

## Appendix A

### Contrast with Evans on Information Based Thoughts

The theory I have presented of substance concepts and the thoughts governed by them is similar in a number of respects to Evans' theory of "information based thoughts" in The Varieties of Reference (1982). Evans' information based thoughts were thoughts containing information derived from perception or testimony, where the thinker also had "an adequate concept" of the information's source. Evans is not altogether clear, however, on what "information" is supposed to be. Initially (p.122<sup>n</sup>) he refers us to J.J. Gibson (1968), but his subsequent discussion, which makes reference to informational states that "fail to fit" their own objects, "decaying" information (128<sup>n</sup>), "garbled" information (129), informational states that are "of nothing" (128) and so forth, is glaringly inconsistent with Gibson's conception of information.

The clearest images Evans presents us are information contained, on the one hand, in a photograph, and on the other, it seems, in a percept (not, as Gibson would have had it, in energy impinging on sensory surfaces). But "[a]n informational state may be of nothing: this will be the case if there was no object which served as input to the information system when the information was produced" (128). On the other hand, "two informational states embody the same information provided they result from the same informational event...even if they do not have the same content: the one may represent the same information as the other, but garbled in various ways" (128-9). Thus it seems that an "informational state" need not contain any information at all, and that when it does "embody" or "represent" information this need not coincide with its "content". What then makes it into an "informational state"? What determines it's "content"? And what determines what the informational state "represents"?

Of a photograph, Evans says,

A certain mechanism produces things which have a certain informational content.....The mechanism is a mechanism of information storage, because the properties that figure in the content of its output are (to a degree determined by the accuracy of the mechanism) the properties possessed by the objects which are the input to it. And we can say that the product of such a mechanism is of the objects that were the input to the mechanism when the product was produced. Correspondingly, the output is of those objects with which we have to compare it to judge the accuracy of the mechanism at the time the output was produced...

Now this structure can be discerned whenever we have a system capable of reliably producing states with a content which includes a certain predicative component, or not, according to the state of some object. (The structure is of course discernable even if, on some particular occasion, the system malfunctions.) (Evans 1982, p. 124-5)

From this I take it that Evans' "information" results from operation of a system that "reliably" produces certain output properties as a function of certain input properties even though it may sometimes be inaccurate or malfunction, and that its "content" is

determined by reference to the properties that the input either has, or would have had if that same output had been produced when the mechanism was functioning properly. The information is about the object or objects directly causing the input, granted these objects are of the same sort that produce input to the device when functioning properly. Otherwise we have an "informational state" that is not "about" anything hence carries no "information." The properties of the inputting object(s) about which the informational state embodies information are those properties of the object that the mechanism would have been guided by in producing its output had it been functioning properly. Evans calls these properties, granted there was some input object of the right sort, "the information represented". Thus it happens that an informational state that misrepresents "represents the same information" as one that represents correctly.

Clearly we must be very careful here not to equivocate on the notion "what is represented." Perhaps we usually think of "what is represented" as the intentional content of a representation. But for Evans, the intentional content is called "content" and "what is represented" is what was supposed to have been the intentional content, that is, what would have been the intentional content had the mechanism operated properly. "What is represented" is whatever properties are at the source that produces the informational state, granted the source is of the right general kind.

This notion of information is blatantly non-Gibsonian, and (more familiar to philosophers, perhaps) blatantly non-Dretskean (Dretske 1980). It is not the kind of "information" that was a "common commodity" in the world long before organisms came along to use it. Rather, this notion loudly demands prior analysis of the normative notions, "accuracy," "malfunction," and even, I suggest, "reliable" notions that can find no footing prior to the interests of organisms.

Leave aside, for the moment, questions about what kind of normativity might be involved with this kind of "information." I have proposed an interpretation of Evans' analysis of the intentional content corresponding to the "predicative component" of an information bearing state. This content is given by reference to what the properties at the source causing the informational state would have to be if the informational system were giving this output when functioning properly. It is not given by the actual properties of the input. Similarly, Evans is very insistent that the fact that a certain object causes the input to the informational system does not constitute its being an intentional object (subject) of the information bearing output. To adopt that position would be to adopt the "photograph" model of what a thought is of, against which Evans argues at length. Rather, it seems, for the information bearing state to have an intentional subject C for it to be a thought of something C a "fundamental idea" of its object must be supplied/applied. I have advocated abandonment of the theory of fundamental ideas, however ('13.4). And we can, I believe, easily reconstruct an account of the intentional object (subject) of thought along Evans' lines without reference to fundamental ideas.

Evans remarks on "what is perhaps the central feature of our system of gathering information from individuals: namely the fact that we group pieces of information together, as being from the same object C that we collect information into bundles" (p.

126). This collecting together, Evans calls "*re-identification*" of the subject of information. Evans' thesis is that only when thinkers "have the capacity" to *re-identify* the objects of their thought, are they actually thinking of anything. Capacities, for him, seem to be something like reliable dispositions. (Actually, it is very unclear what they are, so we must guess.) Thus, it appears, just as one thinks of a property when one's cognitive systems are "capable of reliably producing states with a content which includes a certain predicative component, or not, according to the state of some object" (p. 125), similarly, one thinks of an object only when one's cognitive systems are capable of reliably producing informational states about that object that get bundled together, the object thus being *re-identified*.

To get from Evans' position, thus interpreted, to the one I advocate, a number of adjustments are required. First, we must replace Evans' idea of what the system regularly does, with what it has the ability to do, that is, in part, what it is the, or a, proper function of the system to do, given its evolutionary history and its learning history (' 4.6). That is the way I would unpack the normativity implicit in Evans' references to "accuracy" and "malfunction."

Second, we must replace Evans' notion "*re-identify*" with the notion "*co-identify*" (' 10.2) or, when the intentional significance of this act is our focus, with the notion "*reidentify*." Reidentifying something is not just thinking of it again, nor it is making an identity judgment. It is marking an informational state with a sameness marker, in preparation for its use as a middle term in inference, or an analogue of inference (' 10.2).

Third, we must take the notion "information" apart, carefully separating natural information from intentional information, that is, from the content of an intentional representation such as an inner representation. The form of natural information that is important here is the general form that I have called "natural informationC," as contrasted with Gibson's and Dretske's notions of natural information (see Appendix B). Intentional information is what is represented by an intentional representation, when the representation is true, and true in accord a normal explanation for proper functioning of the representation producing devices that formed it. Now we can put the matter this way. One thinks of an object (represents it conceptually) only when one's cognitive systems have the ability (Chapter 4) to translate natural informationC about the object into intentional information about it such that the mental representations carrying this information are correctly marked with sameness markers as suitable for coidentification (' 10.2).