

Language and the signifying object: from convention to imagination *

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[It] is always difficult for the psychologist to think of anything ‘existing’ in a culture ... We are, alas, wedded to the idea that human reality exists within the limiting boundary of the human skin! (Bruner 1966: 321).

The body is our general medium for having a world ... Sometimes the meaning aimed at cannot be achieved by the body’s natural means; it must then build itself an instrument, and it projects thereby around itself a cultural world. (Merleau-Ponty 1962: 146).

Observation of O. at 2:4;5. Father goes to get him from the car seat. O. keeps his eyes closed, eyelids quivering slightly, with a slight smile. Then he opens his eyes and says “I’m sleeping”, laughing.

1. Intersubjectivity and the ontology of the social

This chapter has two primary aims. The first is to propose an account of the social nature of the shared mind. The second is to put forward arguments and evidence for regarding material objects, especially artefacts, as a crucial ingredient of intersubjectivity and its development. In this section we advance philosophical and psychological arguments for considering the shared mind to be fundamentally social. We critically assess the methodological individualism guiding the construal by most philosophers and psychologists of the notion of intersubjectivity, and propose an alternative construal of intersubjectivity which sees it as rooted in an *ontology of the social*, whose methodological counterpart is the Durkheimian concept of the “social fact”.

There are two fundamentally different ways to conceive of the “shared mind”. The first of these is predicated upon the foundational status of individual mental or representational content, and in particular of intentional states such as beliefs. An intentional state is characterized, as Searle (1983) puts it, by its directedness to whatever it is *about*. Intentional states can be about anything at all: object, event or process, real or imaginary, and hence can also be directed at other

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intentional states, whether those of the subject or that of another subject. I can, for example, wish that I had thought of an idea before someone else did, or I can believe that my next door neighbour believes in fairies, and so on. It is on this basis that “Theory theories” of intersubjectivity are constructed: intersubjectivity is considered to be a matter of *knowledge* (or belief, or intentional states in general). On this account, intersubjectivity is essentially a matter of “common knowledge” in the sense of Lewis (1969) (see also Clark 1996; Itkonen this volume).

It is indisputable that normal adult human beings do indeed base much of their social reasoning on representations of other people’s mental states. There are also good arguments for viewing social institutions such as language as *objects of common knowledge* (Itkonen this volume). There are, however, at least three objections to regarding the “common knowledge” account as sufficiently foundational or inclusive to fully comprehend intersubjectivity. The first objection is logical. The “common knowledge” account is immediately vulnerable to Hume’s “Other Minds” problem: How can I know that the mental content that I ascribe to you is the mental content that you actually have, even excluding cases of mistaken or false ascriptions? In other words, if, for example, I (correctly) think that my neighbour believes in fairies, how do I know that whatever it is that my neighbour believes in is what I think they believe in? To know *that*, I have to be sure that what my neighbour’s mental content is about is *the same* as what my neighbour’s mental content *under my representation* is about. Without this guarantee of *referential* intersubjectivity, there can be no common knowledge. In other words, the “common knowledge” formulation of intersubjectivity presupposes, without explaining, the intersubjectivity of reference. Another way of putting this is to say that the “common knowledge” formulation presents an unsolved instance of the “Grounding problem”, which requires a *logically prior* appeal to intersubjectivity for its resolution (Sinha 1999).

The second objection to the “common knowledge” account is that intersubjectivity is as much about feeling as knowing. As has frequently been pointed out, intersubjectivity is closely connected to the capacity for empathic identification. However, the affective phenomenology of intersubjectivity extends beyond empathy, in that there are some states of feeling that are constitutively intersubjective, in the sense that they implicate the experience of the feeling of another directed towards oneself. For example, for a couple to be in love it is necessary for each to be in love with the other. The experience of being in love with a lover is quite different from the experience of being unrequitedly or disappointedly in love, for no other reason than the

intersubjectively shared nature of the former, as contrasted with the forlornly solitary nature of the latter. Although knowledge of the other's feelings is important in this, knowledge is not all there is to it, since this intersubjective state also involves *commitments* and *accountabilities*—a quintessentially normative dimension that is fundamental to intersubjectivity, selfhood and to the social domain in general (Shotter, 1984).

The third (related) objection is that the “common knowledge” account of intersubjectivity is disembodied; it does not take into account the “intercorporeal” (Merleau-Ponty 1962) dimension of intersubjectivity, which manifests itself most clearly in the mimetic nature of primary intersubjectivity from the earliest stages of infancy (Zlatev this volume; Trevarthen 1979, 1998; Reddy *et al.* 1997). It is in the shared experience of corporeally expressed, emotionally rich states of the embodied mind that, as the French developmental psychologist Henri Wallon insisted, we should seek the roots of the intersubjective psyche (Netchine-Grynberg and Netchine 2002; Rodríguez 2006; Wallon 1984 [1925]; Zazzo 1975). We shall develop this argument further below, by demonstrating that intersubjectivity and, by extension, institutions and conventions also find material embodiment in artefactual objects.

Despite these briefly-sketched problems afflicting the “common knowledge” account of intersubjectivity, it has been deeply influential, not only in philosophy of mind but also in developmental psychology. This is, firstly, because it accords with the tradition of reducing all realities existing “between” people to theories about what goes on “inside” individual minds; and secondly because it also accords with the mentalist emphasis in classical cognitivism on the primacy of mental representation. The ontogenetic version of this account seeks its explanation for certain representational capacities of the adult mind—the ability to represent representations—in the autonomous domain of representation itself. Whether “theory of mind” is proposed to be a consequence of meta-representational abilities first applied to the child's own cognitive processes, or of an ability to “read” the intentions of others, the basic assumption of the paradigm remains in place: “mind” is an autonomous domain, and actions are secondary to the internal and private intentional states which they reveal.

We turn now to the second, very different, conception of the “shared mind”, which has its roots in Durkheimian social theory. The object of social theory, for Durkheim, was the domain of *social facts*, which he described as “a category of facts which present very special characteristics:

they consist of manners of acting, thinking, and feeling external to the individual, which are invested with a coercive power by virtue of which they exercise control over him.” (Durkheim, 1982 [1895]).

Social facts, for Durkheim, are not merely aggregates of the individual representations of them by the subjects that are regulated or “coerced” by the social facts, since for each individual subject the social fact presents itself as a part of an out-there *objective* reality. The objectivity of social facts consists in the fact they are independent of any single individual’s thoughts or will. As Jones (1986: 61) puts it, “it is precisely this property of resistance to the action of individual wills which characterizes social facts. The most basic rule of all sociological method, Durkheim thus concluded, is *to treat social facts as things*.” Durkheim’s treatment of social facts thus consists in, first, an ontological proposition, that social facts are irreducible to biological or psychological facts (or structures or processes); coupled with, second, an epistemological and methodological proposition regarding their treatment: as *objects* of a particular kind, whose determinate nature consists in their “coercion” of conduct. We shall return below to the question of what is implied by the treatment of social facts as “objects”.

Durkheim, it must be said, has often been criticized for the breadth and vagueness of his notion of “social fact”. A particularly problematic aspect of his theory is that, in counterposing “social facts” to “individual conscience” (or mind), he sometimes identified the former with “states of the collective conscience”. Some social psychologists (e.g. Moscovici 2000) have followed this direction in constructing a theory of “social representations”, but critics have claimed that Durkheim sympathized with a view of society as a kind of super-organic “collective personality”. Whether or not Durkheim believed in the “collective mind”, such a concept is not only scientifically untenable, it is unnecessary. We propose that a social fact can most simply be defined as something regulating an aspect of conduct which requires the *participation* (Goodwin and Goodwin 2004) of more than one individual. This “something” may be a codified law, a norm, an institution, a rule in the Wittgensteinian sense, or a canon of interpretation. A natural language, therefore, qualifies as a social fact (indeed, as a social institution, see Itkonen this volume) under this reading of Durkheim’s theory.

Let us now compare and (if possible) try to integrate Durkheim’s account with the “common knowledge” account. Social facts (like any other “facts”) are potential objects of

intentional states. Individual beliefs *about* social facts (like any other beliefs) are also potential objects of intentional states (and hence of common knowledge). The efficacy of at least some social facts depends upon their being the objects of common knowledge (Itkonen this volume). However, claimed Durkheim, the social fact itself is not the sum, average or common denominator of all the individual beliefs of all participants. Rather, Durkheim insisted, the social fact is in some sense prior to these individual cognitions. This is at first blush puzzling, since the collectivity of participants (or some authority amongst them) can, in principle, *change* the social fact (e.g. the rules of a game) just by so deciding.

To clarify this issue, let us compare Durkheim's view with that of Searle (1995: 1-2): "There are things that exist only because we believe them to exist. I am thinking of things like money, property, government, and marriages ... [such] Institutional facts are so called because they depend upon human institutions for their existence." Durkheim, we suggest, would have agreed with the second, but *not* the first, of these propositions of Searle. How can we render this difference intelligible?

The answer, we suggest, is to view social facts as constituting an emergent, normative ontological level existent *only* in the intersubjective field of *joint action* regulated by norms and commitments. Intersubjectivity is then essentially a matter of *co-participation* in joint action structures which, by virtue of their normative regulation, are conventionalized as *social and communicative practices*. Social practices, and the norms regulating them, can be objects of intentional states, including "common knowledge", but they are *not* reducible to the aggregates of such states.¹ This formulation helps us to understand the specific sense in which social facts are methodologically necessarily treated as "objects"; they are instances of the objectification, or reification, as *conventional form*, of intersubjectivity. As such, they are also potential epistemic objects of common knowledge, including scientific and theoretical knowledge.

Our account of intersubjectivity, then, accords priority to *co-participation, action and practice* over individual mental states, both logically and ontogenetically. Note that this priority does not *deny* either the existence of individual mental states, or the reflexive structure of common knowledge. Rather, it regards intersubjectivity as *essentially* social, and logically and ontogenetically *pre-requisite* to common knowledge. Indeed, we have argued that intersubjectivity is the fundamental condition of *all social facts*, a proposal which we suggests

considerably clarifies Durkheim's own formulations, while remaining true to his insight into the relative autonomy of social facts from psychological facts.

Our proposal can now be compared with the following argument for the existence and role of "collective intentionality" advanced by Searle (1995: 25-26):

The requirements of methodological individualism seem to force us to reduce collective intentionality to individual intentionality. [However] it does not follow from [the individual possession of intentional states] that all my mental life must be expressed in the form of a singular noun phrase referring to me. The form that my collective intentionality can take is simply 'we intend,' 'we are doing so-and so,' and the like ... the intentionality that exists in each individual head has the form 'we intend.'

Searle's argument, however initially appealing, faces the problem of where this primitive or *a-priori* "we" comes from. The answer that we offer is that it is the lexico-grammatical expression of Intersubjectivity itself, deriving from and grounded in joint action ("we are doing so-and-so"), *regulated* by the normative social fact that makes recognizable the joint action as an instance of the practice "so-and-so". This answer, similarly to our argument above with respect to the ontological status of social facts, preserves Searle's recognition of the foundational status of intersubjectivity in joint intentions, while turning his own version of it on its head.² It is not, we maintain, the intentional state "we intend X" that is constitutive of the practice X: rather, the intentional state is derived from the shared practice X, whose conventionalized "objectification" as a social fact is the object of the intentional state.

Searle (who fails to reference Durkheim) goes on to write (*ibid.* p. 26):

I will henceforth use the expression 'social fact' to refer to any fact involving collective intentionality. So, for example, the fact that two people are going for a walk together is a social fact. A special subclass of social facts are institutional facts ... for example, the fact that this piece of paper is a twenty dollar bill is an institutional fact.

It will be clear by now that, from our point of view, Searle's proposal puts the cart before the horse. We would maintain, rather, that collective intentionality is *based* upon, *not* the source of, participation in joint action in an intersubjective field, regulated by social facts (norms, institutions etc).

What empirical evidence does developmental science offer for the existence of an "ontology of the social", and how might this bear upon the difference between our account and Searle's "collective intention" account? The classic experiment by Murray and Trevarthen (1986), who showed that infants were able to distinguish between a real-time video-mediated (CCTV) image of their mothers, and the same image recorded on videotape, unsynchronized with the infant's own actions, is extremely illuminating. The experiment, we would argue, provides strong evidence of the reality of the "ontology of the social" as such (both as social fact and as psychological reality); and of the biologically based readiness of very young infants to *participate*. The important thing about such participation, which distinguishes it from mere coordination on the basis of the "stimulus situation", is not only the temporal sequencing and rhythm of the interaction, but also the subjective recognition of being *engaged in participation*—indexed by the different emotional reactions of the infants to the two stimulus situations.

Viewing primary intersubjectivity in terms of participation, rather than intention, has important consequences for developmental theory. The implausibility of attributing neonatal engagement to intentional mental contents has led some developmentalists to neglect the significance of primary intersubjectivity, and focus on secondary intersubjectivity (triadic joint attention) as the decisive achievement in the development of the shared mind (Tomasello 1999). We maintain, in contrast, that all later forms of intersubjectivity are predicated on primary intersubjectivity. It is, however, neither necessary nor correct to interpret the evidence for primary intersubjectivity in terms of "innate intentionality", whether individual or collective. Rather, we prefer Trevarthen's more recent formulation in terms of "motives for engagement", while emphasizing that the constitution of engagement as *intersubjective* is effected as much by the structuring (by the caretaker) of participation, as by the biological predisposition and capacity of the infant to engage. Primary intersubjectivity, on this reading, is neither *merely* a psychological nor *merely* a biological fact, but a "proto-social fact" supported by human developmental psychobiology.

Furthermore, without denying the developmental significance of the sharing of attention and of other individual intentional states, our prioritizing of *participation in joint action* enables us to conceptualize, similarly to Rakoczy (2006), the primary inter-mental dimension of intersubjectivity as being a normatively regulated *commitment* to the activity itself (see also Shotter 1978, 1995); and prompts us to re-examine the significance of the *objects* which in some sense “carry” or signify such norms and conventions.

2. The object as a social-material signifier

Intersubjectivity is often conceived mentalistically, as a property of the “unmediated mind”. We reject the idea that intersubjectivity is to be considered as equivalent only to “inter-mental”, in that we stress that inter-corporeality extends beyond the body to encompass objects. Intersubjectivity is materially grounded in embodiment, and this embodiment extends “beyond the skin” to encompass its mediation by objects, or what we shall call, following Latour (1996), *interobjectivity*. Such mediation, we propose below, can be regarded as the ontogenetically first manifestation of semiotic mediation.

We proposed above an account of intersubjectivity in terms of *co-participation* in joint action structures which, by virtue of their normative regulation, are conventionalized as *social and communicative practices*. This definition excludes actions which may be directed towards others, but which are not framed as part of an activity governed by a norm. It also excludes solitary activities which may be governed by norms of performance or of achievement, such as gardening or cooking a meal, which may properly be termed social practices, but which (when performed alone) do not involve social interaction. It includes both semiotically mediated discursive practices such as talking and gesturing, and socially organized non-discursive practices such as co-participation in games or in physical constructions.

Primary intersubjectivity in infancy is a mode of co-participation in which the body of the infant is not so much the “vehicle” or “medium” of engagement, as the very engagement itself. Primary intersubjectivity is *embodied* in the strongest sense of the word. In semiotic terms, there is no distinction between the bodily movement as signifier, and the signified “meaning” that is communicated, between the inter-mental and the inter-corporeal. There is also, as yet, no differentiation between discursive and non-discursive co-participation.

Inter-corporeal co-participation is not supplanted in development, but is elaborated and extended by *semiotic mediation*, most obviously in discursive practices employing conventionalized gesture and language. In this section, we explore the neglected role of *objects* (especially artefacts) in the constitution of intersubjectivity and subjectivity. The neglect stems not so much from a failure to recognize that the material world is an important dimension of co-participation, as from the tendency to downplay its semiotic status and regard it as mere “context” to language. Goodwin and Goodwin (2004: 222), for example, define participation as “actions demonstrating forms of involvement performed by parties within evolving structures of *talk*” [our italics], although they also recognize the need to “expand our notion of human participation in a historically built social and material world” by attending to “material structure in the environment” (*ibid.* p. 239). Our purpose in this section is to foreground the semiotic aspect of materiality, and the material aspect of meaning, and to analyze their role in the development of intersubjectivity and normativity.

We owe the notion of semiotic mediation to Vygotsky, whose explanation of its operation in cognition, and in cognitive development, focused on the internalization of conventional signs originating in contexts of discursive practice. Although Vygotsky attributed great importance to the formative role of language in the emergence of “inner speech” and “verbal thought”, his employment of the concept of semiotic mediation also encompassed the use of non-systematic signs, including objects-as-signifiers. One of his most celebrated examples of semiotic mediation is that of a mother tying a knot in the handkerchief of her child, to remind him of the need to convey a message to the teacher—a social practice which was widespread, not only in Russia, until quite late in the 20th century. Vygotsky writes:

When a human being ties a knot in her handkerchief as a reminder, she is, in essence, constructing the process of memorizing by forcing an external object to remind her of something; she transforms remembering into an external activity. This fact alone is enough to demonstrate the fundamental characteristics of the higher forms of behaviour. In the elementary form something is remembered; in the higher form humans remember something. (Vygotsky 1978 [1930]: 51)

The semiotic value of the knot is conventional, not by virtue of the knot being an element of a sign *system*, but because it is normatively framed by a social practice of “reminding”. It is this frame of practice which underpins the meaning signified by the knot on any given occasion, constituting the semiotic status of the knot as an example in miniature of what Searle (op cit.) calls an “institutional fact”.

Vygotsky’s knot in the handkerchief, and Searle’s twenty dollar bill, are thus both institutional facts; and both are exemplars of the *material* semiotic mediation of social practices—the exchange of respectively information and goods. We may note both similarities and differences between the two cases. First, the similarities. There is no intrinsic property of the material substrate (cotton, paper and ink) which determines the semiotic or monetary value of the token, which is conventionally determined. Hence, the token is equivalent, for purposes of use, to any other type-identical token, which need not be made of the same material (a piece of string round the wrist, an electronic credit on a chip card). This independence of semantic or monetary value from material substrate is, of course, a fundamental property of signs, a mark, as it were, of the domain of semiosis or signification.

Now we may take note of the differences between the knot and the twenty dollar bill. If the monetary token is materially destroyed, the value that it signifies is also destroyed, whereas if the knot is untied, the information it signifies is not. The twenty dollar bill is “cashed out” or used up (for the purposes of the user) once exchanged, since it passes from the ownership and control of the user. However, its monetary value is preserved until it is withdrawn from circulation. Conversely, the knot can be “used” again by the user to recall another, different message, while the message signified by the knot no longer has any utility or communicative value once it has been exchanged. Finally, while it makes sense to say that the knot “stands for” the message, the twenty dollar bill does not “stand for” (say) twenty one-dollar bills, but is exchangeable for or *equivalent* to them. All these differences can be summed up by saying that while the knot is a *sign* of the message, the twenty dollar bill *is* its monetary exchange value, it is self-identical to that value. Nonetheless, although the twenty dollar bill is not a *sign*, its self-identity to its monetary exchange equivalents is not physical, but social and semiotic.

Searle's account of social or institutional facts (such as money) is that they depend upon collective agreement and knowledge that, under determinate rules, something *counts as* an instance of a social object. Hence, the general form of such rules is:

“X counts as Y in context C” (Searle, 1995: 28).

Note, here, that this definition is wider than, but subsumes:

“S (a sign) stands for M (a message) in context C”.

For example, we could say that Vygotsky's handkerchief *counts as* a sign for a message in its context of use, and the “standing for” relationship obtains between the handkerchief and the specific message in context C. So, on this interpretation, the sign relationship can be expanded into:

“X counts as S, and S stands for M, in context C”.

The distinction between the “counts as” and the “stands for” relationship can now be used to distinguish between the grammatical acceptability and the semantic interpretation of a sentence (Itkonen this volume):

“James eats meat” counts as a correct sentence in English, and stands for the proposition that James eats meat in context C.

Note, now, that it is also in virtue of the combination of its formal arrangement and its context, that the sentence “James eats meat” *counts as* an assertion of the proposition; the sentence does not “stand for” the assertion, rather the act of uttering it in a particular context *is* that assertion, just as Searle's twenty dollar bill *is* the twenty dollars, rather than standing for it. Hence, both the grammaticality and the illocutionary force of an utterance are aspects of what the utterance *counts as* (being) in its context, while its semantic interpretation is the interpretation that it *stands for*, in that same context. All of this is irreducibly normative, and it is this duality of normative structure, of “counting as” and “standing for”, that underlies the *conditions on representation* that are analyzed by Sinha (1988: 37): “To represent something ... is to cause something else to stand for it, in such a way that both the relationship of ‘standing for’, and that which is intended to be represented, can be recognized.” The fact that the “standing for”, or sign relation, is embedded in the “counting as”, or institutional relation, also makes it clear why language must be viewed as primarily a social institution (Itkonen this volume).³

This account might suggest, too, that the institutional “counting as” relation is somehow cognitively simpler than the sign relation. This cannot be the case without qualification, since coined money was only invented in the period of 800-600 BCE, in Greece and China, at a time when we have ample evidence of written language. Indeed, Sohn-Rethel (1977) argues that it was the invention of coinage which simultaneously brought into existence both generalized commodity production and the very notion, fundamental to logic, of abstract equivalence and purely formal (non-) identity. Sociogenetically, then, institutional semiotic forms have continued to be historically elaborated along with symbolic forms (Sinha [in press](#)).

Ontogenetically, however, we shall argue that the normative understanding of “counting as” precedes the development of symbolization and language. To make this argument, we briefly cite Searle once again, who points out that: “in order that something be a chair, it has to function as a chair; and hence, it has to be thought of or used as a chair. Chairs are not abstract or symbolic in the way that money and property are, but the point is the same in both cases.” And the point, of course, is normative. Let us examine more carefully the semiotics of material artefacts. Now, *anything* can be *used* as a chair, provided it has the affordances, in the sense of Gibson (1979), which permit it to be sat in or on. Such affordances are part of what Searle calls the “brute” or “natural” facts, as opposed to institutional or social facts. Is there, however, any sense in which something can be said to properly “count as” a chair in Searle’s sense of an institutional fact? The answer, we suggest, is yes: an object *counts as* a chair if it is an artefact intended and designed to be used as a chair. The physical properties of the chair are then no longer merely “brute facts”, but socially constructed and normatively regulated affordances, which make possible the *canonical function* of the chair. The canonical functions of artefacts are therefore *social facts*, and the material world of artefactual objects is not one only of “brute facts” in their physical aspect, but *also* one of social meaning.⁴

We conclude that, in analogous fashion to the way that the twenty dollar bill signifies (without *standing for*) its normative identity as a representation of exchange value, the artefactual object (such as a cup, a chair, or a computer) signifies (also without standing for) its normative canonical function or use value. Objects, then, not only (as with Vygotsky’s handkerchief) can be *signs* for something else, but, when they are artefacts, as most objects we encounter in our everyday lives are, are also *signifiers* of their proper, socially standard, canonical functions in a context of social practices.

Of course, a condition for the semiotic status of artefacts, as with any semiotic status, is that human subjects are capable of cognitively grasping it. As Searle says, for a chair to function as a chair, it has to be used as a chair and thought of as a chair. When do human infants begin to display such a cognitive grasp, and where does it come from?

3. Early object use and exchange: canonicity and normativity

In a series of experiments Walkerdine and Sinha (1978), Freeman, Lloyd and Sinha (1980), Lloyd, Sinha and Freeman (1981), Freeman, Sinha and Condliffe (1981), and Sinha (1982, 1983) investigated infants' and young children's understanding of object function, using infant search, action imitation and acting-out language comprehension paradigms. In an age range from 9 months to 3 years and 6 months, they found error patterns which were characterized by "canonicity effects". Infants at the end of the first year of life were more successful in A-not-B search tasks (otherwise known as object permanence tasks) when the object was hidden in an upright than in an inverted cup. It seems that these infants understood that a cup is a "better" container when in an upright orientation than when inverted. Slightly older infants were generally unable to imitate the placement of a small block on the bottom of an inverted cup, preferring to turn the cup back into an upright orientation and place the block inside the cup. In this response strategy, the infants showed that they were "locked" into a normative apprehension of the cup as a canonical container, which over-rode the "brute" affordance of the flat surface of the bottom of the inverted cup. Even after this response strategy disappeared in action imitation tasks, it re-appeared in language comprehension tasks: for example two year olds, when asked to place a block "on" an inverted cup, turned it to the upright position and placed the block inside it.

These experiments can be interpreted as showing that, in the first place, objects are cognitively apprehended by infants, from an early age, in terms of their socially-imposed, normative and canonical function (the object "counts as" a container). In the second place, the emerging conceptualization of spatial relations *between* objects is also derived as much from the canonical functional relations which objects contract with each other as from purely perceptual-geometric information (for a discussion of the functional basis of spatial relational meaning, see Vandeloise 1991).

Where does this understanding, on the part of the infant, of the canonical function of objects come from? This question is important, because of the intimate relationship between the physical properties of the artefact, and its socially “baptized” canonical function. In contrast with, for example, the monetary token (in which the relationship between the material from which the token is made, and its exchange value, has historically become increasingly attenuated, arbitrary and even, as money assumes the mantle of pure informational form, virtual), the physical structure of “traditional” artefacts such as cups is not only non-arbitrary, but essential to its fulfilment of its canonical function.

Infants’ motivation to explore the physical world is well known, and it might be hypothesized that their apprehension of object properties in terms of function derives from an untutored, spontaneous sensori-motor engagement with the object as a purely physical entity (for example, the exploration of the cavity of a container giving rise to the dominance of this cavity in the early pre-conceptual representation of the object)

We have several sources of evidence that this is not so. First, while there is evidence of understanding of containment as a physical relationship at 6 months (Hespos and Baillargeon 2001), we were unable to detect canonicity effects in search tasks below the age of 9 months. This may, however, be a consequence of a motor-involving against a violation-of-expectancies methodology. Second, when the perceptual-cognitive link between canonical *orientation* and canonical containment *function* of cups was broken, by painting schematic faces either upright or upside down on the cups, the canonicity effect in infant search was abolished (Lloyd *et al.* 1981). This finding reinforces the conclusion that the canonicity effect is dependent upon socially cued expectations about the normative use of the object.

Even more decisive experimental evidence for the role of joint action in establishing canonical object concepts comes from the experimental design used in Freeman *et al.* (1981), where the object was functionally “ambiguous”, consisting of a set of stacking / nesting cubes. The child was invited by the experimenter to play with the entire set of cubes, and the experimenter set up this pre-test game as *either* a nesting *or* a stacking activity. After successfully completing, as joint action, an activity of constructing either a nest of cubes, or a tower of stacked cubes, the experimenter extracted a medium-size cube and a small cube, and conducted either an action imitation task involving the placement of the smaller cube on top of/ inside/under the

larger cube, or an acting-out language comprehension task with instructions to place the smaller cube “in”, “on” or “under” the larger cube. The results were dramatic. After playing a nesting game, childrens’ error patterns showed a response bias similar to the “canonicity effect” manifested in the same task using cups. In other words, there was a response preference for placing the small cube inside the larger cube. However, this effect was abolished in the stacking condition, in which there was a tendency to preferentially place the smaller cube *on top of* the larger cube.

To conclude this review of experimental evidence, we emphasize that canonical function and orientation, though they are in some sense “intrinsic” to the object as a material entity with determinate structure and affordances for human action, are not *essential* object properties in the same way as object substance. The stacking / nesting cubes experiment showed that the framing of the object in terms of its normatively appropriate function and orientation can be “locally” taught and negotiated. There is also inter-cultural variation in the canonical orientation and function assigned to classes of objects which may be materially identical between the cultures. For example, in the indigenous agrarian Zapotec culture of Southern Mexico, baskets are commonly stacked, and are frequently used as covers for foodstuffs and in childrens’ games of catching chickens. As well as these differences between Zapotec and Euro-American cultural practices, the Zapotec language lexicalizes the different spatial relations that are lexically distinguished by English “in” and “under” using a single body-part term, translatable as the English word “stomach”. Young Zapotec children differed from their Danish counterparts not only in their response patterns in language comprehension tasks using baskets, but also in non-linguistic action imitation tasks. The Zapotec children clearly did not regard the relationship of what *we* consider to be canonical containment, and the orientation that *we* would regard as “upright”, as being canonical (Sinha and Jensen de Lopez 2000; Jensen de Lopez 2003; Jensen de Lopez, Hayashi and Sinha 2005).

The experimental evidence we have reviewed supports the view, then, that it is the intersubjective structuration of the child’s participation in joint action, as much as (and indeed more so) than the affordances of the object “in itself”, that enables the child, in a process of “guided reinvention” (Lock 1980), to appropriate the norms governing object use and to achieve an object representation in terms of canonical function. This process has a long developmental history, and the episodes of joint action are accompanied and mediated at every stage by the use

of communicative signs by the adult participant, as is attested by the observations reported by Rodríguez and Moro (1999, 2002, this volume; see also Moro and Rodríguez 2005).

Throughout this developmental process, “objects are invested with significance. They become, for the child, material representations and signifiers of the rules, norms, values, rituals, needs and goals of the entire ... matrix within which they are embedded. In short, they become part of a meaningful system of signs” (Sinha (1988: 204).

4. From signifying object to communicative symbol

Artefacts, we have argued, have an intrinsic meaning given by their canonical function or use value. What an object “means” on any given occasion, however, is dependent upon more than just canonical function. Not only can an artefact be used non-canonically, as when, for example, a cup is used as a paperweight, but there are also socially constituted meanings which are relatively (and conceptually) autonomous from the canonical use value of the object. Primary amongst these, at least from a developmental point of view, is the meaning of the object as an *object of exchange*.

Give-and-take routines develop in our culture early in the second year of life. Such exchanges involve the super-imposition on the object of a semiotic status which is independent of its canonical function: that of an “abstract” signifier, and material embodiment, of a social relationship of *exchange*. Social and anthropological researchers from Marcel Mauss (2000 [1923-24]) onwards have posited exchange as a fundamental human universal (see Goux 1990). Object-exchange and the participatory induction of the infant into the normative knowledge of canonical object function are not *interactively* distinct in earlier triadic exchanges (Rodríguez and Moro this volume). However, the emergence of the give-and-take routine as a normative, reciprocal and mutually controlled format of co-participation lays the basis, we suggest, for the differentiation of signifier from signified that is necessary for mastery of the symbolic system of language. The object now becomes a signifier within a field constituted by differential, reciprocal and shifting subject positions: that of giver and that of recipient.

From a communicative and symbolic point of view, the ability to negotiate these shifting subject positions constitutes a precursor of *deixis*. The object semiotically mediates the constitution of the triadic interaction as implicating “I” and “You”, a decisive differentiating

moment in the construction of subjectivity. It has often been claimed that subjectivity is constructed in and through language. This may be so, in the sense that language provides the key symbolic support for the adoption of differential subject positions, but the “subject” that occupies these positions as simultaneously an “I” and a “Me for You” is, we suggest, constituted *at the moment of entry into language* through participation in the proto-institution of object exchange. There is also a psychoanalytic dimension of investment in this process of constitution of subjectivity, since the object signifies both *power* (to give or to withhold) and *desire* (the object *represents* a wish whose fulfilment is dependent upon the subjectivity of the Other, rather than being the immediate goal of a simple *demand*).

Whether or not participation in give-and-take routines is a strict precondition for language acquisition, it is undoubtedly, in normal developmental trajectories, a precursor of it. Object exchange is usually co-terminous with the early stages of the development of language, and precedes the vocabulary explosion of the second half of the second year of life. We hypothesize, then, that it represents a fundamental step in the emergence of both subjectivity and the mastery of symbolization. The voluntary control in object exchange of the grasp and relinquishment of objects, governed by norms of communication rather than by immediate consummatory goals, prefigures the voluntary representational use of signs. Object exchange formats introduce into the triadic structure of joint attention a signifying element that is potentially extensible to the representational, “standing for” function of language. It also puts in place, in schematic and skeletal form, the perspectively shifting dynamics of deictic identification of speaker and hearer. Early object exchange, we submit, like the guided appropriation by pre-linguistic infants of canonical object functions, is a neglected, fundamentally social, materially mediated aspect of the development of primary intersubjectivity towards symbolic intersubjectivity.

5. Beyond the dyad: imagining communities and culture

In the preceding sections, we have focussed upon interobjectivity as semiotically mediating the development of participation by the infant and young child in joint actions based upon intersubjective and socially shared conventional meanings. We have also focussed upon triadic contexts of interaction, in which the object is the “third term” of a semiotic triangle constituted by the interactions between two individuals (the prototypical dyad of developmental accounts of

intersubjectivity, and the ideal-typical speaker and hearer of linguistic theory). What is missing in our account so far is the “Social Third Person”: not the Object, but the community of practice and meaning that ultimately sanctions the norms governing the interactions between any two or more participants in their dealings with social reality. In confronting this construct—Society, Community or however it may be designated—we encounter a fundamental problem of the social and human sciences. How do we reconcile the agency of human subjects, their capacity for creating novelty, with the determining (though not strictly deterministic) structures and processes which permit the development of the encultured and socialized subject? In this section, we maintain our focus on the role of objects and “inter-objectivity” in what Fogel, Valsiner and Lyra (1997) have called “the dynamics of indeterminism in developmental and social processes”; with particular reference to the article in that volume of that title by Smolka, de Góes and Pino.

Smolka et al. (1997: 160) pose the following question: “In what way is [the development of the] sign related to the processes that generate or anchor creativity and individual resistance, the power of violating canonical rules?” They report and analyze an episode of socio-dramatic pretend play by a group of three 5-6 year old girls in the “house corner” of a primary school classroom, in which a cowboy hat played a crucial role as a prop in an enacted dramatic narrative. The hat, initially introduced into the play with an “extended” canonical meaning as a fashion accessory, later became a signifier of a new identity adopted by one of the girls as a feminine counterpart of a cowboy character who was a part of the background common knowledge of all the girls comprising the group. Crucial both to the investigators’ interpretation of this process, *and* to the children’s construction of their “play world”, was the creative linguistic designation of the character (signified by the hat as well as by the linguistic sign) as “Bete Carrera”, a grammatical feminization (in the Portuguese language) of the name of the male cowboy character “Beto Carrero” recruited from common knowledge (see Sinha 2005, for a fuller analysis).

As Smolka *et al.* point out, the cowboy hat, *qua* artefactual object, remained throughout a hat, never used by the children as anything other than a hat. At the same time, it “became”—or, rather, came to signify—*more than* the canonical rules of object-usage that it embodied.

Through language, the children created Bete Carrera (Turn 7), the feminine of Beto Carrero ... Language allows for this specific appropriation, for such a construction and transformation; it allows for a ‘performance’ that synthesizes old and new modes and

models of acting. Through language, it is possible to become another, to become *homo duplex* ... or, in fact, *multiplex*. In this consists the dramatic character of human experience. (Smolka, Gões and Pino 1997: 161).

The hat is thus simultaneously situated at two levels of meaning. At the first level, its canonical function is appropriated enactively by the participants (by putting it on and taking it off). At this first level, the construal of the hat is intersubjectively shared, non-contested and constant: the hat remains a hat. At the second level, the hat is invested with a “surplus meaning” which goes beyond canonicity. At this second level the hat comes to signify the subjective positionings and perspectives of the individual participants within a more comprehensive, discursively constituted and gendered frame, by means of which, say Smolka *et al.* (1997: 161), “the signifying aspect of the (inter)subjective actions ... necessarily implies ... immersion in language and meaning production.”

The discursive frame is one of *narrativity* (Gallagher and Hutto this volume), through which, as Lightfoot (1997: 174) puts it, “temporal rhythm becomes history, and transitory meanings become forms of knowledge which linger long enough to be toyed with.” Through intersubjectively shared and constructed narrative, the world and the identity of the subject can simultaneously be explored, renewed and consolidated. As we emphasized earlier, this is a process in which emotional investment plays as important a role as cognitive structure, the two aspects being fused in what the cultural theorist Raymond Williams called “structures of feeling”. Here is what Williams (1977: 128) says about temporality in cultural activity and structures of feeling:

If the social is always past, in the sense that it is always formed, we have indeed to find new terms for the undeniable experience of the present: not only the temporal present, the realization of this and this instant, but the specificity of the present being, the inalienably physical, within which we may discern and acknowledge institutions, formations, positions, but not always as fixed products, defining products.

Earlier, we drew upon Durkheim’s notion of social facts, emphasizing the “already there and formed” exteriority and objectivity of norms and institutions. Williams, in contrast, reminds

us that it is through intersubjective agency *in the present* that social life and its normative institutions are enactively re-fashioned, permitting through the medium of shared narrative resources the construction of both the here-and-now and face-to-face shared mind, and the imagined community of unknown others whose history and identity we share (Anderson 1991). Indeed, it is through narrative deployment of the symbolic resources of language that our social reality becomes simultaneously actual and virtual, constrained by “objectively existing circumstances”, but pregnant with potentialities through the investment of the present by the horizon of the future. Williams also reminds us of the “inalienably physical” nature of participation and experience. Throughout this chapter, we have emphasized the neglected but vitally important role not only of the (inter)corporeal body, but of the (inter)objective materiality of shared “things at hand”; not merely in sustaining, but in developmentally constructing the shared mind.

¹ Of course, there must always have been some (mythic) inventor of a social fact, such as money, and at least one other participant to understand the intention behind the invention, but once invented, the social fact acquires a relative ontological autonomy.

² The allusion here to Marx’s assertion that he had “turned Hegel on his head” is deliberate.

³ This account also implies that Searle is wrong in to characterize money as “symbolic”, inasmuch as symbolization involves denotation or representation (Sinha, 2004). We can certainly agree, however, that the self-identical relation of “counting as” is inherently *semiotic* as well as social.

⁴ Expressed in an older philosophical lexicon, canonicity of object function is a normative phenomenon existing at the interface between “Erste Natur” and “Zweite Natur”.

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