

FOUNDATIONS OF LANGUAGE STUDIES

Mark H. Bickhard

Lehigh University

There are two major parts to the position that Robert Campbell and I are proposing: 1) a set of related criticisms of the presuppositions involved in contemporary studies of language, and 2) an alternative model of cognition and language that avoids these criticisms, and yields many additional results. The criticisms focus most fundamentally on the notion of representation as being constituted as encodings, and the related conception of utterances as transmitted encodings of mental contents — to be decoded into mental contents by the audience. This is the classic backbone of contemporary cognitive science: perceptual encodings of the world yielding cognitive encodings, which, in turn, yield utterance encodings. Our critique undercuts this progression at all levels.

Specifically, we argue that, while encodings certainly do exist — such as Morse code — and can be immensely useful — such as computer codes — a logical incoherence is encountered if it is assumed that all representation is constituted as encodings. The problematic that we point to is not unknown — it is referred to by such terms as “the empty symbol problem” or “the symbol grounding problem” in the literature. But we offer a much deeper critique — that the encodingist notion of representation is *incoherent* as an account of representation, not just that it is *incomplete* in its account of representation — and we offer an alternative.

Neither the critique nor the alternative can be developed here. Instead, I offer outlines of some parts of each. A core variant of the critique is that, while encodings can be defined in terms of other encodings, such a definitional progression cannot proceed indefinitely on pain of infinite regress. Therefore, a basic level of encoded representations is required, at which atomic encodings are available for defining other encodings but are not themselves defined in terms of other representations. This level is often construed as being innate, but that does not address the fundamental logical problem (Bickhard, 1991a, 1991b, in press-a). The logical problem is that it is impossible for any such atomic basic level encodings to represent anything at all — any

specification of what they represent either violates the assumption of their being at a basic level, or it is empty, such as : “X” represents whatever it is that “X” represents. The presupposition that representation is constituted as encodings, then, rests on an impossibility of their being such basic level encodings — it is an incoherent presupposition.

But, if representation is not fundamentally encodings, then utterances cannot be either. Encodings, such as Morse code, require that both the encoded and the encoding be already known — e.g., “. . .” stands-in for “S” in Morse code — in order for the encoding to exist. Encodings, then, cannot provide new representation; they can only change the form of already available representation. Encodings are representational stand-ins, not representational emergents. Consequently, they cannot be the source of perceptual information about the world, nor the source of utterance information about mental contents. Further developments of these considerations can be found in (Bickhard, 1980, 1987; Bickhard & Campbell, 1992; Bickhard & Richie, 1983; Bickhard & Terveen, in preparation; Campbell & Bickhard, 1986, 1992).

Our alternative model is interactive and pragmatic — pragmatic in a general Piagetian (Bickhard & Campbell, 1989; Campbell & Bickhard, 1986; Piaget, 1954, 1971, 1977) or Peircean sense (Rosenthal, 1983), not in the sense of Morris. It is a version of “knowing how”, of skill knowledge, as being fundamental, rather than “knowing that” (Bickhard, 1992, in press-a, in press-b; Dreyfus, 1991). Utterances, similarly, are interactions with the world; they interact with, operate on, the world — they don’t emit encodings into the world. Specifically, we propose that utterances interact with and operate on social realities, in the form of what we call situation conventions. Situation conventions, in turn, are constituted as certain forms of convergences among the representations of the participants in the social situation (Bickhard, 1980, 1987). Directly, then, utterances operate on situation conventions; indirectly, they operate on the representations of the individuals involved that constitute those situation conventions.

Many interesting properties of language depend on the special nature and properties of the objects of interaction of utterances — on situation conventions. We focus here, however, on the characteristics of language that derive from utterances being operations per se rather than encodings. For one, the result of an operation depends inherently on what the operation is performed upon as much as it does on the operation itself — this view of utterances, then, renders them intrinsically context dependent. This is in strong contrast to the typical view in which context dependence is an additional observed property that must somehow be accounted for on top of the basic encoding nature of utterances (e.g., Kaplan, 1979a, 1979b, 1989).

For another consequence of this view, note that the situation conventions that utterances operate on are constituted by (relationships among) representations. The results of utterance operations, then, will be representations, with truth values. The utterances themselves, however, will *not* be representational at all! Utterances are no more representational than are functions on the integers prime or non-prime or

odd or even. This point scrambles the properties that are normally collected into syntax, semantics, and pragmatics as natural divisions in the study of language. This categorization of language studies cannot be reconstructed from within this utterances-as-operators model. Therefore, it is not a theory neutral way of conceiving of language studies: it is implicitly committed to encodingism, in which syntax becomes the study of well-formedness rules for encoding strings, semantics is the study of the encoding rules themselves, and pragmatics is the study of the uses to which such encodings can be put (Bickhard, 1980, 1987; Bickhard & Campbell, 1992).

Other consequences derive from the different nature of interactive representations from presumed encoded representations. One class of such consequences has to do with a sense in which such interactive representation is intrinsically *modal*, and in which interactive representations *differentiate* the world, instead of naming (encoding) parts of the world. These characteristics make indirect connection with possible world semantics, while utterances as operators make indirect connection with categorial grammars as ways of understanding partial and constituent operators. It is these connections that serve as the focus of our target article for this symposium (Bickhard & Campbell, 1992).

One last consequence that I would like to point out here is that, in standard views, syntax and semantics constrain each other only in the sense that sentences and semantics must be inter-encodable, and the source of information about semantics derives primarily from the sentences into which semantic structures must be encoded. This is a very weak set of constraints. In the utterances as operators view, in contrast, there are very strong constraints on the properties of interactive representations, and these constraints are completely independent of language. Furthermore, as operations on such representations, utterances are very strongly constrained to honor, to be sensitive to, those properties of what they operate on, in order for the operations to succeed. The general message here is that there are much stronger sources of constraint for language studies from within the interactive view than from the standard view. Among other consequences, standard issues and claims of underdetermination are undercut. Many properties are derivable from the inherent constraints on these interactive representations, situation conventions, and operations on them.

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PANEL DISCUSSION
 FUNCTIONAL PRAGMATICS:
 EPISTEMOLOGY OR SCIENCE?

Victor H. Yngve

Department of Linguistics, University of Chicago
 Chicago, IL 60637 USA

There is much that I welcome in the paper by Bickhard and Campbell which I should like to elaborate on before turning to some of the problems I have with it.

I am excited about this work because I see in it a number of points that agree with my own position. The paper presents what it is doing in terms of epistemology. I would like to reinterpret it in more linguistic terms for this linguistic audience. The paper operates with an interactional approach; I think it is important that linguistics turn to an interactional approach. Such an approach would be dynamic, not static. It would not be a linguistics focused on writing grammars for languages. Nor would it focus on a semiotic view of the word 'tree' standing for a tree, or for a concept of a tree. Nor would it focus on the linguistic knowledge of a speaker-listener in a perfectly homogeneous speech community. Instead it would focus on two or more people interacting communicatively with each other—linguistic behavior generally involves two or more people interacting. It would be a view in which interactive behavior dynamically changes the state of the people involved.

A good example is the greeting 'Hi'. The person to whom this is said changes: he has now been greeted and his subsequent linguistic and nonlinguistic behavior would be different than it would have been had he not been greeted. And the person who says 'Hi' also changes: he may have discharged an obligation, for example. We do not have a static sign concept here. These are dynamic changes of the people that are different for the different people involved. These changes depend on the different contexts as represented in the properties of the people involved and they result in changed contexts, different in the different people.

Another example is 'OK', very frequently used in America. It is highly context dependent and can only be handled adequately in an approach which, like an interactive approach, can handle context. And, as Bickhard and Campbell also realize, if we can handle such examples dynamically in an interactive approach we can go on and handle all the rest.

My main published criticism of the paper was that it still accepts many unexamined assumptions from the ubiquitous semiotic-grammatical tradition. This was not idle carping but serious criticism from someone who has a somewhat similar interactive approach that does *not* rest on unjustified and scientifically unjustifiable special subject-matter assumptions. The paper could have made use of these freely-available results. The published response by Bickhard and Campbell did not answer the criticisms, which are unanswerable within the framework of the target paper. Instead it accused me of being a

positivist for asking that its assumptions be justified scientifically. It does claim to be doing science.

Now as someone with three degrees in physics I do not need the positivists to tell me what science is, and I recognize as well as anyone their misguided attempt to apply scientific criteria to answer questions that are properly philosophical. Even the ancient Greeks understood the difference between science and epistemology. The Stoics already in 150 B.C. understood the difference between theory and metatheory and that criteria of observation by the senses could be applied in the physical domain but not in the logical-semiotic-epistemological domain where the criteria were unclear. And where they are still unclear.

This paper appears to be doing philosophy, not science. It views people interacting communicatively with each other not as systems modeling people as talking animals in the physical domain but as epistemic agents.

In taking an interactive approach, the paper could have been scientific. Instead it continues the tradition in locating its research in the philosophical domain of epistemology where one cannot apply scientific criteria. The positivists could not do it and the approach of this paper, despite its claims to be doing science, can't do it either. But, as I have pointed out in this Congress and elsewhere, it is possible to study linguistic questions scientifically if one locates one's research in the physical domain and studies people as real talking animals. Interactionism, if conceived in the physical domain, is part of the key to doing this.

Nothing I have said here negates my appreciation for the contribution of Bickhard and Campbell in knocking down a widely-held insufficiently examined assumption. I prefer an approach to widely-believed assumptions from the semiotic-grammatical tradition that discards them in the foundations and builds without them; in science the burden is properly on those who would accept special subject-matter assumptions to try to justify them scientifically. Nevertheless, a program of systematically knocking down traditional assumptions explicitly one at a time serves a very useful function because they are so widely and uncritically believed. Bickhard and Campbell have shown that they are particularly talented at this.

A REMARK ON THE INTERACTIVITY OF LANGUAGE
AND ON THE MEANING OF SENTENCE

P. Sgall

Charles University, Faculty of Philosophy,
Prague, CZECHOSLOVAKIA

Natural language differs from a code in that it contains its own meaning. In European structural linguistics, language has been understood as a system of bilateral signs, which pattern the domain of cognitive content as a network of oppositions of (literal, conventional) meaning as well as they pattern the domain of physical sounds as a network of phonological oppositions. This hypothesis has been made plausible by a large amount of experience in describing languages for pedagogical and other practical aims. The patterning of meaning is the prism through which human beings perceive the world (if one does not rely on the primitive ontological view according to which we perceive independent objects constituting the world). With a functional approach, the patterning of meaning is viewed as a level of the language system that has a foundational character, not consisting in encoding, and may serve as a starting point for semantic-pragmatic interpretation. The conventional meaning thus can be viewed upon as a disambiguated underlying structure of the sentence, offering a basis for a division of labor between linguistics as such and the interdisciplinary interpretation (which includes the logical analysis of language, aspects of cognitive science, of psychology, and so on).

If the utterance is specified as an occurrence of a sentence, then it is connected not only with its conventional meaning, but also with a specific reference assignment (which depends on contextual and other knowledge, on figurative meanings, and so on); without this, it would not be possible to distinguish from each other two utterances differing in their speaker, listener, place and/or time.

We may then say that the cognitive content, the 'sense' of an utterance, or the situation meaning, which includes reference assignment, and perhaps other aspects of the impact of verbal and situational context, represents that factor that is immediately responsible for the operational character of the utterance. The mental state (the contents of the memory, the current attitudes, and so on) of the listener is modified in accordance with her/his interpretation of the utterance, not directly by its outer shape.

We can conclude that the ultimate aim of the description of language is to capture the regularities of the way in which utter-

ances operate, abstracting from certain features of the discourse situations. The stock of the information and attitudes possessed (a) by the speaker, and (b) by the listener (with a specific impact of what the speaker assumes to be their intersection) is then to be analyzed as the core of the domain and the range of the mentioned operations. The regularities of these operations concern the conventional meaning as one of the sources of situation meaning or of sense. Therefore, linguistics studies the relationships between meaning and the phonologically expressed grammatical structure of sentences. The interactive turn certainly should not just have the character of superposing the operational view of utterances on traditional grammar. Even in the core of grammar, in syntax, the impact of communicative interaction on the structure of sentences has to be reflected: without accounting for such contextually based although semantically relevant and grammatically expressed phenomena as the topic-focus articulation or the anthropocentric subject-predicate relation we cannot achieve an adequate and economical description of language.

A VIEW FROM PRAGMATICS

Richard W. Janney

University of Cologne, GERMANY

Bickhard and Campbell (1992) stress the indeterminate, relativistic, constructed quality of linguistic knowledge, challenging the idea that information 'epistemically crosses' from world to mind via perception, or from mind to world via language. The locus of information, from their point of view, is inside the mind, in subjective representations arising from people's active, goal-directed interaction with the environment. For Bickhard and Campbell, the mind does not passively pick up information, but actively picks it out, constructing the world as it goes on the basis of its own internal needs and goals. Linguistic knowledge is thus not necessarily a mirror of nature. In their approach, the representing and the represented, the knower and the known, are co-implicated.

Bickhard and Campbell's critique of foundational encodings is a critique of meaning-based theories of language in general. It is also a critique of the assumption that language emergence and use can be explained in purely formal, logical, linguistic terms, without reference to further psychobiological or sociocultural considerations of any kind. Bickhard and Campbell say that understanding utterances as essentially pragmatic actions 'ties linguistics to psychology, social psychology, and sociology, at both the empirical and formal levels of analysis. This isn't a new idea in linguistics, of course. Still, Bickhard and Campbell's version of this standpoint can be read, at least at one level, as an attempt to develop an epistemologically based, psychologically plausible, pragmatic conception of human interaction as a sort of 'meeting of the minds'.

The focus of Bickhard and Campbell's approach is not on the transmission of information from person to person, as in encoding/decoding models of communication; and it does not presuppose a logical, 'like-minded' world.

Rather, the approach focuses on complex, goal-directed, interactive processes between people, in an intersubjectively constructed approximate world, where 'minds change', and 'meanings' are implicitly dependent on the negotiation of converging interpretations.



Bickhard and Cambell's idea of situational conventions as 'convergences of representations' reminds me of Malinowski's notion of communion. Malinowski distinguished between communication and communion as two central, complementary concerns of human interaction and identified the latter with pragmatics. Among some modern biologists of cognition, we find similar notions of structural coupling or structural intersection. These are attempts to step back from ideas of 'information', 'instruction', 'selection', 'inside/ outside', etc., and to try to suggest how cognitive systems and environments could interactionally define each other.

The conceptual focus of Bickhard and Campbell's approach is not on what specific knowledge of the world is represented in the mind, but on (1) how knowledge of the world arises in the mind, (2) how this functionally relates to people's interactional choices in different contexts, and (3) how such choices come to have intersubjective significance for the partners. Bickhard and Campbell reduce the old epistemological problem of how knowledge of the 'outside' arises in the 'inside' of the mind to the pragmatic problem of how knowledge of the 'other' arises in the 'self'.

Although it can be argued that Bickhard and Campbell's conception lacks concepts related to meaning and goal-directedness, I would argue that it raises at least some of the kinds of questions that need to be asked in pragmatics about linguistic interaction. Linguistic pragmatics, in addition to being a functionally oriented approach to language use and interpretation, is concerned in a broad sense with human interaction. This includes an interest in the prerequisites for, the influences on, and the functions of, human linguistic interaction in different contexts. And it includes the embeddedness of linguistic interaction in other processes (e.g., social, semiotic, psychological, biological, etc.). In this broader sense, its ultimate subjects are not language, grammar, or linguistic knowledge in isolation, but people making different types of linguistic and other interactional choices. The study of these requires integrative frameworks.

Bickhard and Campbell's criticism of foundational encodings, which emphasizes individuals as unique centers of experience, seems to me (almost in spite of their terminology) to be a step toward delineating something characteristically human in human interaction. Bickhard and Campbell locate the roots of interactional choice in intersubjective experience: (1) experience rather than logic is the locus of linguistic choices, (2) goals rather than rules provide the motivation for choices in specific instances, and (3)

intersubjectivity rather than meaning is the basis for negotiating understanding. However imprecise these concepts may seem to be from a formal linguistic point of view, they nevertheless refer to important underlying social and psychological aspects of human interaction. And ultimately, there is nothing inherently less respectable about a model of interactional choices that ignores symbolically encoded linguistic knowledge, than about a model of encoded linguistic knowledge that ignores people making interactional choices.

Bickhard and Campbell's attack on foundational encodings is bound to elicit indignant reactions. Still, a radical critique like this can, in my opinion, be a constructive act leading to an opening of possibilities. If we view their conceptualization as a net, somewhat after Karl Popper, and judge its usefulness in terms of the different types of phenomena it might someday enable us to 'catch' and approach from a unified point of view, it seems reasonable to tolerate, and even welcome, the controversy that this critique of foundational encodings could introduce into linguistics.

To paraphrase Duerrenmatt (1990), linguistic knowledge, as a thing in itself, will continue to remain a borderline concept: something thought up and aimed at, from which linguists' reflections rebound as formulas, theories, and hypotheses. Nevertheless, reflections on foundational questions like those raised by Bickhard and Campbell have an important place in linguistics. Bickhard and Campbell's discussion of foundational encodings is, I think, a serious attempt to outline an alternative epistemological perspective on linguistic knowledge, and to stimulate new discussion of basic issues in linguistic theory. It will be interesting now to see if linguists and others working in neighboring fields take up this conceptual challenge, and begin to investigate its further implications.

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