sunstein) and the moral intuitions afforded by fast-and-frugal heuristics (Gigerenzer). Our final examples point to a different source of automaticity, which is chronic accessibility of morally-relevant schemas and expertise. In contrast to heuristics and intuitions, accessibility and expertise accounts of moral cognition would seem to offer more promising accounts of developmental mechanisms and educational implications. Although chronicity and expertise emerge from different theoretical traditions, and are usefully distinguished, we treat them under the same heading here because they stand in similar contrast to the views reviewed earlier.

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Accessibility and expertise

Schemas are general knowledge structures that organise information, expectations and experience (Narvaez, 2008a). Schema accessibility is an important feature of social cognitive theories of personality. The dispositional elements of personality are carried by cognitive constructs variously conceived in terms of self-schemas, prototypes, scripts and episodes and other top-down cognitive mechanisms. According to Cantor (1990, p. 738), schemas 'demarcate regions of social life and domains of personal experience to which the person is especially tuned and about which he or she is likely to become a virtual "expert"'. Moreover, the accessibility of schemas hinges partly on the frequency of its activation. The more frequently a construct is activated (or the more recently it is primed), the more accessible it should be for social information processing (Higgins, 1996, 1999). Frequently activated constructs should, over time, become chronically accessible; and there should be individual differences in the accessibility of constructs just because the formative developmental experiences of individuals vary widely. Hence accessibility is a person variable and is properly considered a personality variable (Higgins, 1996).

If schemas are chronically accessible then it directs our attention selectively to only certain features of our experience; it disposes us to select schema-compatible life goals, tasks and contexts that further canalise and maintain our dispositional tendencies; it encourages us to develop highly practiced behavioural routines in those areas demarcated by chronically accessible schemas which provide 'a ready, sometimes automatically available plan of action in such life contexts' (Cantor, 1990, p. 738).

Lapsley and Narvaez (2004) appealed to this framework to articulate a social cognitive account of moral personality. On this view one has a moral personality to the extent that moral schemas are chronically accessible for appraising one's social landscape. Chronically accessible moral schemas also are easily primed by environmental cues because they are at a higher state of activation than are non-accessible schemas (Bargh & Pratto, 1986) and are produced so efficiently as to

approach automaticity (Bargh, 1989). Recent research has documented moral chronicity as an individual differences variable that influences social information-processing (Narvaez *et al.*, 2006).

But social cognitive theory distinguishes three kinds of automaticity (Bargh, 1989). *Pre-conscious automaticity* describes the involuntary activation of social constructs (e.g. schemas, scripts, plans, stereotypes, prototypes) outside of conscious awareness as a result of a triggering event. Pre-conscious automaticity is responsible for our strong feelings of certainty or conviction regarding our social judgements. Just because our interpretations and evaluations are generated pre-consciously, and without any awareness of inferential activity or cognitive effort, they are trusted as valid and accurate, 'Thus, these interpretations are not questioned, but are seen as undoubtedly valid sources of information, and are as a result a prime source of judgments and decisions' (Bargh, 1989, p. 11).

In the moral domain one sees evidence of pre-conscious automaticity in the way that individuals of exemplary moral commitment reach their judgements and also their felt conviction that their judgements are justified, valid and true (Narvaez & Lapsley, 2005). As Colby and Damon (1992) have shown, individuals who display extraordinary moral commitments rarely report engaging in an extensive, decision-making process. Instead, they 'just knew' what was required of them, automatically as it were, without controlled processing, without the experience of filtering the decision through an explicit decision-making calculus.

A second variety of automaticity, *post-conscious automaticity*, operates as the non-conscious consequences of conscious thought (Bargh, 1989). That is, a triggering event induces conscious awareness or attention, but has 'post-conscious' cognitive consequences that are generated automatically and outside of conscious awareness (Bargh, 1989). For example, the conscious activation of a moral concept can reverberate throughout the cognitive system in the manner of spreading activation to automatically influence the threshold for social perception of other related concepts (Narvaez & Lapsley, 2005). This is shown in priming studies. For example, activation of a social construct (e.g. 'hostile') in one context is available and utilised for social information-processing in other, unrelated contexts, even after the triggering event has long left conscious awareness (Higgins & Bargh, 1987). In a series of experiments Goff *et al.* (2008) showed that manipulations that prime implicit, dehumanising racial stereotypes introduce visual bias in attention and visual perception and alter participants' judgments about whether violence against a Black person is justified (findings that are *not* moderated by *explicit* measures of racial prejudice—so much for System 2 override).

As Narvaez and Lapsley (2005) point out, priming effects offer surprising insight on a common practice of character education programs that attempt to teach a virtue of the week or month by prominently posting the trait word (e.g. 'honesty') or its example around the classroom or school. Although the efficacy of this practice for bringing about moral character is doubted (Lapsley & Narvaez, 2006), its real function may lie in its ability to prime the accessibility of virtue-relevant social constructs, which are made available to interpret and evaluate social information

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long after the trait-term has left conscious awareness. Moreover, something like post-conscious automaticity underlies the spreading activation assumptions of Aquino and Reed's (2002) approach to assessing moral identity.

Finally, a third kind of automaticity is 'goal-dependent'. Intended goal-dependent automaticity is evident as a consequence of skilled or expert performance (Bargh, 1989). Well-learned situational scripts, or highly routinised action sequences, typically operate autonomously, with little need of conscious control or significant attentional resources. Skilled behaviour falls within this category of automaticity, as well as procedural knowledge that has become autonomous of conscious control as a result of frequent practice or application (e.g. driving a car). Goal-dependent automaticity is a source of integrative insights concerning moral conduct. Moral character may depend upon a kind of socialisation that inculcates highly routinised action sequences, scripted interpersonal procedures and patterns of discrimination and judgement (Narvaez & Lapsley, 2005). Indeed, such automaticity is 'a well-practiced procedure that one intentionally employs in social judgment or pattern discrimination or as part of a complex skilled action' (Bargh, 1989, p. 20).

Goal-dependent automaticity is a product of moral formation; and it points towards a kind of expertise in moral cognition and behaviour. In several writings Narvaez and her colleagues have attempted to explicate an expertise model of moral character (Narvaez, 2005, 2006, 2008b; Narvaez & Lapsley, 2005). According to this model, moral learning extends along a novice-expert continuum that reveals clear behavioural differences. Put simply, experts have a richer declarative and procedural knowledge base that increases processing speed, directs attention to more informative details and facilitates perceptual pick up, and triggers automatic, goal-dependent skill usage (Narvaez & Lapsley, 2005).

In contrast to novices, experts have more and better-organised content knowledge, which is more easily accessed and more responsive to situational cues. Experts notice key features of domain-relevant activity that novices miss. They more easily recognise situations as something similar to what was encountered before, as something fitting a pattern, which is likely to trigger recall of previous solutions (Hardman, 2000). Experts have a greater degree of procedural knowledge that is highly automatised that permits active problem-solving at higher levels of abstraction along a number of fronts simultaneously. Indeed, experts approach problems differently from novices. Experts focus on abstractions, general principles and patterns. They focus on the organization and 'syntactical' structure of events, its underlying grammar or causal pattern. In this respect expert decision-making is a System 2 process; but it is System 1 in its automaticity and tacit features. Experts in the moral domain should be more likely to notice the dilemmatic features of their experience, to notice moral problems in the first place and to interpret their experience through the prism of chronically accessible schemes (Narvaez *et al.*, 2004; Narvaez & Gleason, 2007).

In contrast to Haidt's social intuitionist model, the accessibility and expertise perspective in moral psychology locates automaticity on the backend of development. It is the outcome of repeated experience, of instruction, intentional coaching

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and socialisation. In contrast to Sunstein's moral heuristics, the accessibility and expertise perspective views the development of intuitions as movement away from basic rules; as movement away from moral judgements guided by controlled processes towards procedural knowledge gained from experience (Dreyfus & Dreyfus, 1991; Bartsch & Wright, 2005). A novice at chess, for example, is introduced to rules of movement and some simple heuristics regarding openings ('Dominate centre squares'; 'Avoid moving the same piece twice') and positioning ('A knight on the rim—in for a trim'). These rules-and-heuristics point out the basic features of the game and make possible the first halting attempts at competition. With experience, however, procedural knowledge replaces rule-based applications, bringing on-line an 'intuitive responsiveness' which is, according to Bartsch and Wright (2005, p. 547), the hallmark of expertise 'because it enables rapid, automatic effortless judgment in response to environmental contingencies'. Moreover, (and in contrast to Sunstein's pessimism on this score) such intuitive responsiveness is 'reliably appropriate' (p. 547). This is the value of expertise; this is why we rely upon experts. Attempting to play speed chess after just a few lessons will show readily the desirability and advantage of 'fast-and-frugal' expertise.

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Educational implications: applying the 'Berkowitz rule'

Marvin Berkowitz once argued that any moral psychology worthy of support should be able to articulate an educational regime to support its claims and that the absence of educational implications should count against it.[2] As noted earlier, Haidt's social intuitionist model has little by way of developmental theory and gives scant attention to educational implications (Narvaez, 2007). Indeed, in the SIM it makes no more sense to teach children morality than it does to teach them language or sexuality. Sunstein's moral heuristics is also soft on this score, although we wonder if analysis of cases in such a way that highlights the peril of over-generalising heuristic solutions to prototypical examples would minimise the moral blunders that Sunstein attributes to misapplied heuristics. Case-based instruction is common in professional education and a program of study that emphasises the application and limits of moral heuristics might pay dividends. This would return dilemma discussion to the moral education curriculum but with a new purpose, not to reveal the structure of moral judgement or to motivate stage progression, but to discern instead the operative moral heuristics and to flesh out their applicability for the concrete demands of specific cases.

Gigerenzer's fast-and-frugal moral intuitions also lack a compelling developmental story, although the context sensitivity of heuristics draws attention to the role of contexts and institutions for shaping intuitions. Heuristics are both embodied and embedded and this requires an analysis of the way that environments support or undermine our moral intuitions. As Gigerenzer (2008, p. 11) put it, 'This focus on the environment contrasts with cognitive theories that assume, implicitly or explicitly, that morality is located within the individual mind, like a trait or a set of knowledge structures.' The science of heuristics insists that research study social

groups in addition to isolated individuals and natural environments in addition to hypothetical problems (Gigerenzer, 2008).

This emphasis finds resonance in several places in the moral psychology literature. It accords, for example, with just community approaches to moral education (Power *et al.*, 1989). It accords with a now burgeoning literature that emphasises the climate, culture and structure of classrooms and schools for facilitating moral formation and positive youth development (Lapsley & Narvaez, 2006). It accords with paradigmatic assumptions of ecological 'systems' models of development (Lerner, 2006). And it accords with social cognitive theories of (moral) personality that describe within-person cognitive-affective mechanisms that are dynamic interaction with changing situational contexts (Cervone, 2005). Indeed, the paradigmatic assumptions of developmental systems and social cognitive theory overlap substantially (Lapsley & Narvaez, 2004) and this fact underlies our preference for the social cognitive option over taxonomic accounts of personality (e.g. the Big 5: Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism). Our preference for social cognitive theory reflects a strategic bet that it is more likely to lead to robust integrative models of moral personality development, given its shared claim with developmental science that a stable dispositional signature is to be found only at the intersection of person $\times$ context interactions.

The expertise and accessibility models each have developmental and educational implications. For example, Narvaez's (2006) 'Integrative Ethical Education' integrates cognitive science literatures regarding the development of expertise with research-attested accounts of best-practice instruction. Her research team has identified componential skills that reflect the four psychologically distinct processes that underlie moral functioning: sensitivity, judgement, focus/motivation and action. These component skills can be cultivated along a novice-to-expert continuum. The transformation of novices-to-experts takes place in well-structured environments that provide opportunities for supervised, coached practice and instruction in both theory and meta-cognitive strategies. Experts-in-training learn to make decisions in an explicit, deliberate way in the context of explicit theory and explanation. It is System 2 instruction that emphasises rule-learning and controlled processing. Early on they learn to embed explanations in a theory that drives understanding and action. Thus, along with the implicit (System 1) learning that comes from immersion in a situation experts-in-training are given (System 2) theoretical tools with which to 'see' the domain (Narvaez & Lapsley, 2005).

The expertise model that drives Integrative Ethical Education places a premium on moral formation that is formal, intensive and coached. It takes place primarily in schools as part of an intentional pedagogical commitment to character education. In contrast, the social cognitive approach to moral personality draws attention to informal moral tuition that takes place in families in early development. On this view, moral personality development is built on the foundation of generalised event representations that characterise early socio-personality development (Thompson, 1998). These representations have been called the 'basic building blocks of cognitive

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development' (Nelson & Gruendel, 1981, p. 131). They are working models of how social routines unfold and of what one can expect of social experience. These prototypic knowledge structures are progressively elaborated in the early dialogues with caregivers who help children review, structure and consolidate memories in script-like fashion (Fivush *et al.*, 1992). These dialogues also transform event scripts into autobiographical memories, which link them to the self-system. In this way parents help children identify morally relevant features of their experience and encourage the formation of social cognitive schemas that become chronically accessible (Lapsley & Narvaez, 2004).

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Dual systems and ethical theory

The Standard Model accepted a division of labour between ethical theory and psychology that not only respected the autonomy of morality, but gave it prerogatives to constrain the psychological agenda—to establish its boundary, define its starting points and rein in its explanation. This is what a 'moralized' psychology looked like under the aegis of the Standard Model. From this perspective the turn toward 'System 1' features of moral functioning is to be deplored insofar as it reflects deep confusion about the meaning of moral terms, the normative claims they makes upon us, or the very nature of morality. As we reject this view it is perhaps useful to conclude with a few comments on boundary issues, though we can only do so from a broad perspective here.

The autonomy of morality is foundational to the Kantian ethical tradition. From this perspective there is little for ethical theory to learn from psychology or the cognitive sciences more generally. Morality is *sui generis*, it is asserted, and its normative claims do not rest upon natural or social scientific knowledge. We join with recent trends in ethical naturalism to reject this view (Lapsley & Narvaez, in press). Wong (2006) argues, for example, that while there may be multiple, true moralities there are natural limits on what can count as a true morality, given the realities of human needs, desires and purposes. Moreover the methodological naturalism that he proposes is committed to an integration of morality 'with the most relevant empirical theories about human beings and societies, such as evolutionary theory and developmental psychology' (Wong, 2006, p. xiv). Indeed, psychology's role looms large in many accounts of ethical naturalism (Johnson, 1993; May *et al.*, 1996). As Flanagan (1991, p. 21) put it, 'scientific psychology has the potential for destabilizing as well as for developing and refining certain assumptions underlying traditional moral theory'.

Wong (2006) emphasises two methodological themes. One is that philosophy 'should not employ a distinctive *a priori* method for yielding substantive truth shielded from empirical testing' (p. 30). Another is that 'there is no sharp boundary between epistemology and the science of psychology' (p. 30). His methodological naturalism does not rule out claims asserted on the basis of non-natural analytical, logical or conceptual analysis or by non-empirical methods, only that 'the deliverances of such methods cannot be taken as self-evident or permanent' (p. 30).

It is in this spirit that Lapsley and Narvaez (2005; in press) have called for a 'psychologized morality' in contradistinction to the moralised psychology of the Standard Model. A psychologised morality rejects the notion that morality is *sui generis*; asserts the relative autonomy of psychology; and urges broad integrative theory-building that trades on advances in other domains of psychology, including behavioural neuroscience. It affirms that moral norms have regulative and functional work to do that is explicable in terms of the cultural evolutionary history of the species and the theoretical and empirical literatures of the human sciences (Lapsley & Narvaez, 2005, in press).

This naturalising tendency is shared also by Gigerenzer and by Haidt. For example, Gigerenzer (2008) argues that the science of heuristics is both descriptive and prescriptive, and does not shrink when it comes to questions of 'ought' and normative uncertainty. Moreover, the science of heuristics 'can provide a better understanding of the limits of normative theories of morality' (p. 20), particularly with respect to those forms of consequentialism that trade on the notion of ideal maximisation. Regarding the social intuitionist model, Haidt and Bjorkland (2008) argue that moral truths are 'anthropocentric truths' (p. 212); and that 'ought' statements must be grounded eventually by 'a particular understanding of human nature and moral psychology' (p. 215; see also Casebeer, 2003). Sunstein (2005) does hold that some normative theory is required in order to show that some misbegotten heuristics lead to 'moral error' and proposes a 'weak consequentialism' as a candidate ethical theory to this end. However, the necessity of positing such a normative framework for understanding moral judgement also is contested (Pizarro & Uhlmann, 2005).

In sum a psychologised morality stands with a methodological naturalism that attempts to ground ethical theory by what is known about 'human motivation, the nature of the self, the nature of human concepts, how our reason works, how we are socially constituted and a host of other facts about who we are and how the mind operates' (Johnson, 1996, p. 49). Of course, coining an expression like 'psychologized morality' is itself a heuristic device meant to draw a contrast with certain features of the Standard Model in moral development. It need not point to anything other than doing empirically responsible moral philosophy on the one hand and philosophically responsible moral psychology on the other. Moral psychologists and ethical (methodological) naturalists are fellow travellers in this regard and there is much promise of productive collaboration at the disciplinary boundary.

Conclusion

We should like to conclude by returning to Kohlberg's project. Although the 'System 1' theories reviewed here stand in contrast to the concerns of the Standard Model and redraw the boundary between ethical theory and moral psychology in ways to which the Standard Model can only object, we would like to think that Kohlberg would support at least the naturalising tendencies of a 'psychologized morality' described here. In the tradition of Dewey (1922), Kohlberg also embraced a kind of

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philosophical naturalism (in the form of genetic epistemology) in his claim that developmental stage theory undermined certain philosophical positions (maturationism, associationism). He argued that 'empirical evidence could nullify or undermine the plausibility of our normative claims' (Kohlberg *et al.*, 1983, p. 165) even if such evidence could not prove them. And he understood that the study of development necessarily conflates descriptive claims about what is the case and evaluative claims about 'good' development. In our view it is this whiff of naturalism in moral development that will have enduring significance. Although the narrow confines of stage theory no longer seem a promising option, the emerging problematic in moral psychology will forever bear the mark of its true pioneer.

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Notes

1. George Herbert Mead (1934) anticipated the dual-process distinction in the second supplementary essay of this volume. Here he distinguished between 'the biologic individual' and the 'socially self-conscious individual', where the 'distinction answers roughly to that drawn between conduct which does not involve conscious reasoning and that which does' (p. 347). We thank Don Collins Reed for bringing this to our attention.
2. Marvin Berkowitz made this comment during a roundtable discussion at the 1997 annual meeting of the Association for Moral Education in Atlanta, chaired by the first author.

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