

## How Many Angels...?

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The trouble with trying to calculate how many angels can dance on the head of the proverbial pin, or how many demons Father Michaelis dislodged from the body of a hysteric<sup>1</sup>, is that angels and demons are theoretically so ill defined that we do not know how to begin to count, or what to take as a reasonable estimate. In the absence of theory to provide principles for individuating, one man's considered judgment is another man's jest. Until quite recently, atoms and blood types were in much the same plight, and what renders them countable or estimable now is the respective theories that tell us what atoms are, and what makes for differences in blood. Until Cantor provided a theory of infinite sets, the business of counting them, or ranking them with respect to size, was tantamount to clawing at the air. The question of how much information is transmitted in a given channel is now, thanks to information theory, one that admits of an answer, but before Shannon and Weaver it was strictly a guess-and-by-golly affair. Counting angels and vital spirits never came to much because angel hypotheses and vitalistic biology lost out in the competition for theoretical acceptance. Now, I suggest, "being conscious" is theoretically so ill defined at this stage of mind-brain science, that counting centers of consciousness is a bit like counting angels. Criteria deemed pivotal for the counting debate, such as accessibility of information and presurgical manifestation, seem to me to be insufficiently motivated by accompanying theory to provide a basis for productive argument.

Unquestionably, the results of split-brain research are of great value in providing some insight into the functioning of the brain. Nevertheless, if we are equipped with nothing more substantial than a few pretheoretical intuitions (and even these, it appears, conflict), then the attempt to *interpret* these results either as inconsistent with a one-mind-per-brain hypothesis, or as not, seems fun but inconsequential. The paucity of theory concerning consciousness, let alone what a *center* of consciousness is, makes it difficult indeed to know what the debate is really about. Accordingly, while I do not find Puccetti's hypothesis especially scandalous - indeed I applaud his

willingness to allow that there may be more going on in awareness than meets the mind's eye - I am not persuaded either, for I do not know what it amounts to. Consider an analogous debate in the nineteenth century, among those who thought there was just one vital spirit pervading all living organisms, those who thought there should be one for plants and one for animals, and those who thought each organism, or each organism part, had its very own vital spirit. For all its sound and fury, the debate did not signify, leaving biology neither worse nor wiser. Lacking an adequate framework within which to engage the question empirically, the debate was merely an unavailing clash of a priori hunches and proprietary interpretations of scanty empirical data.

It is tempting, perhaps, to think that the case of being conscious is special, and to suppose that principles of individuation for centers of consciousness can be available in advance of significant theory about states of consciousness. It might seem that we already know a good deal about being conscious by direct, nontheoretical acquaintance. The temptation should be resisted, for there is no reason to suppose that the brain evolved in such a way as to reveal much about how it works from the inside. Whether there is anything going on in the brain that corresponds to "unity of consciousness" or to "center of consciousness" (inchoate as these notions are) is an empirical question, and if our pretheoretical intuitions find themselves on the outs with the facts, then it is our intuitions that must stand to be schooled.

Perhaps what underlies the conviction that it is reasonable at this stage to entertain estimates on the number of centers of consciousness in a normal human is the idea that whatever else neuroscience might tell us about conscious states, at least it is obvious that there is one single type of state or process involved, and so once we know the behavioral manifestations of consciousness, we can at least argue reasonably about whether there exist one or two or five hundred centers. Yet what is obvious in the nascent stages of theory may well be quaintly preposterous from the hindsight of developed theory, and it is surely possible that this conception of consciousness as one single type of phenomenon will be found to be so. The brain may well be fitted out with a synod of self monitoring mechanisms that operate variously and at varying degrees of efficiency at different times, with none functioning as the "center of consciousness." And all this, unbeknownst to introspection. Different mechanisms may ascend to physiological prominence under different circumstances - e.g., when the organism is vigilant in foiling a predator, as contrasted to resting contentedly after a meal, or when it is fatigued or sexually aroused, or when its attention is divided between reading a bedtime story and fantasizing its fortune, or when it is dreaming or in deep sleep, or hysterical, high, or hypnotized (Hilgard 1977). Distinct neuronal structures may figure in distinct types of awareness, and, indeed, some such structures may be in the left hemisphere and some in the right. Information may be differentially available to different processes, and control may be distributed and shifting rather than the unique and abiding province of one particular mechanism. Even if two mechanisms are operating in the right and left hemispheres, the idea that one's "inner life would thus be a tandem affair is no more plausible than inferring that the retina cannot have a blind spot

because if it did our visual field would contain a black hole in the center. The reason we do not perceive a black hole in our visual field is that the brain has no means for detecting the edges of such a hole, and neighboring areas “fill in the gaps.” If, as seems likely, there are a variety of attentional processes, their ascending and receding may go unmarked by introspection because the brain has no means for detecting the onset and offset of such processes.

What all this suggests to me is not so much that “persons” or “centers of consciousness” turn out to be more *numerous* than we thought. Rather, it suggests that the notions of “person” and “center of consciousness” do not have the objective empirical integrity we thought they did.

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<sup>1</sup> The official count was 6,500. See Andrew Dickson White 1896, vol. 2, p. 143.