

MERRELL, Floyd.

2000. *Change through Signs of Body, Mind, and Language* (Prospect Heights, Ill.: Waveland Press).

PEIRCE, Charles Sanders.

- 1955a. "Abduction and Induction", ed. J. Buchler, *Philosophical Writings of Peirce*: 150–156 (New York: Dover). Compilation of original texts, 1940.
 1955b. "Logic as Semiotic: The Theory of Signs", ed. J. Buchler, *Philosophical Writings of Peirce*: 98–119 (New York: Dover). Compilation of original texts, 1940.
 1955c. "The Principles of Phenomenology", ed. J. Buchler, *Philosophical Writings of Peirce*: 74–97 (New York: Dover). Compilation of original texts, 1940.

RUESCH, Jurgen, and Gregory BATESON.

1987. *Communication: The Social Matrix of Psychiatry* (New York: W. W. Norton and Company).

THAYER, Lee.

1997. *Pieces: Toward a Revision of Communication/Life* (Norwood, N.J.: Ablex Press).

TOULMIN, Stephen.

1981. "The Charm of the Scout", ed. C. Wilder-Mott and J. H. Weakland, *Rigor and Imagination: Essays from the Legacy of Gregory Bateson* (New York: Praeger).

WATZLAWICK, Paul, J. BEAVIN, and D. JACKSON.

1967. *Pragmatics of Human Communication* (New York: W. W. Norton).

WILDEN, Anthony.

1987. *The Rules Are No Game: The Strategy of Communication* (New York: Routledge & Kegan Paul).

Playing with Bateson: Denotation, Logical Types, and Analog and Digital Communication

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Abstract: Gregory Bateson's work on play led him to conclude that paradox is the ground of propositions and denotation. Working through the concepts of analog and digital communication, logical typing problems, and various dimensions of "framing" and meta-discourse, I broadly illustrate how what Bateson came to call "the paradoxes of abstraction" inevitably arise within denotative utterances. In addressing the root paradoxes of framing and denotation which Bateson's work on play identified and sought to elucidate, this manuscript outlines and advances some of Bateson's main contributions to communication theory.

1. Setting the Stage¹

In his essay "A Theory of Play and Fantasy", Gregory Bateson (1955 [1972]) argues that an important evolutionary event occurred when some creatures, specifically humans, became able to take their signs "as signs." His point is that humans talk about talk, and in doing so, can call it into question. In fuller bloom this implies that we can advance formulated propositions (or even gainsay propositions) about what is or what is not. Bateson notes that such denotative

1. I want to express my gratitude and thanks to Willam K. Rawlins, John Stewart, Mark Pestana, Dewey Hoytenga, Maria Cimitile, Robert Mayberry, and Valerie Peterson for their many helpful criticisms and suggestions. I also need to thank the Josiah Macy Jr. Foundation for their kind permission to reprint the "Diagram for discussion purposes referred to as 'onionskin'", taken from Bateson's 1956 lecture/group discussion.

utterances always operate on "many levels of abstraction" (Bateson, 1955 [1972]: 179). The levels he refers to range from "metacommunicative" references (for example, "I am telling you the truth" or "You are taking me too seriously") to "metalinguistic" references (for example, "The word 'cat' does not have whiskers" or " $2+2=4$ is a true statement"). Even more broadly characterized, Bateson's essay on play and fantasy intends to "illustrate a stage of evolution—the drama precipitated when organisms, having eaten from the Tree of Knowledge, discover that their signals are signals" (Bateson, 1955 [1972]: 179). Bateson elsewhere echoes this underlying orientation where he states,

I became interested in the whole problem of play through realizing that there must have been an extraordinary step in the evolution of communication. . . . It seemed to me that when the human species ate of the fruit of the Tree of Knowledge, it discovered that automatic signs could be turned into signals and emitted with conscious or unconscious purpose. With that discovery, of course, also came the possibility of deceit, and all sorts of other possibilities. (1956: 157–158)

Obviously, then, Bateson suggests that denotative messages, messages which bear propositional content, are unique to human language and are an evolutionary achievement. They are *different from* other types of communication, but one for which we can find the evolutionary rudiments within mammalian play. Bateson thus backgrounds the evolutionary development from animal signals to humans' denotative utterances by asking us to consider first an "intermediate" stage: play. In his orientation toward play, he is not merely addressing theoretical difficulties associated with all sorts of framing behaviors including that class of behavior called "playing."² Although Bateson was interested in the emergence of classes of behavior, in how different organisms codify their environments, and especially, in how organisms exchanged and understood metacommunicative messages, all these interests nevertheless fit into his more overarching concern: how humanity (specifically denotative utterances and human epistemologies) became evolutionarily possible.

In this essay I bring out the relevance of Bateson's ideas on play to contemporary communication theory. His work contributes to the growing debates on epistemology, representationalism, and post-semiotic conceptions of language. In the wake of John Stewart's (1995, 1996) recent criticisms of "two-world hypotheses," Bateson's insights regarding the evolutionary emergence of denotative utterances offer needed considerations and give instructive further direction. Bateson's ideas well accommodate for the sense desired by two-world hypotheses without sacrificing the constitutive character of language, and his thinking

further non-representational approaches to communication without falling into overly textual post-modernist conceptions, or overly idealist social-constructionist ones (cf. Stewart, 1995, 1996). He offers an ontology of human speech, one which blurs the distinction between communication and epistemology without falling into either naive realism or idealistic nominalism.

This paper is divided into two sections. The first section, "Playing with Bateson," highlights key points in Bateson's (1955 [1972]) essay, "A Theory of Play and Fantasy." I here integrate two concepts from his writings: first, the relation as well as difference between "analog communication" and "digital communication," second, the importance of studying processes of abstraction. The second section of the paper, "These are Un-Speakable Complexities, I Said," illustrates the nettlesome character of the paradoxes of abstraction. I try to demonstrate Bateson's insight that humans can "know" that their signals are signals and yet, more often than not, syntactically "forget" their status as human creations. Subtle syntactical magic, linguistic conjuring through the use of the word "not," operates below and within our epistemologies, constituting the very "objects" of those epistemologies. Thus, the denotative aspects of language embody what Bateson, for the purposes of discussion, calls an "onionskin" (See Figure 1). And, the paradoxes of abstraction are the fundamental processes whereby humans, as Bateson nicely puts it, "pull themselves up by their bootstraps" (1956: 216).

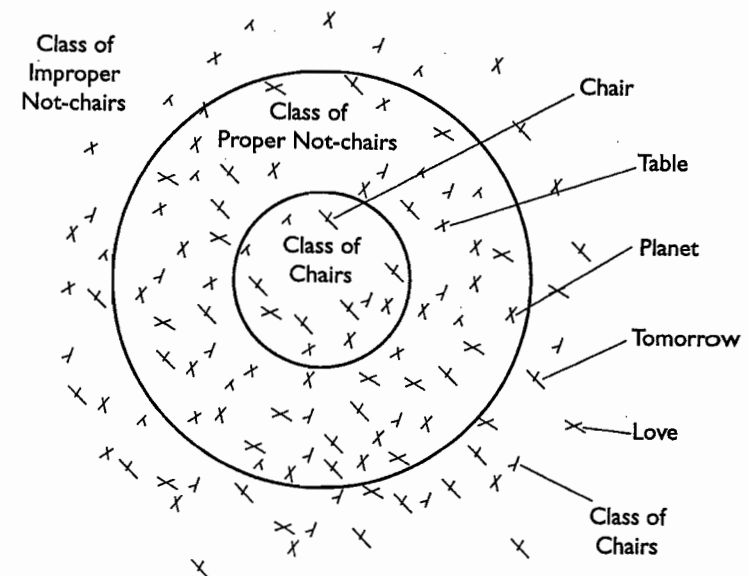


Figure 1: Diagram for Discussion Purposes Referred to as "Onionskin"

2. Readers interested in "framing" also should see Erving Goffman (1974).

2. Playing with Bateson

Bateson recounts that his original insights occurred while he watched monkeys at the Fleishhacker Zoo. The young primates seemed to be playing with each other, implying that they were sending metacommunicative messages about their interactions; they were signaling that their actions were *not* fighting. Bateson initially attempted to clarify this complex issue by suggesting that: "The playful nip denotes the bite, but it does not denote what would be denoted by the bite" (1955 [1972]: 180). Further delineating this idea, Bateson writes, "The statement, 'this is play' looks something like this: 'These actions in which we now engage do not denote what those actions for which they stand would denote'" (Bateson, 1955 [1972]: 180). But this is not to say that we consistently distinguish between these levels. In fact, the borders of metacommunicative frames such "play" or "pretend" commonly slip and slide ambiguously around, and this increasingly is the case, as Bateson points out, in the frame, "Is this play? Moreover, serious difficulties emerged within Bateson's initial attempt at clarification.

Bateson claims that he subtly committed what he has chosen to call a "logical typing" error: the phrase "nip denotes the bite" and the phrase "what would be denoted by the bite" both use the word "denote" but do so in very different senses. They (nip and bite) refer to different orders of abstraction, and, he argues, paradoxes of abstraction occur if we conflate this difference. It is here, precisely, that the difficulties in following Bateson's thinking become most pronounced. In fact, in a critical doctoral dissertation John Moran takes pains to demonstrate that Bateson's argument, from a strictly logical analysis, generates neither paradox nor even a violation of Russell's Theory of Logical Types. Moran's well informed account shows that Bateson's uses of the Theory of Logical Types are too loose, too imprecise, and too incomplete. Regarding Bateson's discussion of the differences between the meanings of the word "denote," Moran writes,

The simple fact that two different senses of a word occur in an expression does not violate the Theory of Logical Types . . . the two senses of "denote" in Bateson's expanded version of "this is play" are perfectly valid and admissible. . . . Bateson, then, does not demonstrate that "this is play" generates paradox of "Russellian or Epimenidies types". (Moran, 1979: 76)

Moran's account is both accurate and clear, and yet, it unfortunately underestimates Bateson's overall concerns. Moran correctly takes both "nip" and "bite" as words which refer and which can be made subject to strictly logical analysis. This makes some sense at first but less so if we stick closely to Bateson's own goals. When Bateson talks about the relation of the nip to the bite, claiming that the nip is at a higher order of abstraction, we should not forgetfully take both as simply words referring to different, "already given," classes of action in

the world. Bateson, on the contrary, is trying to address something much more complicated than this: how such propositional referring (i.e., a denotative utterance) becomes at all possible. He wants us to consider developments necessary for propositional language to emerge as a possibility. Quite paradoxically, Bateson must use language in his attempt to talk about how it emerged, and such framing by abstraction precipitates an ineradicable slipperiness. Bateson, for example, states,

Human beings have evolved the 'metaphor that is meant', the flag which men will die to save, the sacrament that is felt to be more than an outward and visible sign, given unto us.' Here we can recognize an attempt to deny the difference between map and territory, and to get back to the absolute innocence of communication by means of pure mood-signs. (1955 [1972]: 183)

Although Bateson here focuses upon particular examples, he is not characterizing rare and occasional occurrences, something that happens every once and a while. Not at all; language itself is the "metaphor that is meant". Consider an almost too simple case: A toddler asks, What is an apple? I might go into a refrigerator and pull one out. Handing it to the child, I say, "This is an apple". Notice the naturalness of the expression, "This is an apple". Still, later in life the child will learn that "apple" is a noun in the English language. Indeed, we seem to make sense of the illustration that "this is an apple", even though apple is but a word. Other than general semanticists, most people don't worry about such everyday oddities, and yet, this smacks of the paradoxical mystery Bateson tried to bring into explicit clarity.

To advance Bateson's concerns, as well as clarify the logic behind his argument, we need to recognize the differences between bite and nip as differences between "analog" communication and rudimentary "digital" communication.³ As I will try to make clearer, the bite neither affirms nor denies because it is not *about* anything; it simply is what it is. "The bite" is continuous with all other movements and thereby remains installed in the non-repeatable once-occurrent context. It is an analog moment of mood-signs, the signs which are its relations [and hence, we have been making category mistakes as we have called it "it"]. On the other hand, the meaning of the term "denote", as applied to the playful nip, means something akin to "signifies" or "refers to". The nip, therefore, is metacommunicative to an original relation, and so play, metaphorically considered, resembles the seminal structure of denotative utterances. The differences here are well summarized as:

3. Rawlins (1987) more strictly adheres to Bateson's position in suggesting three kinds of codification, (analog, gestalt, and digital). For consistency and simplicity, I have followed the lines traced by Wilden (1972) and as a consequence have taken gestalt and/or iconic codification as a kind of first-order digitization.

"A digital code is 'outside' the sender and receiver and mediates their relationship; an analog code IS the relationship" (Wilden, 1972: 173). This implies first that the propositional content within acts of speech is necessarily of a different logical type than that to which it refers. Second, the propositional aspects of language operate with logical types. Third and finally, because we habitually and forgetfully pass-over the difference between differences and distinctions (and also conflate distinctions between logical types), opportunities abound for what Bateson called the "paradoxes of abstraction". As Bateson summatively states, "The message, 'This is play', . . . represents a rudimentary beginning at least of what we call an onion-skin structure" (1956: 158).

2.1 Analog and Digital Communication

My analysis of analog and digital communication draws heavily upon Anthony Wilden's chapter "Analog and Digital Communication: On Negation, Signification, and Meaning", from his excellent *System and Structure*. Wilden's reads of Bateson's work (also cf. Bateson and Jackson, 1968 [1964]) lay out the wide range of issues at stake, and, his tables of the analogic and digital aspects of communication are worth careful consideration (also see Watzlawick, Beavin, and Jackson, 1967).

Most broadly addressed, analog communication includes all events and actions which are irrevocably contextualized within irreducibly concrete and once-occurrent (i.e., non-repeatable, non-decomposable) situations (cf. Bakhtin, 1993). Analog communication registers *differences within* existing relation-states according to actual goal-seeking. An endless array of examples could be offered to illustrate analog communication: as we move, the perceived though unmeasured distances that continuously change between ourselves and the rest of the surround, pressing a foot upon an accelerator pedal, disentangling an intricately snarled knot, watching the visible growth of a balloon, the specific actions which comprise any athletic sport, and most generally, non-linguistic communication through the senses (between organisms or between organism and environment). And even speech, it must be observed, always holds much that is analogic, much which cannot be weaned from its original context of occurrence (e.g., there is always a certain volume, a certain intonation, and a certain rate, etc.). Thus, analog communication operates within all behavior, all action, all haptic spatio-temporal arrangement of material conditions, and as an ineradicable emotive underbelly to the spoken word (cf. Bateson, 1966 [1972]). It meaningfully regards and manages those *differences within* existing relation-states.

In all of these diverse cases of analog communication, *there are no differing levels of abstraction, and so, there are neither classes nor different logical types*. We

find only concretely situated differences within existing (i.e., once-occurrent) relation-states. These aspects of our communication remain without definite gaps, holes, or discrete boundaries; all differences occur within and along continuous and contiguous positive values. This means that there is no equivalent to "not," even if we could find the rudiments of a kind of negation in acts of refusal or withdrawal. Analog communication, given its dense concreteness, is *not* denotative and is *not* propositional (cf. Watzlawick, Beavin and Jackson, 1967: 101). Moreover, syntax and temporal tenses, such as are provided by language (e.g., the prepositional phrase, the future conditional, the perfect past) are wholly absent. All registered relations, as always fully what they are, remain submersively within the present and within infinitely thick prepositional possibilities. Because language isolates, delineates, and basically delimits, any uttered prepositional phrase is a selection from infinite other prepositional possibilities which thereby are down-played or even ignored. For example, a cup is never only "on" the table. It also is "next to" the computer, "behind" the mouse-pad, to the "left" of the window, "in front of" the wall, "under" the ceiling, "above" the floor, "inside" the office, "diagonal to" the wastebasket, etc. Additionally, analog communication seems without the capacity for communicating *about* itself; this level of communication is not "self-reflexive". Clearly, a disapproving frown or a particular vocal tone can metacommunicatively 'frame' a linguistic statement. Still, analog communication is not reflexive to itself. Analog differences, it must be remembered, are too concretely situated for such ideal free-play; they cannot be selected out and brought into "proposed" combinations, short of actual spatial-temporal alterations. As having no gaps, no holes, no lines separating distinct "things", there are merely differences *within* continuity. Thus, I cannot by way of analog communication show that I am one thing and the world is something else; all is within concrete once-occurrent installment in the analog. Ultimately, because analog communication is not denotative and is void of propositions, we can characterize it most tightly by saying that it is the regard and management of *differences within* relation-states.

Whereas the analogic aspects of communication meaningfully manage concretely installed differences within actual once-occurrent relation-states, the digital aspects register *differences between* relation-states, and thereby, seem to render discrete *distinctions* (i.e., classes, types or essences) which are thereby isolatable and detachable from their dense analogic installment. Digitalization transcends the dense continuity of analog differences. In fact, we digitalize analog aspects of speech by merely being able to hear spoken *words* out of the analogic qualities of voice. The digital aspects of speech rely equally upon eidetic gaps in acoustical continuities and the syntactical synthesis which meaningfully combines

distinctions. Moreover, distinctions increasingly can be recognized at higher and higher levels of abstraction (e.g., cat, mammal, organism; table, furniture, object, etc.). Thus, not only are the differences within analog sounds transcended to register words (e.g., discrete lexical things), but also, words, given syntax, become the condition for punctuating any analog continuum within scaffolded hierarchies of abstraction (e.g., within classes and categories). With the digital aspects of communication we can isolate and delimit, contextualize and analyze.

Digital aspects of speech (i.e., linguistic *distinctions*) are spontaneously and pre-reflectively managed according to the principles of substitution and combination (e.g., phoneme, word, and phrase selection).⁴ "Selection (the relation of similarity) and combination (the relation of contiguity—the metaphoric and metonymic ways—are considered by Jakobson to be the two most fundamental linguistic operations whether at the level of the phonemes (like the *Fort! Da!*) or at the level of sentamemes or words" (Wilden, 1968: 245). Granting both selection and combination, we should not imagine language as a collection of word-things which are consciously and thematically selected from, nor should we imagine that pre-existing words are reflectively brought into combination with one another. Rather, denotative speech is an emergent digitalization. It occurs atop a more primary digitalization, the one by which we transcend differences within once-occurrent relation-states—including the very sounding of acoustical differences. Maurice Merleau-Ponty addresses these issues within his general phenomenology of speaking. He writes,

Speaking is possessing language as a principle of distinction, whatever number of signs it permits us to specify. . . . In other words, the linguistic value of each word is defined only through the presence or absence of the words surrounding it. . . . Moreover, the words and very forms for an analysis of this kind soon appear to be secondary realities, the results of a more originary differentiation. The syllables and letters, the turns of phrase, and the word endings are the sediments of a primary differentiation which, this time, precedes without any doubt the relation of sign to signification, since it is what makes the very distinction of signs possible. The phonemes, too, which are the real foundations of speech, since they are reached through the analysis of spoken language and have no official existence in grammar and dictionaries, by themselves mean nothing one can specify. But for this very reason, they represent the originary form of signifying. They bring us into the presence of that primary operation, beneath institutionalized language, that creates the simultaneous possibilities of significations and discrete signs. (1969 [1973]: 32–33.)

4. For provocative analyses of language via Jakobson's structural approach [the axes of selection and substitution (vertical or paradigmatic operations) and contexture and combination (horizontal and syntagmatic operations)] see Elmar Holenstein (1976) and Richard Lanigan (1992).

Utterances bearing propositional content occur as we transcend the eventful gesticulations of analog differences to apprehend digital distinctions at higher levels of abstraction. Furthermore, linguistic distinctions (i.e., signifiers) are brought into syntactical combination with others and thereby enable signification more broadly applied; with digital aspects of speech we can state propositions *about* differences within relation-states.

Distinctions (i.e., classes or types) require boundaries, and, boundaries require the "not". In other words, we classify by inclusion (what is to be regarded as within the class) and by exclusion (what is *not* to be taken as a member of the class). And the "not", as already implied, can be found only at the level of digital communication. Moreover, we should not assume that the "not" is merely one sign among others, just one more word. Such an assumption distorts or even obfuscates how the "not" functions syntactically: it is a metacommunicative rule for introducing gaps into analog continuums. Wilden stresses the importance of the *syntactical* "not" where he states,

We have to distinguish the syntactical "not" of a digital statement from the commonsense idea that negation is equivalent to the absence of something, to nothing, or to absence in general. . . . It seems that saying "not" about some possibility or concept or state of affairs is a logical operation of a different logical type from that which relates two statements (etc.) by exclusion. "Not" is in a metalinguistic relationship to what it negates. . . . In other words, boundaries are the condition of distinguishing the "elements" of a continuum from the continuum itself. "Not" is such a boundary. . . . In number theory, set theory, and language, "zero", "ø", and "not" are the rules for punctuating boundaries. "Not" is of a higher logical type than zero or ø, if only because it is the logical prerequisite for zero or ø. (Wilden, 1972: 184–186; 188)

The "not", therefore, is *essential* to the digital aspects of speech. Such negativity operates at a different level of abstraction than that which it negates; it is similar to the "line" that enables us to see that a figure is *not* its background, or to the space disclosing that one word is not another. The syntactical "not" thus holds the necessary requirements for introducing distinctions into analog continuums, and even more significantly, for using those distinctions within asserted propositions. We create the possibility of employing logical types within a moving hierarchy of abstractions.

We can say, as Bateson pointed out, that a table is not a chair, and moreover, that the class of chairs is itself not a chair. But it is also the "not", Bateson suggests, that leads to logical typing errors. When Bateson began his 1956 discussion with the question, "Does it make you a little uncomfortable when I say that tomorrow is not a chair?", (1956: 145) he was trying to illustrate that the syntactical "not" can be used in radically different senses (see Figure 1). We

can use it when speaking of those namables ("proper non-members") which are the ground for the members of a class, and secondly, we can use the word to speak of all of those namables ("improper non-members") which are not so much the ground for the class as are of a wholly different logical type. In the course of that group discussion, Bateson demonstrates that saying "tomorrow is not a chair", even if it is a violation of the Theory of Logical Types, may make a kind of sense. In fact, and this is a critical point, it makes no less sense than the claim that the class of chairs is not a chair, no less sense than saying that the word "chair" is not a chair.

To speak is to categorically delimit the continuity and contiguity of analog continuums. By selection, combination, and negation of distinctions, we conditionally delimit the indefatigable density—the once-occurrent concreteness—and thereby can signify *particular* relation-states. Taking the infinity of prepositional possibilities, speech introduces boundaries; it punctuates relation-states at higher orders of abstraction. We digitally codify concrete contexts and therein disclose categorical apprehensions (i.e., things as *in* classes). Given this, we can systematically imagine how "things" are and could be related. In stark contrast, we should recall that the analogic elements of communication can manage only concrete, actually present differences within relation-states. Digitalization transcends such installment in sensory immediacy.

Denotative utterances depend upon digital distinctions; they require classes or essences, idealities which cannot be concretely installed in "real" space and time (cf. Anton, 2002, 2001). This means that words *qua* signification do not have an actual (i.e., empirically concrete) spatial nor temporal location.⁵ They are not installed within the concrete nexus of analog continuums. Erving Goffman well addresses this issue where he writes, "And among all the things of this world, information is the hardest to guard, since it can be stolen without removing it" (1967: 78–79). As a more direct illustration, consider the following two sentences: "Apples are my favorite fruit". And, now, "Apples is a word in English". Why do we change the verb to a singular when talking about the word, "apples?" Surely, millions of people have used the word, and yet, it remains as one, singular. Would it even make any sense to say that there is a certain word that has not been used by more than one person (not even *heard* by more than one) and which has been used only once by that person? Would this even be a word? The sticking point is that speech can make statements bearing propositional content (it can signify) because the realities it draws upon (digital distinctions)

have no concrete spatial nor temporal location; they are classes and/or types, objects which can be found only in abstraction (cf. Anton, 2002). Again: such realities exist only at the level of digital distinctions, and as such, these cannot be found at the level of analog differences.

2.1.1 Some Examples

We continually use both analog and digital communication. We integrate and coordinate these different aspects of the whole communication process. We switch between and translate across, often without explicit awareness of how we are able to do what we do. Consider, as an initial illustration, an unmarked stereo volume knob. The knob provides a continuous adjustment in volume and allows one to make "more or less" of it. At a certain point, we might actually speak the words, "The sound is too loud", that is, "It is *not* quiet enough". This kind of sense-making (a spoken proposition) exemplifies how we can digitalize an analog continuum of differences. Taking the sheer differences in "more or less" sound, we, at a higher level of abstraction, propose an "either/or" categorization. Employing digital distinctions to express the proposition, we can claim that it is "loud", which also signifies "not quiet". Notice that the actual sound, at whatever specific volume, is *neither denotative nor propositional*. We should grant that two individuals can "dispute" the sound level silently. For example, each adjusts the knob in one direction only to have the other person adjust the knob in the other direction. Here, without saying a word, two people can seem to disagree over the level of sound. Nevertheless, the actual volume always and simply is what it is, and, as should be apparent, only propositions *about* it can be asserted or denied. This helps to further illustrate Wilden's claim that, "Because the analog does not possess the syntax necessary . . . one can *refuse* or *reject* in the analog, but one cannot *deny* or *negate*" (1972: 163).

Consider, as a second example, a large room filled with 100 round balloons, each of which is a different size and a different shade of blue. In such a room we immediately perceive and register these differences; we see them instantly. If asked, we may be able to arrange the balloons in sequenced orders according to size or shade. Still, our semantic resources for "talking about" such differences, thereby employing linguistic distinctions, are quite limited. For size, we are mostly limited to tiny, small, medium, large, huge, and, of course bigger than or smaller than. With regard to color, few persons have lexical resources to name over twenty shades of blue, even though hundreds of shades can be visually discriminated. Additionally, it is over which names are to be given to which size and shade that we would most likely argue, not which are larger or smaller, nor which shades are lighter or darker. Indeed, speakers of radically different languages could reasonably agree upon size and shade arrangements, though

5. For an excellent address of these issues see Suzanne K Langer's (1942: 83–116) discussion of the emergence of denotation in the chapter "Language". Also see Hans Jonas's (1966: 157–182) "Image-making and the Freedom of Man".

their respective resources for talking about these kinds of differences could vary greatly. This shows how analog communication is rich in "semantic" meaning, yet this can remain ambiguous when we attempt to signify it (i.e., speak about it).

To conclude this discussion of the analogic and digital aspects of communication, consider a final example. Imagine a series of ten large identical documents. Each page of each document holds complex line marks which closely resemble the others. Now also imagine that the pages are in a definite sequence and are designed to remain in that particular order. So far, this is not too different from any document collated according to page numbers. But this set of texts has a unique form of "pagination".

Figure 2. An Analogic Attempt at Pagination depicts a top and side view of one document from the collection. Rather than standard pagination (page numbers

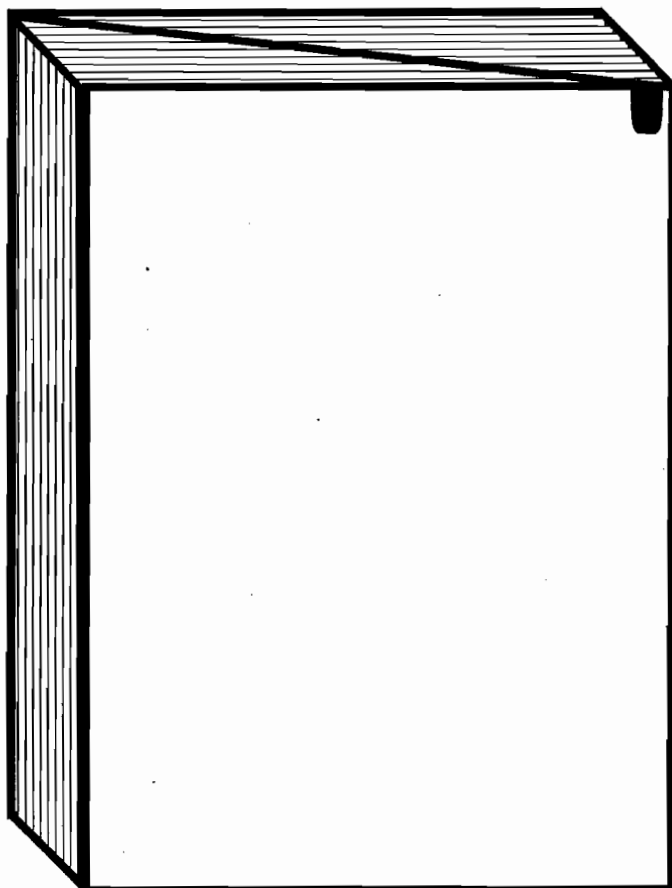


Figure 2: An Analogic Attempt at Pagination

on each page), the document is "notched and branded" from front to back diagonally across the top of the pages.

Each page now noticeably holds a unique relationship to the others. Given such markings, if we accidentally were to drop the document, we would have some means of placing the pages back into their intended sequence; we could gain the needed sense of seriality for the task. Nevertheless, each page remains held in relation to contiguous others. These are analog differences not digital distinctions. Each text is a series of *differences within continuity*. Consider how situated and imbedded this kind of contiguous relation remains. Individual pages, although they can be placed into their intended order, cannot be referred to independently. They are not, in Dewey words, "liberated from local and accidental contexts", and so, at this level, they are not "subject to ideal experimentation" (Dewey, 1925 [1988]: 132). Thus, traditional pagination, as a mode of digitalization, offers much more power for organization and interaction. Given the capacities of digital communication (i.e., the functions of substitution, combination, and negation), we can *signify* relations rather than manually, actually, arrange them. For example, we now can cite any individual page. We also can say how each could be related to any other, (e.g., which ones are *not* contiguous with each other). Moreover, we easily and quickly could turn to the same page on different copies. Even though both establish relations between pages and operate with a kind of "identity", traditional pagination uses discrete *distinctions* rather than relational *differences*. Said otherwise, page numbers, as digital distinctions, are fundamentally *about* something. They operate as discrete signifiers and so generate self-standing pages, *things*, meaning that each and any page can be referred to in isolation.

These brief examples demonstrate how the analogic aspects of communication are installed in the "once-occurrent non-repeatable context", whereas the digital aspects communication operate with abstract classes, repeatable essences. We found that the difference between analog *meaning* and digital *signification* helps delineate the differences between, what Wilden calls, "concrete goal-seeking" and "denotative and concept-transferral", respectively. Thus, only the digital aspects of communication are propositional and, as about something, are thereby capable of being asserted or denied.

2.1.2 Analog and Digital in Review

Wilden's analysis of Bateson's work on play and fantasy directly summarizes the present discussion:

It is possible to see animal play as a primordial metacommunication—in the strict sense of a message about a message—of a different logical type, about the analog communication of fighting. In play, the nip is the metonymic sign of the

bite (part for the whole), but not the bite itself (which is a signal). Whereas the bite is what it is, the nip represents what it is not. The nip signifies the absence and the presence of the bite. . . . The introduction of the second-level sign into a world of first-level signs and signals detaches communication from existence as such and paves the way for the arbitrary combination of discrete elements in the syntagm. It is thus a discovery of difference at a higher level of communication or organization. . . . Once the digital signal or sign (a distinction) has been constituted out of a world of analog differences, the way is open for the linguistic signifier (which must be digital in form). The amorphous domain of play provides a sort of bridge to conceptualize the digitalization of the analog which is the necessary condition for language. (1972: 172–173)

We unfortunately all too often fail to regard the radical difference in logical type between analog differences and digital distinctions. In fact, the scope of Bateson's considerations remains difficult to grasp because the bite is intended to be taken as lower in abstraction than the nip, and yet, both verbal expressions, "bite", and "nip", are much higher in abstraction than that which Bateson was trying to address. Wilden accounts for this slipperiness, that slipperiness which inheres in trying to talk about how talk became possible, by arguing that natural language is a kind of "double articulation". This is, what he calls "second-level digitalization",⁶ or more specifically, the employment of "linguistic signifiers". He suggests that natural language, "is the level of double articulation (duality of patterning) and negation. It is capable of taking over or replacing the analog in terms of both form and function" (Wilden, 1972: 165). It is here, with Wilden's concept of double articulation, that Bateson's point regarding the logical type difference of the term "denote" (regarding the "nip" and the "bite") can be explained most effectively.

If we try to adhere to the logic of Bateson's insights, there is no discrete "thing" such as "the bite" within analog communication. Without classifications made possible through digitalization, analog differences remain locally installed and once-occurrent (not yet grasped categorically). Thus we make errors of abstraction by simply using articles such as "an", "a", or "the" in characterizing any "moment" or "part" of analog continuums; to do so is to treat the moment or part as if it were in a class of acts rather than concretely what it is. We confuse the on-going flow of continuous and contiguous relation-states with symbolic combinations of discrete distinctions. Wilden, once again, nicely summarizes these issues:

6. By "first-order" digital operations Wilden (1972) mainly addresses decision-making processes, especially where simple feedback is needed (e.g. the on-off setting for a thermostat, a circuit breaker on a stereo speaker, a neuronal decision to fire or not, the automatic shut-off on a coffee pot).

Whereas in the bite, energy and information are one (as in the brake pedal of a car), in the nip the information is distinct from the energy. . . . The world of communication of the bite is full of real differences; with the nip, gaps begin to appear, something akin to the zero-phoneme or to the space between one and two. And whatever else the nip may be, it is no-thing. The nip begins as a real metonymy (a part for the whole, related by contiguity) and becomes a symbolic metaphor (something standing for something else, related by similarity). (1972: 251)

Hence, the nip, as Bateson employs the term, represents the rough evolutionary beginning of the metacommunicative capacities needed for denotative language to emerge. Bateson's actual verbal expressions "the bite" and "the nip" are, therefore, necessarily of a different logical type than that to which he was attempting to refer. Indeed, the degree of abstraction (i.e., degree of difference between energy and information) between these signifiers and what they refer to is vastly greater than the degree of abstraction between what Bateson originally tried to mean by the analogic communication of "bite" and "nip". Said otherwise, what Bateson tried to refer to by the words "bite" and "nip" (recall that he was attempting to talk about the conditions necessary for talk to emerge as a possibility) do not appear anywhere on or in the "onionskin", even though we now, by digital distinctions, can speak of the class of behaviors called "bites" and those called "nips". The nip, as he intends it, offers a rudimentary difference of logical type, a difference which becomes the ground upon which an onionskin could become possible.

Alfred Korzybski, father of the General Semantics movement, adamantly maintained that training in "consciousness of abstracting" would lead people beyond the paradoxes of abstraction. In contrast to this belief, Bateson's position continually stresses the inability to achieve this thoroughly. As Bateson states, "Korzybski was, on the whole, speaking as a philosopher, attempting to persuade people to discipline their manner of thinking. But he could not win. When we come to apply his dictum to the natural history of human mental process, the matter is not so simple" (1979: 30–31). Additionally, consider that Bateson elsewhere admits,

We do not, any of us, achieve rigor. In writing, sometimes, we can take time to check the looseness of thought; but in speaking, hardly ever. . . . I know that I personally, when speaking in conversation and even in lecturing, depart from the epistemology outlined in the previous chapter; and indeed the chapter itself was hard to write without continual lapses into other ways of thinking and may still contain such lapses. I know that I would not like to be held scientifically responsible for many loose spoken sentences that I have uttered in conversation with scientific colleagues. But I also know that if another person had the task of studying my ways of thought, he would do well to study my loosely spoken words rather than my writing. (1968: 230)

Toward the end of his career Bateson argued that, "It seems to be a universal feature of human perception, a feature of the underpinning of human epistemology, that the perceiver shall perceive only the product of his perceiving act. He shall not perceive the means by which that product was created" (Bateson, 1977: 238). We take that which emerges only because of digitalization as if it were merely discovered "in" analog continuums. We simultaneously use and then forget about our linguistic resources. But, if we did not forgetfully confuse logical types, we would not get lost in novels, we could not suspend our disbelief within movies, we would remain unable to recognize the genre of any utterance, and ultimately, we never would have been able to take our utterances seriously.

3. "These are Un-Speakable Complexities", I Said

Recurrent difficulties occur whenever we try to talk about the relations between words and things, or between language and the world, or between the verbal and the nonverbal (i.e., whenever and wherever we conflate the difference [and distinction] between analog differences and digital distinctions). But similar difficulties occur throughout the scaffolded hierarchies of logical types within digital communication. In such cases we purchase sense through the use of higher and higher abstractions, and all the while we seem to presume that our subject matter becomes less abstract. The difficulty here, Bateson points out, is that "As soon as sufficient complexity is reached to permit of two or more levels of abstraction, the organism becomes able to treat abstractions of a higher level as though they were equivalent to abstractions of a lower level" (1968a: 191; also cf. Bateson 1968b [1972]). This especially seems to be the case because we so quickly and forgetfully employ "metalinguistic" terms (cf. Anton, 1998). Therefore, we take the syntactical redundancy which emerges from our use of overlapping reference on multiple levels of abstraction as if this enabled empirically sound statements regarding things independent of language. We easily forget that what can appear to be an empirical statement (e.g., how the verbal relates to the nonverbal), is, in fact, a linguistic redundancy created by syntactically combining, in an overlapping reference, differing logical types. By combining multiple levels of abstraction in a given proposition, we become able to make sense of empirical assertions of the naive realist type.

Although full analysis of these pervasive difficulties surpasses the scope of this essay, I here can provide a few heuristic considerations. I begin with Bateson's (1956) lecture/group discussion, published as, "The Message, 'This is Play'". One of his opening statements is, "We live in a universe of namables". Even if we grant to this proposition its clear and immediate sense, we should observe how subtly it suggests that "we" and "a universe" are not an *already named*. The syntax of the

sentence lends the sense that "we" and "a universe" are not yet included within the "namables". It implies that *we* and a *universe* are already given and would be in addition to what is namable.

Second, Korzybski's *Science and Sanity* discusses at length the non-identification between "words" and the "un-speakable objective level", and he succinctly summarizes the general spirit with his pithy one-liner: "Whatever one might say something 'is', it is not" (1933: 409). In this instance Korzybski's utterance cuts against his insights as he states them. The utterance syntactically implies that the words "something" and "it" are not already something said. Obviously, Korzybski would defend himself and say that this exactly is his point, as he sums it up elsewhere: "It is evident that every time we mistake the object for the event we are making a serious error, and if we further mistake the label for the object, and therefore for the event, our errors become more serious" (Korzybski, 1949: 245). Notice the same difficulties again: he uses the words "object" and "event" to state his insights and thereby uses the resources he calls into question; he cannot propose a non-identification—nor call identification into question—without subtly making the mistakes that he wishes to challenge.

Third, Kenneth Burke's essay, "What are the Signs of What: A Theory of Entitlement", offers relevant considerations. Burke suggests that the socio-political order "depends upon the verbal order in a way that the natural order does not" (1966: 375). He attempts to clarify what he means by writing,

If I say "table", and you don't understand me, there is at least the possibility of my using the physical object as the source of communication between us. Or, at once remove, I might show you a picture of a table. But if I say "democracy" or "dictatorship" or "rights" or "crimes" or "obligations", despite the vast institutional backing that such words may come to have, there is no clear "natural" counterpart to the word. (Burke, 1966: 375)

A difficulty here is how to make sense of Burke's words "physical object". It would seem that all abstract words for the natural order, words such as "physical" or "object" or "thing" or "entity" or "natural" or "something", likewise depend just as vitally upon the verbal order. How, we might ask Burke, could someone present a picture that means the "natural" counterpart of the words "object" or "thing" or "entity"?

Finally, consider this: if asked to clarify what the general semanticists meant by the term "abstraction", we might explain as follows: "To abstract is to classify things according to commonalties. The higher the level of abstraction, the greater and the more diverse are the things within the class; the lower the level of abstraction, the smaller the number and less diverse are things within that class". If this seems a fair account, take a moment to notice its slipperiness.

In this definition the word "things" is used as if it refers to what is not already in a class. It seems that we abstract by noting commonalities across things, but such a description pushes from attention the fact that the word "things" refers to what already is classified. Even if we speak of entities which are "not yet" classified, we may lead ourselves to overlook the fact that we already have classified them. In the previous sentence, for example, the words "entities" and "them", if they refer at all, refer to what are already within the class of "entities". Whenever we say what something is called, we can seem to think that the thing thereby referred to is not yet classified, or perhaps identified as eligible for classification. Our sense making, that is, enables us to forget that we already have called it "something" and also "thing". And even here, we likewise may forget that we called the thing "it". And now "thing" again. All said, we slide from one word to another, obviously taking some to be labels for things while taking others to be things referred to (i.e., not more labels). Indeed, we might further imagine someone trying to explain the term "abstraction" in this way: The person, holding a cup of coffee, states that the thing she is holding and drinking from is *not* a "cup". "Cup", the person then says, "is the English word we use to refer to this thing; the actual thing in my hand is not a 'cup', but rather, 'cup' is a linguistic convention that enables us to categorize this thing". Note here that the talk about it, as funded by digital aspects of communication, *increases* in abstraction: we take the word "cup" as an abstract label and simultaneously take the word "thing" as if it were the thing more directly, as if this were a less abstract term.

By syntactically combining different levels of abstraction in an overlapping reference, we paradoxically produce the sense that we can talk about what is independent of language. Such paradoxes of abstraction arise mainly due to the conflated difference in logical types between general or abstract words (e.g., "things", "entities", "objects") and metalanguage or words that refer to the verbal order (e.g., "speech", "language", "words"). Whereas the word "things" makes a categorical reference, the word "language" makes a categorical reference to linguistic referencing per se. This means that even though non-metalinguistic words can imply that their referents preceded the words we used to refer to them, this sense is facilitated only through the powerful syntax that digitalization enables: whenever used in combination with metalinguistic terms, the obvious sense carried is that the referent is already related to language. Terms such as "language", or "words", or "speech", when used in syntactical combination with abstract words such as "object" or "thing", enable a mode of "overlapping reference" (cf. Holenstein, 1976). They open a "code to message" reflexivity which allows us to make sense of the idea that "objects" and "things" preceded the words by which we grasped

them. Hence, linguistic signification not only facilitates a digitalizing of analog relations, but, as holding metalinguistic references, enables a self-reflexivity that becomes forgotten (taken-for-granted) in the claim that "things came before language". By the workings of the very syntax we can say that things precede language, and, this can make sense, but only because we have used metalinguistic references and so *already* have referred to the verbal order.

Similar kinds of difficulties emerge from any overly-literal attempt to separate a class from its name. Clearly, logical-typing errors occur if we confuse a class with its name. But the question is: how could this thoroughly be avoided, for doesn't an unnamed category seem not to be a category at all? What would an unnamed category be a category of? A more illustrative example may be needed: Common sense dictates that particular individual apples must have preceded the class of apples. But, if we do not yet have the class of apples, how could any one apple be counted as an apple? The difficulty here, as Lee Thayer suggests, is that "To have *one* of anything, we already must have a category" (Thayer, 1997: 75). Thayer's point is that individual things do not precede the categories by which we categorize them. Take, for further example, Bateson's entries into the problem of play. Even these subtly seem to underestimate how deeply run the difficulties of what he calls an "onionskin", (i.e., how higher levels of abstractions can be taken as if they were lower levels). Bateson (1956: 145) states, "We live in a universe of namables. Within that universe we make classes". But could the namables come before the classes? Are not the namables thereby already within a class, the class of namables? (also cf. Scheffler, 1967: 12-14). In this sense, any denotative utterance already displays the root paradox of abstraction.

Someone following in traditional realism still might try to argue that language is not needed for the existence of kinds of things. On the contrary, it is only for our convenience (it merely aids us) in labeling naturally occurring types. Common sense says: "I don't care what you call the things. Whether you call something a 'cup', a drinking vessel, or an 'object' does not matter; the actual thing is still here. The words are simply different labels for it." This makes sense, at least at first. But, as I have tried to illustrate in many ways, we have not so much made good sense as have enabled ourselves to overlook our non-sense. Recall that when the White Knight meets Alice, in *Through the Looking Glass*, he prepares to cheer her up by playing some music. But first he states,

"The name of the song is called 'Haddock Eyes'".

"Oh, that's the name of the song is it"? Alice said, trying to feel interested.

"No, you don't understand", the Knight said, looking a little vexed. "That's what the name is *called*. The name really is 'The Aged Aged Man'"

"Then I ought to have said 'That's what the song is called'?" Alice corrected herself.

"No, you oughtn't: that is quite another thing! The *song* is called 'Ways and Means': but that's only what it's *called*, you know!"

"Well, what is the song, then?" said Alice, who was by this time completely bewildered.

"I was coming to that", the Knight said. "The song really is 'A Sitting On A Gate': and the tune's my own invention".

We may feel that Alice, eventually, got to the bottom of all this (also cf. Wilden, 1978). But did she? How could it be that the song is 'A Sitting On A Gate'? Is this not a kind of category mistake, a subtle act of taking the words for the thing? Can we now hum a few bars from, 'A Sitting On A Gate'? That is, do we now know the song and not the title of the song? And, more critically, what does the White Knight mean by "the tune"? Now, I am not interested in what the name of the tune is called, nor in what the tune is called, nor even in the name of the tune. I want to know if the White Knight is simply calling his song "the tune" or if the song is the tune. I also want to know how I know (or why I seem to think) that the tune is the song. And, more practically and perhaps along with all, I want to know (i.e., to be able to "re-produce", even if only partly and in memory) the actual song.

Carroll's textual imbroglio forces our attention to the "premise intransitivity" which Bateson suggests characterizes naturally communicative rather than strictly logical frames. As Bateson suggests, "It is conventional to argue that if A is greater than B, and B is greater than C, then A is greater than C. But psychological processes do not obey the transivity of asymmetrical relations. Proposition P may be a premise for Q; Q may be a premise for R, and R may be a premise for P" (Bateson, 1955 [1972]: 185). The critical implication is that we in our everyday talk habitually fail to notice how quickly we hop around and between various abstract words and, in doing so, leave such intransitivity strangely forgotten. Bateson's diagram for discussion referred to as "onionskin" also well signifies the premise intransitivity which necessarily characterizes syntactical digitalization (see Figure 1). His diagram signifies not that language "is making it all up", but simply that, without precipitating a paradox of abstraction, we cannot say what is or what is not in analog communication. And, this is why, as Bateson suggests, "It is excessively difficult to talk about the structuring of an onionskin system, because our language is always within one or another system of that kind, and we ourselves are faced with the problem of being inside that whole which we are trying to talk about" (1956: 155). Thus, when Bateson suggests that he has a "desire to know about those processes whereby organisms pull themselves up by their bootstraps" (1956: 216), he addresses communication as an evolution

of digital communication from within on-going analog communication, and moreover, he turns our attention to how digital communication syntactically imbricates intransitive yet asymmetrical distinctions and thus in-builds layers of abstraction.

Finally, the difficulties discussed throughout this paper seem to emerge whenever someone uses the logic of set-theoretic classification (i.e., "members" and "sets") to understand the relations "between" words and things. George Lakoff and Mark Johnson (1980) persuasively argue that definitions are better grasped through "prototypes" and "family resemblances" than by "set-theoretic" orientations. They therefore call into question the entire problematic that Bateson encumbers in moving out from The Theory of Logic Types. Granting this, Bateson's work stands in agreement with Lakoff and Johnson's stress upon the "interactional nature of properties", and moreover, Bateson has the advantage of demonstrating how shifting logical types are employed nonetheless and how syntactical redundancies can appear under the guise of empirical assertions about relations between verbal and "nonverbal" realms. All of the above is made evident, though only symptomatically, where Burke suggests that "we gravitate spontaneously toward naive verbal realism" (1961: 18). We forgetfully slip back into the belief that there is first a world of things and then, also, as a convenient happenstance, a set of words for labeling or referring to them. Notice how problematic such thinking becomes if we explicitly deal with the fact that all sets can be nested in multiple other sets. For example, the set of soup spoons can be a member of the set of silverware. Also, the set of silverware can be a member of the set of utensils which, in its turn, can be a member of the set of things. But now, if I were to suggest that things (and in fact utensils, silverware as well as spoons) are all members of the set of words, a critic may accuse me of making a category mistake (that of confusing the name with the thing named). This critic might suggest that my mistake is easy to point out: "the words 'spoons', 'silverware', 'utensil', and even 'things' can be said to be members of the set of words, but, that to which the words refer are not." "The things themselves", the critic would argue, "are not members of the set of words". Now, I completely agree that I am making a logical-typing error, and, I happily grant that this is an obvious one. Nevertheless, for those who would speak of such things, there appears to be little escape from such mistakes! For surely "things" is a word and the neglect of this fact enables much more subtle category mistakes. Within the critic's critique for example, notice how quickly we made sense of the higher abstractions (e.g., "that" and "things") as if they were not simply more words. Such a move inevitably traffics in the *same* paradoxes of abstraction. Not only do paradoxes of abstraction occur because "things" is a word of a different logical type than that to which it putatively refers, but additionally—and more subtly—because the word "words" is a metalinguistic term. Each word ("spoon".

"silverware," "utensil," "things") never referred to an original real one "thing" per se (sic!). Rather, each is a moment within the constitutive underbelly of propositional language and denotative utterances. If words were but one natural set of things that exists independent of and in addition to other natural sets of things, how could something, say a pen in my hand, also be a utensil as well as an entity, an object, and a thing? Where is that which determines the lines of inclusion and exclusion, of taking-apart and bringing-together, of division and merger? That which makes something a thing, but even more specifically, "a utensil but not a spoon," cannot be found within the thing per se.⁷

4. We Speak Nonetheless

Gregory Bateson concludes his essay, "A Theory of Play and Fantasy," with the following words:

Our central thesis may be summed up as a statement of the necessity of the paradoxes of abstraction. It is not merely bad natural history to suggest that people might or should obey the Theory of Logical Types in their communications; their failure to do this is not due to mere carelessness or ignorance. Rather, we believe that the paradoxes of abstraction must make their appearance in all communication more complex than that of mood-signals, and that without these paradoxes the evolution of communication would be at an end. (Bateson, 1972: 193)

Our ability to signify, to speak *about* something, is funded by and always rests imbedded within the world of analog communication. The paradoxical sense that "things precede language" is, at root, a tacit recognition that digitalization is inseparable from the analogic world. The world of analog communication is without classes; it is the total action within the absolute non-repeatable once-occurrent context (i.e., the meaningful goal-seeking-within-environment). Thus, when we say that things could not have preceded language, this does not attempt to reduce world and all therein to language.⁸ Instead, it advances Bateson's ideas of play, framing, and analog and digital communication to show how things, *qua* things, become possible only given linguistic signification.

7. Bateson writes, "Difference, you see, is just sufficiently away from the grossly materialistic and quantitative world so that mind, dealing in difference, will always be intangible, will always deal in intangibles" (1977: 240). And also: "Information" and "form" resemble contrast, frequency, symmetry, correspondence, congruence, conformity, and the like in being of zero dimensions and, therefore, are not to be located" (1967 [1972]: 408).

8. Wilden (1972) nicely counters the reductive tendencies which can come from too much attention to propositional aspects of language. He states: "This is not to say that all knowledge is digital, although many philosophers seem to think so, or at least to behave as if it were. Most knowledge is analog. . . . Most of our knowledge or understanding (in the usual sense) is communicated analogically, by imitation" (166).

A most profound and ubiquitous "category mistake" is the sheer ability to speak *about* aspects of the world. We are able to make sense of the claim that "things preceded language" because we are comfortable with paradox. The propositional aspects of human speech, as Bateson observed, have the character of an onion skin. This is a useful guiding metaphor for the digital aspects of language. It is not that there is nothing outside of what we talk about; it is that we cannot, without paradox, say what that something is. Better said, denotative speech, because of our comfort with paradox, allows us to take seriously our attempts to say what lies outside of speech. Obviously, much lies before our utterances and much comes after them, and certainly, much is permanently other than them. Nevertheless, we never can say what all or any of that "much" is without making a kind of category mistake.

It would be foolish to deny that there are the many different things in the world, but we should not maintain that they—*those things that we could or do talk about*—can be grasped independently of how we grasp them. It is not that there are no things in the world; rather, there is denotative speech. Things appear as things because we can speak *about* them. Therefore, if we say that there are no things without language, this is not an attempt to deny the vast and all-too-present un-speakable. Not at all. It is an invitation for a direct confrontation with the paradoxical character of denotative utterances.

References

- ANTON, Corey.
 1998. "About Talk: The Category of Talk-Reflexive Words," *Semiotica*, 121, 193–212.
 2001. *Selfhood and Authenticity* (Albany: State University of New York Press).
 2002. "Discourse as Care: A Phenomenological Consideration of Spatiality and Temporality." *Human Studies*, 25, 185–205.
- BAKHTIN, Mikhail. M.
 1993. *Toward a Philosophy of the Act*, English trans. V. Liapunov. (Austin: University of Texas Press).
- BATESON, Gregory.
 1955. "A Theory of Play and Fantasy: A Report on the Theoretical Aspects of the Project for Study of the Role of Paradoxes of Abstraction in Communication." *Approaches to the Study of Human Personality* (American Psychiatric Association. Psychiatric Research Reports, no 2). Reprinted as "A Theory of Play and Fantasy," in *Steps to an Ecology of Mind* (New York: Ballantine Books, 1972).
 1956. "The Message, 'This is Play'," in *Group Processes* ed. B. Schaffner. (New York: Josiah Macy, Jr. Foundation).

1966. "Problems in Cetacean and Other Mammalian Communication" in *Whales, Dolphins, and Porpoises* ed. K. S. Norris. (Berkeley: University of California Press.) Reprinted in *Steps to an Ecology of Mind* (New York: Ballantine Books, 1972).
1967. "Cybernetic Explanation", *American Behavioral Scientist*, vol. 10, no. 8, April. Reprinted in *Steps to an Ecology of Mind*. (New York: Ballantine Books, 1972).
- 1968a. "Information and Codification: A Philosophical Approach", In Gregory Bateson and Jurgen Ruesch *Communication: The Social Matrix of Psychiatry* (New York: W. W. Norton & Company).
- 1968b. "Redundancy and Coding", in *Animal Communication: Techniques of Study and Results of Research* ed. T. A. Sebeok. (Bloomington, Ind.: Indiana University Press). Reprinted in *Steps to an Ecology of Mind* (New York: Ballantine Books, 1972).
1977. "Afterword", In *About Bateson* ed., J. Brockman. (New York: E. P. Dutton).
1979. *Mind and Nature: A Necessary Unity* (New York: Bantam Books).
- BATESON, Gregory, and Don. D. JACKSON.
1964. "Some Varieties of Pathogenic Organization", in *Disorders of Communication* ed. D. M. Rioch and E. A. Weinstein. (Baltimore: Williams and Wilkins Co.) Reprinted (without the discussion) in *Communication Family and Marriage* ed. D. D. Jackson (Palo Alto, Calif.: Science and Behavior Books, 1968).
- BURKE, Kenneth.
1961. *The Rhetoric of Religion: Studies in Logology* (Berkeley: University of California Press).
1966. *Language as Symbolic Action: Essays on Life, Literature and Method* (Berkeley: University of California Press).
- DEWEY, John.
1925. *Experience and Nature: The Later Works, 1925-1953, Volume I: 1925* (Carbondale: Southern Illinois University Press, 1988).
- GOFFMAN, Erving.
1967. *Strategic Interaction: An Analysis of Doubts in Play* (Philadelphia: University of Pennsylvania Press).
1974. *Frame Analysis: An Essay on the Organization of Experience* (Boston, Mass.: Northeastern University Press).
- HOLENSTEIN, Elmar.
1976. *Roman Jakobson's Approach to Language: Phenomenological Structuralism*, English trans. C. Schelbert and T. Schelbert. (Bloomington: Indiana University Press).
- JONAS, Hans.
1966. "Image-making and the Freedom of Man", in *The Phenomenon of Life* (Chicago, Ill.: The University of Chicago Press).
- KORZYBSKI, Alfred.
1933. *Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics* (Lakeville, Conn.: The International Non-Aristotelian Library Publishing Company).
1949. "Fate and Freedom". In *The Language of Wisdom and Folly: Background Readings in Semantics* ed. I. Lee. (New York: Harper and Row Publishers).
- LAKOFF, George., and Mark JOHNSON.
1980. *Metaphors We Live By* (Chicago, Ill.: The University of Chicago Press).
- LANGER, Suzanne K.
1942. *Philosophy in a New Key: A Study in the Symbolism of Reason, Rite and Art* (New York: Mentor Books).
- LANIGAN, Richard.
1992. *The Human Science of Communicology: A Phenomenology of Discourse in Foucault and Merleau-Ponty* (Pittsburgh, Pa.: Duquesne University Press).
- MERLEAU-PONTY, Maurice.
1969. *La Prose du monde* (Editions Gallimard). English trans. by J. O'Neill as *The Prose of the World* (Evanston, Ill.: Northwestern University Press, 1973).
- MORAN, John.
1979. "Metacommunication, Logical Types, and Paradox: A Critical Examination and Reformulation". (Unpublished Dissertation, Department of Speech, Temple University).
- RAWLINS, William K.
1987. "Gregory Bateson and the Composition of Human Communication", *Research on Language and Social Interaction*, 20, 53-77.
- SCHEFFLER, Israel.
1967. *Science and Subjectivity* (New York: The Bobbs-Merrill Company).
- STEWART, John R.
1995. *Language as Articulate Contact: Toward a Post-Semiotic Philosophy of Communication* (New York: Press).
1996. *Beyond the Symbol Model: Reflections on the Representational Nature of Language* (New York: State University of New York Press).
- THAYER, Lee.
1997. *Pieces: Toward a Revisioning of Communication/Life* (Norwood, N.J.: Ablex Press).

WATZLAWICK, Paul, Janet. H. BEAVIN, and Don. D. JACKSON.
1967. *Pragmatics of Human Communication* (New York: W. W. Norton & Company).

WILDEN, Anthony.

1968. "Lacan and the Discourse of the Other", In *Speech and Language in Psychoanalysis* (Baltimore, Md.: The John Hopkins University Press).
1972. *System and Structure: Essays in Communication and Exchange* (London: Tavistock Publications).
1987. *The Rules Are No Game* (New York: Routledge & Kegan Paul).

Gregory Bateson's 'New Science' in the Context of Communicology

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Abstract: Jakobson's well-known model of communication includes implicit time and space message-to-code and contact-to-context relations. The symbolic displacement of humans from nature and the possible discovery of *human nature* occur in the embodied reversibility of these relations. Bateson's view of the *meta* function in communication supports this postmodern turn, as does Peirce's phenomenological conception of *semiosis*. In this abductive context, Bateson's ideas are used to augment Peirce specifically on *embodiment* in semiosis. Communicology is nominated the "new science" and semiotic phenomenology the "new paradigm" envisioned by Bateson.

I. Communicology

Communicology is the science of embodied discourse. With the advent of this new discipline, communication inquiry is no longer limited to the narrowly conceived arts of message production, transmission, and exchange. We turn our attention to matters of depth, the philosophical and theoretical ground of semiotic phenomenological experience, re-establishing the priority of human science in social theory.

A science of discourse is capable of revealing its intelligibility (Urban, 1929), which is to say its constraints on communication. It may also recursively affect the practical arts of discourse. The many arts of message transmission, from self-talk to bodily comportment in conversation, to organizational interactions, public address, and trans-cultural international exchanges by means of computers, are all codifications of reality. Human scientists study the codification of messages in society as well as advance theories that are themselves codes. But, in no case