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A process ontology for persons and their development

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A B S T R A C T

Persons are socio-cultural emergents—emerging progressively in the bio-psychological development of the individual. Persons are special kinds of agents, crucially characterized by their abilities to participate in the constitution of emergent social ontologies. I will present a model of these special bio-cultural relationships, and argue that modeling these relationships requires revisions in conceptions about the ontology of social realities, the relationships between agency and cognition, and naturalism and normativity.

Persons are often considered to be autonomous psychological individuals who happen to function within social settings, and at other times as having a thorough social ontology, being constituted as some sort of intersection of socio-cultural processes and meanings. Neither reductive direction is correct, but it can be difficult to combine the ontology of persons as psychological agents with the ontology of persons as socio-cultural entities. A major focus of this paper is to provide a process ontology for persons that can make sense of these two fundamental characteristics of persons as inherent *aspects* of a unified underlying ontology.

Accordingly, I will outline a model of the developmental ontology of social persons that provides an integration of both aspects. The framework within which this model is constructed involves several crucial metaphysical assumptions which are developed elsewhere and will be assumed here (Bickhard, 2009b):

1. A process metaphysics,
2. That makes sense of genuine ontological emergence, and
3. In particular, makes sense of the emergence of normative phenomena, with representation (with normative values of true or false) as the simplest kind of normativity considered in this paper.[1]

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[1] Elsewhere I argue that biological function is the most primitive form of normative emergence, and that representation emerges as an aspect of a special kind of anticipatory function (Bickhard, 1993, 2004a, 2009b; Christensen & Bickhard, 2002).

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I will be arguing that *representation* emerges as an aspect of agency, and that *persons* emerge as a special social-ontological kind of agent. Social knowledge, thus, is an aspect of social agency, an inherent aspect of social agent ontology—not a data bank perhaps used by but nevertheless independent of the individual agent.

Social ontology, for its part, emerges in special kinds of relationships among agents. Persons, then, are the special kinds of agents that co-constitute social realities—and such co-constitution involves its own representational and cognitive properties. The social person is emergent in the psychological individual in virtue of the specially social form of agency—and concomitant knowledge and cognition—that develops in that individual.

In addition, multiple further properties of social persons as agents follow from the basic pragmatic, interactive, nature of representation and cognition. Three that are important here are: (1) a necessary *constructivism* and consequent constructivist relationship between learning and development, (2) a realm of *implicit presuppositions*, and (3) an ontology of *levels of knowing* that itself has multiple further consequences, of which I will be most concerned with a resultant ontology for *values*.[2]

1. Representation

Presuppositions concerning the nature of representation frame important issues in the investigation of the ontology of persons. In particular, if representation is considered to be some sort of encoding correspondence between representation and represented, with action and interaction making use of these encodings in the course of judgments and decision making involved in those actions and interactions, then the agentive nature of persons becomes metaphysically differentiated from the encoded knowledge of persons.

In such a model, the encoded data could, in principle, be replaced with completely different "information," and the person as abstract agent would remain the same. If representation is inherently agentive itself, however—inherently interactive—then the way is open to understanding persons as agents that are inherently related to their knowledge in and of the world. If representation is an emergent of interactivity, then persons have agency and cognition as *aspects* of the same underlying ontology, rather than having those aspects split into two fundamentally different kinds of phenomena. I have argued for such an interactive approach to representation for some time (Bickhard, 1980a, 1993, 2009a, 2009b, 2009c; Bickhard & Richie, 1983; Bickhard & Terveen, 1995), and will outline some of its crucial features here. There are four issues regarding representation that will be addressed:

1. A brief outline of the interactivist model of representation;
2. Some of the problems that are encountered by past and current models of representation;
3. A major consequence of the interactivist model of representation for processes of learning and development;
4. And a second consequence of the generation of a hierarchy of levels of potential knowing.

1.1. The interactive model

The model of representation that grounds and frames this work is a generally pragmatist model, with representation emerging as an aspect of organisms' interactions with their environments. In its pragmatism, the model has strong convergences with Peirce and Piaget. It also, therefore, differs fundamentally from the conceptions of representation that have dominated Western thought for over two millennia.

There are several consequences of this model of representation that will be needed for later developments, so I begin with a brief outline of an interactivist model of representation, and then draw out some of those consequences.

[2] There are numerous further consequences—for example, an inherent integration of cognition and motivation (Bickhard, 2003).

A complex animal must, among many other things, select and guide its interactions. This selection must take place within some indicated range of interactions that are anticipated to be possible in the current situation: it does no good to select "open the refrigerator" if there is no refrigerator at hand. The organization of indicated potential interactions can become complex in sufficiently complex organisms, including multiple possibilities at a given moment—should the frog flick its tongue this way in an attempt to eat a fly, or that way in an attempt to eat a worm—and conditionally iterated possibilities, in which one interaction might create the conditions that make another interaction possible—I *can* open the refrigerator if I first walk into the kitchen.

This organization of conditional interaction possibilities is called the organism's *situation knowledge*.[3] Interaction possibilities change with time, as results of both the organism's own actions and interactions, and exogenous changes and activities in the environment. Perception serves a primary function of differentiating kinds of environments and environmental changes in order to guide the maintenance and updating of this situation knowledge (Bickhard, 1980a, 2009b)—is this an environment in which there is a potential for tongue-flicking and fly-eating, or not? The processes of such situation knowledge maintenance and updating are called *apperception*.

1.1.1. Truth value

Situation knowledge is representational in the most fundamental normative sense: it has truth value—an indication that some kind of interaction is possible may be true or it may be false. Representation, thus, emerges out of agentive interaction systems. It constitutes the "what is possible" aspect of interaction guidance and selection.

Furthermore, the truth value of such an indication can be at least fallibly determined by the organism itself: if the indicated interaction is engaged in, but proceeds in a manner that is outside the range of possibilities indicated, then that indication has been falsified. In this manner, error-guided behavior and learning are enabled.[4]

1.1.1.1. Objects. Indications of potential interactions don't look much like canonical forms of representation. To illustrate that the model has the resources for modeling more complex forms of representation, I will outline how a small manipulable object can be represented within this framework.[5]

Consider a child's toy wooden block. There are multiple visual scans that are possible and multiple manipulations. Some of the scans become possible if an appropriate initial manipulation is performed: turning the block over so that the previously back-side can be seen. One central property of such an organization of interaction possibilities is that any one of them is reachable from any other, so long as appropriate intermediate interactions are engaged in: the organization of possible interactions with the block is internally completely reachable. Another is that this reachability is invariant under a large class of other interactions that could be engaged in and other things that could happen: e.g., the toddler could leave the block on the floor and go into another room, but regain the interaction possibilities by coming back into the room in which the block was left. This invariance is not total, however: crushing, burning, and multiple other phenomena can destroy or alter these interaction possibilities.

From the toddler's perspective, such invariance under manipulations and locomotions of an internally reachable organization of interaction possibilities is what constitutes something as an object. An adult will have some additional notions about what constitutes the object—such as earth, air, fire, and water, or perhaps atoms and molecules—but those are theories *about* the object, not primary representations *of* the object. For my current purposes, it suffices that the interactive model has resources for approaching more complex kinds of representation.[6]

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[3] Earlier, I called this the *situation image*, but the word "image" has unfortunate connotations of the kind of representation that I have argued against (Bickhard, 1980a; Bickhard & Richie, 1983).

[4] This is a crucial contrast with standard models of representation. See the discussion below in the text.

[5] This "object representation" model is basically a translation of Piaget's model into the language of the interactivist model (Piaget, 1954). This is possible because of the common action framework between the two models.

[6] See Bickhard (2004a, 2009b, in preparation) for discussions of other kinds of representation.

1.1.2. Representational content

Representational content emerges naturally and intrinsically in this model. Indications of interaction possibilities—anticipations of interaction possibilities—will, in general, be correct in some environments and incorrect in others. An indication of such a possibility, therefore, implicitly presupposes that some sufficient subset of those supportive environmental conditions obtains in the current situation.

The implicit predication that *this* environment is one of the kind that is appropriate for indicated interactions thereby implicitly predicates that *this* environment satisfies the presupposed contents. There are a number of important properties of this model of representation and representational content,[7] but of primary relevance here is that:

1. Content is inherently emergent in the nature of indications of interaction possibilities. The problem of the emergent origin of representation does not have to be hidden in empty appeals to prior evolution, and
2. Content is constituted in implicit presuppositions of the activities of the organism.

1.2. What's wrong with standard models of representation?

Representation has, for millennia, been considered to be constituted in some special sort of correspondence between the representational element (or pattern) and that which is being represented. For the Greeks, this was commonly a correspondence of form, such as Aristotle's signet leaving its form in wax (Aristotle, 1908). Since Locke, it has generally been a more indirect correspondence, perhaps causal or lawful (Campbell, 1992). The most common modern equivalent of signet-rings-being-pressed-into-wax is the notion of transduction: in visual perception, for example, light is assumed to be transduced into representation in the retina (or somewhere!), on the basis of which further representations are constructed or inferred (Fodor, 1986; Fodor & Pylyshyn, 1981). The organism is modeled as peering back down the input stream—as a "spectator" on the world (Dewey, 1960/1929; Tiles, 1990)—trying to see where that stream is coming from.[8] In such a view, transduction is the modern equivalent of the pineal gland (Haugeland, 1998): it is where the causal world interfaces with the intentional world of mind.

1.2.1. Troubles with correspondence representation

There is, however, a large and growing family of problems with such views. Any one of them suffices to refute the correspondence models, if only there were an alternative. Historically, there has not been an alternative, so the problems accumulated, with the background assumption that they were to be ignored as being unsolvable, or that they would be addressed "later." I will outline three of these issues.

1.2.1.1. The copy argument. One of these is due to Piaget. It is quite simple: if our representations are supposed to be in some sense a copy of the world, then we would have to already know the world in order to construct our inner copy of it—a circularity (Piaget, 1970).

1.2.1.2. Incoherence. Such circularities occur repeatedly in encoding correspondence models because such models presuppose what they are supposed to explain: the nature and origin of representational content. There *are* genuine encodings, but they require that what is to be represented be already known. Morse code, for example, codes "s" as "…", and that works perfectly well—and is useful

[7] Some properties discussed elsewhere include: interactive representation is inherently future oriented and modal; the implicitness of content provides a diagnosis and resolution of the frame problems; representation is inherently embodied, situated, and from a point of view; and others (Bickhard, 2001, 2009b; Bickhard & Terveen, 1995).

[8] That input stream, of course, extends indefinitely toward the Big Bang, and branches wildly—and there are correspondences with every bit of the entire branching lattice. There is no way to determine from the perspective of the organism what the "crucial" correspondence is that is supposed to be the representational correspondence, and, even if there were, there would need to be a prior representation of whatever is being represented in order to specify it, which is the representational problem all over again (Bickhard & Terveen, 1995).

because dots and dashes can be sent over telegraph wires while characters cannot. Similarly, neutrino counts can encode properties of fusion processes in the sun, although no direct measurement is possible. In all such cases, however, what is to be encoded must already be represented—"s" or "the fusion properties." The encodings are stand-ins for "s," "fusion properties," or whatever, and what is being stood-in-for must itself be represented by any agent using the encodings in order for the stand-in encoding relationship to exist for that agent.

Furthermore, although one encoding can be specified in terms of others, and perhaps those in terms of still others, such a hierarchy of definitional stand-in relationships must have a ground, and that base level of representations cannot consist of encodings: there is nothing further for them to stand-in for.

Partial recognition of this problem yields such conclusions as that some adequate base set of representations must be innate (Fodor, 1975, 1981), so that others can be defined in terms of them. The correspondence models of representation, however, do not offer any way that evolution could have generated those basic representations either—and if it is assumed that there is some way that evolution could have done so, there is no reason on offer why learning and development could not generate new, emergent representations in a similar way (Bickhard, 2004a, 2009b).

The underlying presupposition in these models, then, is that the basic set of representations consists of encodings, but this yields its own fatal problems. If a presumed basic representation *X* is taken to be defined in terms of some other representation(s), then it is not basic, contrary to assumption. The only resource for specifying the content of *X*, then, is *X* itself, but this yields " '*X*' represents whatever it is that '*X*' represents" or "'*X*' stands-in for '*X*'" or "'*X*' represents *X*", none of which succeeds in rendering "*X*" as a representation of anything. The encoding correspondence models, then, cannot account for their own base sets, yet they must do so if they are to account for representation. There is a fundamental incoherence in their foundational assumptions.

Simply put, encoding correspondence models cannot account for the emergent origin of representation, and to presuppose that they can yields multiple kinds of circularities, such as Piaget's copy argument.[9]

1.2.1.3. System detectable error. Another problem is that of representational error. This has come to the attention of the current literature in the form of needing to account for the possibility of error: how can a representation represent incorrectly? The problem arises because, if the special correspondence exists with something that constitutes a representational correspondence, an encoding, then the representation exists and it is correct. On the other hand, if the special correspondence does not exist, then the representation does not exist—and those are the only two possibilities. Unfortunately, there is a third case that needs to be modeled: the representation exists, but it is incorrect. This has generated a minor industry of attempts to account for the very possibility of representational error, but there is no consensus and no success in doing so (Bickhard, 2004a, 2009b; Levine & Bickhard, 1999).

Furthermore, the problem is approached in this literature from an outside standpoint—an observer of the system or organism, rather than the organism itself. That is, the problem that is addressed[10] is that of the possibility of observer-judged error, not the possibility of organism detectable error.

If organism detectable error is not possible, however, then error-guided behavior and learning are not possible. We know that error-guided behavior exists and we know that learning exists. Therefore, we know that organism detectable error exists, and that any model that cannot account for it is at least incomplete, and any model that makes it impossible is refuted.

Some sense of the depth of this problem can be obtained by realizing that it is equivalent to a classic radical skeptical argument: In order to determine whether our representations are correct, we would have to somehow step outside of ourselves to compare our representation with what we are trying to

[9] The infamous regress of interpreters of "empty symbols" is yet another manifestation of this circularity: the regress is the basic circularity of presupposing what is supposed to be accounted for stretched out in an unbounded sequence of "content-providers"—interpreters (Bickhard & Terveen, 1995).

[10] But not solved.

represent to see if they match.[11] We cannot step outside of ourselves, so we cannot determine whether our representations are true or false. This argument has been known for quite some time, but has not been resolved or transcended.

I submit that it has not been resolved because it is a valid argument—it happens to be unsound, however, because it is based on a false conception of the nature of representation. In particular, it is based on correspondence, encoding, notions of representation. If the only way to check our representation constituting correspondences is to make use of them again, then they check only themselves, and this is no check at all. But, because error-guided behavior and learning do occur, the conclusion of this skeptical argument has to be false, and, if the argument is valid, then there must be an incorrect premise. That premise is the encoding correspondence premise (Bickhard, 2004a, 2009b).

In contrast, if an interaction is indicated as being possible in the current situation, and that interaction is engaged but does not proceed as indicated, then it is *false*, and it is *falsified* in a manner detectable from within the organism itself: the inner processes that constitute the organism's participation in the interaction will not proceed as indicated, and that is a functional failure of indication that does not require a circular re-representation of the world in order to determine that it is false. It is available for guiding behavior and learning.

This one criterion of being able to account for organism detectable error is in itself sufficient to refute every contemporary model of representation (Bickhard, 2004a, 2009b, in preparation; Bickhard & Terveen, 1995). It is the future orientation, the anticipatory nature, of indications of interaction potentialities that provides a solution to this problem in the pragmatist interactive model of representation: anticipations can be in error, and can be found to be in error if the future does not accord with the anticipations (Bickhard, 2009b).

The pragmatic, interactive model of representation, then, has claim to be both adequate to representational phenomena, including complex representations such as objects,[12] and also to be the only approach that can resolve the problem of organism detectable error, and thus account for the possibility of error-guided behavior and learning.

1.3. Learning and development

If it is assumed that representation can be impressed into a passive mind, like a signet ring into wax, then it is tempting to conclude that perception and learning take place via phenomena such as transduction and induction.[13] In such a framework, there is little work for development to do.

If, however, representations, thus cognition, are emergents of interaction systems, then there is no temptation to conclude that interactive systems can be impressed by the environment into a passive mind. Interaction systems must be constructed.

Furthermore, such constructions cannot be prescient, so they must be fallible trials in a variation and selection process: an action-based model of representation forces an evolutionary epistemology (Bickhard, 2009b, in preparation; Campbell, 1974).

In complex organisms, these constructive processes make use of prior constructions in a recursive manner, yielding a recursive constructivism, and, furthermore, the construction processes themselves can develop in a recursive manner—yielding a *meta*-recursive constructivism.[14]

Finally, it should be pointed out that the word "construction" has the connotation of an agent doing the constructing using resources that are distinct from the agentive construction processes themselves. This kind of process can certainly occur, e.g., trial and error constructions of a drawing or painting, but,

[11] That is, we would have to become external observers on ourselves and our environments. This is precisely the external-observer stance assumed in standard approaches to representational error, and in many models of representation per se (Bickhard & Terveen, 1995).

[12] For responses to other challenges, e.g., representations of abstractions, such as numbers, see Bickhard (2009b, in preparation).

[13] Induction: the tracing of a pattern into the wax over time.

[14] Note that Piaget's model is a recursive constructivism, but it is not *meta*-recursive: equilibration is equilibration and does not itself significantly develop (Bickhard & Campbell, 1989; Campbell & Bickhard, 1992).

most fundamentally, the process is more akin to self-organization, in which ongoing processes yield patterns and structures in the course of their own ongoing activities, such as the formation of rolling boils in a pan of heated water.

1.4. Levels of knowing

One further consequence of this model that I will need is a hierarchy of levels of knowing. I will explore two consequences of these levels that are of relevance to this paper: 1) realms of implicitness relating to self and identity, and 2) an ontology for values.

An interactive system represents characteristics of its environment via the implicit presuppositions of (indications of the potentiality of) its interactions. Such a system might itself have properties that would be worth representing—e.g., the fact that one of the heuristic strategies in that system instantiates the number three in its organization of "try three times before switching to another procedure." Properties of this first level system can be represented by a higher level system that interacts with it in essentially the same manner—via implicit presuppositions of interactive anticipations—as the first level system represents its environment.

Such a second level system might itself, in turn, have properties that could be represented at a third level, and so on. There is no in-principle bound on these levels of knowing, though in practice we rarely find more than three or perhaps four.

One immediate consequence is that, together with the evolutionary, epistemological constructivism that an action-based model forces, the knowing levels impose a sequence on development: it is not possible for an interactive system to be constructed at level $N+1$ if there is nothing at level N for it to interact with. Therefore, the levels must be developmentally ascended one at a time within any given domain of construction[15]: the knowing levels force a kind of stage sequence of development, one that we find in the developmental data (Bickhard, 1992; Campbell & Bickhard, 1986).

1.4.1. Self and identity

There are no consensual notions of self or identity, and the diversity of perspectives extends into the past as well as across current literature (Martin & Barresi, 2003; Martin, Sugarman, & Thompson, 2003; Sorabji, 2006; Taylor, 1985, 1989; Valsiner & van der Veer, 2000). There are, however, strong ontological candidates that emerge from the knowing levels model.

I will outline three directly relevant properties that emerge from the knowing levels: (1) Interactions and interaction indications involve presuppositions concerning the conditions that would support them. So also do broader and more persistent manners of functioning in the world, and the presuppositions involved are correspondingly broader and more persistent. (2) Furthermore, such presuppositions can be reflexive—about the organism or agent. And, finally, (3) presuppositions can themselves have presuppositions.

General ways of interacting in the world, thus, involve presuppositions about the agent, and perhaps at multiple levels. Infants, for example, who are fed on a strict schedule, with no responsiveness to their crying, will likely learn to subdue expressions of discomfort from hunger because they will only increase the discomfort. Such a manner of dealing with the world, however, presupposes that no one will respond. This is, by assumption, correct in the immediate experience of the infant, but there is no cognitive capability for the infant to restrict this presupposition to just these "caregivers"—the presupposition is inherently unbounded.

The presupposition that no one will respond, thus, presupposes that no one cares enough to respond, which, in turn, presupposes that the infant is not important enough for anyone to care. These are the sorts of assumptions that object relation theorists, for example, attempt to address, but they have no way to do so other than to posit explicit memories and cognitions, and infants are not capable of representations of this sophistication at these early ages (Christopher & Bickhard, 1994; Christopher, Bickhard, & Lambeth, 2001). Recognizing that these aspects of functioning in the world can be implicit

[15] Though the number of levels in which constructions have occurred can differ from one domain to another (Campbell & Bickhard, 1986).

and presuppositional accounts for such phenomena without having to posit false cognitive capabilities for the infant.

As infant and toddler develop, ways of dealing with the physical and the social world are organized and constructed. These will involve presuppositions about those physical and social worlds, as well as about the toddler within them. In this sense, the toddler becomes an emergent agent, a self in a restricted sense.

With the advent of the possibility of second level knowing,[16] the child can develop meta-strategies, such as finding excuses for avoiding the playground. Such second level processes involve presuppositions about the world and the child—in this case, perhaps something like "I'm not good at sports, and the kids will make fun of me." Here we have some explicit representations about the self, and also presuppositions of those: perhaps "I have no other characteristics that would make me acceptable to the other kids." The child in this manner begins to develop a more explicit sense of self, though not in terms of explicit (encoded) propositional beliefs—instead, in terms of presuppositions of the representations and strategies that are developed for dealing with the social world.

With the third level of knowing, these senses of self can be themselves reflected upon with respect to their own possibilities and relations to other realms of consideration. In particular, the self can be considered with respect to values that are satisfied and not satisfied, in multiple realms of possible concern—such as issues of social and sexual competence and attractiveness, morality and ethics, religious concerns, and so on. In short, the third level considerations yield the development of what could be called identity (Campbell & Bickhard, 1986).

1.4.2. An ontology of values

Crucial to these developments are those of values (Bickhard, 2006; Campbell & Bickhard, 1986). Interactions with an environment can be guided by goals, where goals can involve representations of goal-states. But goals guide interaction only when the organism has learned how to approach such goals. Otherwise, activated goals will tend to evoke learning processes, constructive processes, toward being able to interactively achieve the goals. That is, goals can guide interaction, but can also guide learning and development (Bickhard, 2006, in preparation).

At second and third knowing levels—second and third levels of reflection—goals will be *about* the organization and activities of the individual. They will guide interactions, learning, and development of that individual. In that sense, they constitute *values*. They can also be about other values: second and third order desires (Frankfurt, 1971).

Values will tend to develop at a given level of reflection with respect to organizations of process at lower levels. That is, they will tend to *unfold* values that are already implicit in the functioning at lower levels. In becoming more explicit via such unfolding, *conflicts* among values and between values and other ways of being can also become more explicit. Unfolding values inherent in one aspect of a child's way of being in the world may, for example, contradict other aspects of the way in which he or she functions in the world—or perhaps distinct unfolded values will explicitly contradict each other (Campbell & Bickhard, 1986). Even if there is no explicit contradiction, different values and their ways of being may be in pragmatic conflict in the sense that not both can be realized together. In all of these ways, coherence is a meta-value, functioning at least implicitly in the normative value-guided development of the individual.

1.4.2.1. Reflexive values. An important class of values is those that are reflexive: that are about the entire person. I may have a value of being kind or being fearless, for example. One crucial property of such reflexive values is that they cannot be consistently approached in an instrumental fashion. I can decide to get to the store on one route rather than another, or to use this tool rather than that tool in some task, but I cannot similarly simply decide to be in the world in a kind or fearless manner. Instrumentality requires a distinction between the agent and the (means toward the) task, while reflexive values do not permit that distinction. To attempt to instrumentally approach a reflexive value is to command oneself

[16] Which occurs at about age 3.5–4 years of (Bickhard, 1992; Campbell & Bickhard, 1986).

to spontaneously be kind or fearless—but to command oneself to be spontaneous in any sense is to impose a contradiction, a double bind.

On the other hand, such reflexive values can be approached via creating experiences and environments that might tend to evoke development of the desired values. That is, an individual cannot simply decide to satisfy reflexive values, but can nurture his or her development toward those values. One might attempt to become a kind person, for example, by associating with kind people, practicing kind efforts even if the kindness is not (yet) fully felt (spontaneous), undertaking psychotherapy to try to change basic assumptions of angry or contemptuous or fearful stances toward life and others, and so on.[17]

2. The social ontology of persons

Agents with goals and values, interacting with and developing within their environments, sounds like a psychological ontology. And so it is. So where is the socio-cultural ontology? How does that integrate?

I will argue that the person develops as an agent, but as a special emergent kind of agent, generated within the societies and cultures within which the individual develops (Martin, 2003). The person, then, is psychological (and biological) as an agent, with interactive abilities, goals, values, and so on, but is social with respect to the kind of agent. Agency per se can be biological and psychological, but the facts, origins, contents, values, and ontologies of higher level agency as persons are inherently social. Social realities are constituted in multiple interactive and potential interactive relationships among persons as social agents, but the developmental emergence of such persons, as well as the ongoing functioning of such persons, is possible only within and with those social realities. Social persons and the social realities that they co-constitute are metaphysically dual to each other: they can exist only with respect to each other.

This is not a mirroring or reflection of social reality into the psychological level of the person—it is not reductionist either upward or downward. The social person is self-constructed and self-organized within the enabling constraints of the social world and its possibilities.

To present the model that makes sense of these claims, I first address the ontology of social realities, in terms of what have been dubbed *situation conventions*, and then outline some of the special characteristics of persons as socially constitutive agents within and with such social realities.

2.1. Situation conventions

An agent in an environment needs to characterize the interactive potentialities of that environment in order to act and to survive—needs to apperceptively construct situation knowledge. Such potentialities are reasonably clear with respect to rocks and trees, but special situations arise when the environment contains other agents, especially persons.

In particular, for one agent to characterize a situation that involves another agent requires characterizing that other agent, but the interactive potentialities afforded by that agent will depend on aspects of that other agent that are not readily perceptually apperceivable. These include the agent's mood, beliefs, and so on, and, most especially, that other agent's characterization of his or her situation—including their characterization of the first agent.

The problem of interactively characterizing the situation, thus, is reciprocal and symmetric, and must be resolved (insofar as it can be resolved) jointly. Such a joint interest in a resolution to a symmetric problem constitutes a coordination problem (Schelling, 1963), and Lewis proposed that a convention be modeled as a solution to a coordination problem (Lewis, 1969). In the class of cases outlined, the coordination problem, thus the conventionality of a solution, is about the joint situation, and I accordingly call such solutions, such joint and interactively consistent situation knowledge, *situation conventions*—conventions about the nature of the (social) situation (Bickhard, 1980a).

[17] Inclusive "or"s.

Within the category of situation conventions, there are those that are momentary and not likely to ever be repeated, such as the common understanding of an utterance in a conversation, and those that are more general, across repeated situations and perhaps large numbers of people, which are called institutionalized conventions. Language is itself a convention—a specialized kind of convention, for the construction of conventional utterances, which transform situation conventions (Bickhard, 2007, 2009b, in preparation). This model of language as a pragmatic, operative system—interactions with situation conventions, not actions performed with encoded propositions—has partial precursors in Frege's model of quantifiers as predicate operators, Wittgenstein's notions of language and use, speech act theory, functional grammars, Kaplan's character, and others, but this interactive model construes *all* utterances, and *all parts* of utterances, as apperceptively operative. Since encodings serving a primary epistemological function are not possible—they can only stand-in for already existing representations—then language cannot have the central encoding representational function(s) that it is universally assumed to have. This model of utterances as apperceptively based interactions with situation conventions transcends those encoding problems (Bickhard, 1980a, 2007, 2009b, in preparation; Bickhard & Terveen, 1995).

Furthermore, because social situation conventions are constituted as relations among characterizations of the *future potentials* of the social situation convention, the potentialities for *further language* constitute major portions of all social realities: language operates on social realities, and its potentialities are central to the ontologies of social realities.

2.2. Persons: social level agents

The infant develops as a biological and psychological agent, but that agency is progressively adapted to the society and cultural environment in which the individual is developing. The social realities of society and culture are themselves emergent in the relationships among the participating and constituting persons, and the social persons that developmentally adapt to those realities are similarly emergent—a developmental emergence of a socio-cultural agent, a kind of agent that cannot develop and cannot exercise its interactive capabilities except in the context of the realities of the socio-cultural processes which it comes to co-constitute along with other participant persons.[18]

The person, then, *is* a psychological, as well as a biological, agent, but the developmental differentiations, specializations, cross-functional synergies, and resultant additional emergents, generate an emergent social agent—a person.

2.2.1. Values

Some special attention needs to be given to values, especially reflexive values. An individual can learn and develop multiple skills as possible instrumentalities toward various goals, and can evaluate whether or not to make instrumental use of them in general or in particular situations. But there is no more central agent beyond the most basic or central values from which any such evaluation of those central values could take place—especially for reflexive values. The problem that arises is that, while skills, for example, can be used and learned instrumentally, it would seem that there is no way in which the spontaneous activity of a social agent could decide to adopt any particular values: to do so encounters the self double-bind mentioned earlier of commanding oneself to be in some manner spontaneously. What, then, is the relation between socio-cultural values and the values that individual persons develop?

The problem here is created by the thrall of the model of an agent outside of its own activities that can independently determine what it wants to do and how to do it, in which its values are selected rather than developed—a metaphysically independent agent, a metaphysical individualism. In such an individualism, *everything* is instrumental.

Persons, however, are not metaphysically independent. Instead, they are deeply dependent on and formed within and together with their socio-cultural environments. To make sense of this, however,

[18] "people produce history and culture and are reciprocally produced by them" (Stetsenko, 2008).

requires an alternative to the model of the austere "rational" agent who picks and chooses both means and ends—independently, arbitrarily.

Instead of "standing" outside of the world in this way, persons, along with their biological and psychological instantiations, are inherently and always in process, both internally and in interaction with their environments. Actions and interactions are aspects of the ongoing self-organizing of this activity. And developmental "constructions" are at root products of this self-organization. Only in subsidiary ways is there a differentiation between agent and action that permits the differentiation between ends and instrumental means.

The development of values, then, is inherent in the functioning of interaction, learning, and the knowing levels. *Which* values are developed, however, is the product of a dialectic between the developing person and the potentialities outlined and enabled by the socio-cultural circumstances of that person. New values unfold values that are already implicit in the manner of being in the world that the person has thus far developed, but that 'unfolding' relation does not fully determine what those values must be. The culture presents various value possibilities in its narratives, religions, ideologies, and presuppositions, and society enables or inhibits living those values in various ways. Value development, then, emerges in a dialectic between the potentialities and presuppositions of the person and the possibilities of society and culture.

Furthermore, as with goals in general, values can guide interaction, but they can also guide learning and development. The dialectic, then, is multiform, with values unfolding what is already implicit in the person, into the space of possibilities framed by the social and cultural environment, which, in turn, participate in guiding the further activity and development of the person (Bickhard, 2004b, 2008, in preparation).

2.2.2. The social ontology of values

Values can be implicit in manners of being in the world, and can be unfolded into explicit values. This entails that the manners of being in the world that are afforded and modeled by one's socio-cultural environment involve their own implicit values—which might, in turn, (though not necessarily) involve their own explicit statements and rationales within that culture. To develop such ways of being in the world on the part of an individual person, therefore, is to partake in the values that are implicit, and perhaps explicit, in those ways of being.

Such cultural level values can exist across large populations, and multiple generations (Spinosa, Flores, & Dreyfus, 1997). A person does not have to undertake any of those manners of being in order to partake of the values involved: simply to accept that a particular manner of being is legitimate and worthwhile is to accept the implicit range of values involved, even if those are not directly engaged in one's own life. It is cultural level values that construe the life of a mendicant monk as worthwhile, and do so even for those who do not undertake the life of a mendicant monk.

2.2.3. Personality

There is an important kind of presupposition that is intermediate in scope between the generally short-term presuppositions of particular interactions and those at a socio-cultural level. These will be across smaller groups, and constitute senses of group-identity, special group values, and so on. I want to focus here, however, on a kind of value that is inherent in an individual person's ways of being, and, even if shared, are not necessarily understood to be shared.

These will involve, most importantly, presuppositions about oneself—presuppositions about one's legitimacy in society, as a potential sexual being, as a participant in the world of status and esteem, and so on. This realm of presuppositions is classically the focus of personality studies, though there have in general been no resources for understanding such presuppositions *as such*: they have tended to be construed as explicit beliefs or representations, which raises the issue of how they could be a belief of a person even though that person (perhaps) has never had such a thought. A classical "solution" to this apparent paradox is to posit an Unconscious realm of explicit beliefs that is somehow inaccessible to the person per se. But, in addition to being rather ad hoc, this purported solution encounters the fact that infants and toddlers do not have the cognitive capacities that are requisite for many of these "beliefs" formed in early development. Such problems afflict the Freudian Unconscious, but also, for

example, contemporary notions of "internal working models" in attachment theory (Bowlby, 1988; Bretherton, 1993, 2005; Bretherton & Munholland, 1999).[19]

Recognizing that presuppositions of these sorts are necessarily involved in persons' being and activity in society provides a model for these personality level phenomena that avoids these basic problems.

3. Socio-self-directedness

Persons are developmentally emergent in the social environments that they co-constitute. They ontologically partake of those socio-cultural realities, though as co-constituting agents rather than as interiorized or internalized loci of socio-cultural processes per se.

The organization and functioning of such agency involves presuppositions at multiple levels and scopes, from individual interactions to individual persons to socio-cultural realms of value and legitimacy.

Throughout the life-span, development is guided by values and by the unfolding of values. That unfolding process, in turn, constitutes a dialectic between the range of implicit presuppositions in the person and the range of manners of being available in the socio-cultural environment—which involve their own presuppositions of value and legitimacy.

It is this dialectic, in particular, that constitutes the underlying developmental dynamic with both self-generating and socio-culturally enabled and constrained possibilities. Reflection and reflective discussion and argument constitute a still further realm of potential legitimation and critique.

It is the sense in which persons are self-directed, both in interaction and in development, that supports the individual level ethical and moral responsibilities that society assigns to them. It is the sense in which the potentialities of persons are enabled, constrained, and constituted by society that supports persons' senses of identity with, belonging to, and obligations to that society.

Persons, then, are both self-generated *and* socially constituted. Neither reductive direction holds.

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[19] Adler's notion of the unconscious as "the not understood" is much closer to that suggested in the text, but Adler too had no way of modeling how a person could believe something but "not understand" that they believed it (Bickhard, 1980b; Christopher & Bickhard, 1994).

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