

## What Is This Autooetic Consciousness?

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As Tulving argues, concepts shape psychologists' thinking and determine how the end products of research are recorded. Currently in prominent use is not only Tulving's concept of episodic memory but also his allied concept of autooetic consciousness. And because, too, of the growing attention by psychologists to aspects of their subjects' consciousness streams, I explore Tulving's concept of autooetic consciousness: to help improve the exercise of consciousness concepts in psychology generally. Two special topics among others are discussed: (a) the "flavor" Tulving claims characterizes recollective experience and corresponds to the warmth and intimacy James proposes consciousness states possess, and (b) whether the autooetic-consciousness concept applies to a brain-damaged man said to lack, probably, any capability for autooetic awareness.

["What?" questions] are not idle questions. Answers to them, or ideas about possible answers to them, shape the thinking of memory experimenters and theorists alike, and determine how the end products of research are recorded. (Tulving, 2000, p. 33)

In joining me here to inquire into the recent scientific concept "autooetic consciousness," readers would do well to keep in the back of their mind the not unfamiliar distinction between a concept and its referents. The title of this article is intended to ask simultaneously regarding both (a) the experiences, the capabilities, or the brain/mind subsystem that autooetic consciousness may actually be and (b) the role played by the concept of autooetic consciousness in the theory in which it is exercised. Attend in this latter connection to Crowder's (1986) exposition of how Tulving (1983) was deploying his newly introduced notion of autooetic consciousness — albeit not yet under that name — in order to refocus the scientific conceptualization of episodic memory. The proposed alteration in research and technical

thinking about the topic would be no less than “radical.” Crowder (1986) accurately reported that the “subjective experience of having a past event from one’s life projected into the present is [for Tulving] not just an additional criterion for defining episodic memory, it is the controlling definition of episodic memory” (p. 566). A great deal was evidently at stake depending on which concept of episodic memory their colleagues and students would come to adopt. Tulving (2001) now speaks of Crowder’s having thus “precisely located the foreign intruder in the body psychologic” or “the threat to the prevailing order” (p. 19), and he explains in conservative Kuhnian terms what was taking place at the time. Underway was a struggle between the ongoing normal science that was then dominant in the field of memory and a determined heretic’s powerful conviction that a paradigmatic science of episodic memory had in fact not yet even begun, and would not get started as long as the laboratory research psychologists’ focus stayed on their subjects’ behavior and away from the conscious experiences that are constitutive of the essence of the remembering owed directly to the operations of episodic memory.

Psychologists who are largely occupied as such with the acquisition of scientific knowledge necessarily have a deep interest not only in substantive and relational and occurrent parts of the real world but also in how they can best conceive of and think about those parts of the world that are of interest to them. Their concern in the present instance therefore lies to a significant extent in what they would be committing themselves to if they were to describe a human subject under their scrutiny as possessing or not possessing the auto-noetic kind of consciousness on a particular trial or chronically. Among much else which psychologists surely will want to know regarding “auto-noetic consciousness” are the implications of the following authoritative specification of the concept’s referent: “a human brain/mind capability that allows people to become consciously aware of their personal past and their personal future.” Psychologists’ professional curiosity will start to manifest itself with an insistence on adequate answers to what each one of the important words mean that are contained in the latter quoted phrase

### **Implications of a Specification of Auto-noetic Consciousness**

Tulving (2001, p. 29) is the source of the above specification of “auto-noetic consciousness.” Which possibly may rest on a distinction between (a) something resembling Freud’s (1895/1966; Natsoulas, 2000) posit of a real functioning anatomical consciousness subsystem of the apparatus that he described as “physiologico-psychical” and (b) all of what James (1890/1950) proposed as brought into being by neurophysiological processes in the way of the firsthand familiar states or pulses of consciousness that make up one’s

mental life. There is significant similarity between what James (1890/1950) held, as I have just partly expressed it, and Tulving's (2000) statement concerning the nature of the phenomenal experiences usually called "subjective."

Let me express, albeit briefly, Tulving's basic view of experience; much of the discussion to follow of auto-noetic consciousness has reference to experiences as Tulving understands them to be: "Purely mental experiences" are existences in the real world notwithstanding their being for Tulving "non-physical in the standard sense" and their differing from physical objects and events in basic ways: "They are part of the real world because they exist, as products of neural activity, in the four-dimensional space-time continuum" (Tulving, 2000, p. 35). He adds to this without comment that it is immaterial for scientific purposes whether we infer or directly apprehend the existence of experiences.

The latter sounds as though Tulving holds that we must introduce non-physical experiences into psychological science even if we never have firsthand awareness of any of our experiences. Presumably, observable effects of theirs necessitate their postulation. James (1890/1950) held, too, that non-physical or purely mental experiences have some effects on processing in the brain. That is, the purely mental and the purely physical causally interact.<sup>1</sup> And it is strange to realize that James was not averse to the view that we are not capable of firsthand awareness of any of our experiences. He allowed that they may all actually be mere posits for explanatory purposes (James, 1890/1950, pp. 304–305; 1892/1984, p. 400).<sup>2</sup> Yet James did proceed famously on the assumption that the fundamental durational components of one's stream of consciousness are given directly to one's inner awareness and that those mental states are for the psychologist the most concrete things in the world.

The distinction between a Freudian anatomical consciousness system and a Jamesian stream of consciousness is between a proposal in the tentative scientific spirit and something that is held to be radically empirical. An implication of the use of such a distinction for the interpretation of Tulving's

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<sup>1</sup>See Natsoulas (1999–2000) for more on James's mind/brain dualism: in a context that contrasts it with Langer's (1967) view. Cf. Popper and Eccles's (1977) dualist interactionism and Searle's (1992) property dualism. The latter hypothesis holds that some brain states and processes (the conscious ones) somehow manage to possess first-person mental properties. These introspectible properties cannot possibly be objects of third-person observation: not even with instruments. For criticism of the latter notion see Natsoulas (1995). Also I have discussed the psychophysiological parallelism of the great guru of methodological behaviorism (Bergmann, 1956; Natsoulas, 1984). My own mind/brain view (Natsoulas, 1981) resembles instead Sperry's (1980) physical monist interactionism (a term he approved of.)

<sup>2</sup>Later in the present article I have occasion to return to this view of James's.

“human brain/mind capability that allows people to become consciously aware of their personal past and their personal future” is that these experiential outputs are to be understood as products of a brain system that Tulving calls “autonoetic consciousness.” A person’s autonoetic consciousness would thus not be a feature of nor identified with any of James’s basic durational constituents that one at a time make up the person’s stream of consciousness. The person would not be suitably described as “autonoetically conscious” but would possess something that enables the occurrence of certain kinds of conscious awareness. The becoming inoperative somehow of the brain/mind capability that is autonoetic consciousness might not cause the person’s stream of consciousness to stop flowing but this stream could no longer include among the succession of its states any states that could rightly be described as being the person’s conscious awareness of his or her personal past or personal future in the senses at work in the above quoted specification.

A different interpretation of “mind/brain capability . . .” would not construe this specification as implicitly distinguishing between autonoetic consciousness and what goes on in the stream of consciousness. Implied instead would be the useful availability of more than one way to consider and describe the identical stream or temporal sections of it. James (1890/1950) discussed what he called “the spiritual self” among much else in his book-length chapter titled “The Consciousness of Self.” The spiritual self could be taken either concretely or abstractly. Which means that the concept can be used to refer to something in particular that is concrete or to something else that is an abstraction from the concrete. The spiritual self concretely taken amounts to the entirety of the person’s stream of consciousness or the present temporal section of the stream. Or the stream can be abstractly taken in terms of various faculties or dispositions that the states constituting the stream exhibit. James (1890/1950) writes that streams of consciousness so present themselves to us that “a plurality of such faculties are always to be simultaneously found [therein]” (p. 296).

A specific way James mentions in which the stream can be abstractly taken is singling states out that are evidently performing the same one or more functions and considering them together as though they are a kind of abstract unit. A notable example of such an abstraction, which James provides and discusses at some length, is “the self of all the other selves.” But there is no reason to go afield and discuss this self here except to emphasize: James’s conception of the self of all other selves has this self made up only of a certain specific kind of state of consciousness that is widely distributed in the person’s consciousness stream. Each of this self’s abstract constituents is a concrete state of consciousness but they do not constitute together a natural

whole as do the states of the total stream or the successive states that make up a temporal section of the stream.

Autoonoetic consciousness too may be an abstraction consisting of every one of one's states of consciousness that intrinsically involves a certain kind of conscious awareness. Each one of these states would be a concrete instance of autoonoetic consciousness but would not be part of a whole so called. The kind of conscious awareness that an instance of autoonoetic consciousness is would need of course to be specified here and wherever the topic is discussed. A major focus of such a discussion would have to be those states of the stream of consciousness that do instantiate the requisite kind of awareness and what it means for them so to instantiate.

Wheeler, Stuss, and Tulving (1997; Tulving, 1993b) so conceive of the difference between "consciousness" and "awareness" that (a) autoonoetic consciousness is a certain "capacity that an individual possesses to have certain kinds of mental representations and subjective experiences" (p. 335) whereas (b) an autoonoetic awareness is simply "a particular manifestation or expression of this . . . capacity" that always has an object: is of something in every instance of its occurrence. It is also stated that autoonoetic consciousness is a necessary condition for autoonoetic awareness to occur. Which means that autoonoetic consciousness is distinct from the autoonoetic awarenesses it makes possible. An analogy is drawn between one's sense of sight and the many instances of seeing something that one's possession of that sense allows. Thus, one also becomes aware of a certain specified kind of something if one has the capacity called "autoonoetic consciousness" and certain other conditions are such as to yield manifestations of that capacity in the form of one or more instances of autoonoetic awareness.

### **A Proposed Distinguishing Feature of the Recollective Experiences**

Tulving (2001, p. 19) mentions near the start of the chapter his having proposed almost two decades previously an important distinguishing characteristic of the recollective experiences that he stated take place consequent upon the transmission of information from the episodic-memory system to a distinct system responsible for conscious awareness. He had described these present experiences of recollection as distinguished by their having a unique "flavor." Tulving is surely referring to how such experiences seem firsthand to the person whose they are. Any experience that firsthand seems somehow is, of course, a conscious occurrence. This means the recollective experiences are objects of inner awareness in Brentano's (1911/1973) sense. They do not occur unbeknownst to the person to whom they belong, and he or she apprehends them from the inside when they occur. Such inner awarenesses are

immediate: not based on inference from something else of which the person has awareness.

But what is the “unique flavor” of the recollective experiences? The explicatory sentences I have so far provided could be rightly repeated with reference to every non-recollective conscious experience as well. The property of being conscious is not unique to the recollective experiences although all of them are conscious according to Tulving. He may well be giving an indication of how he would spell out their “flavor” when he adds that any such experience

represents a feeling of “warmth and intimacy,” which William James wrote about in his *Principles of Psychology* (James, 1890/[1950]), a feeling that is missing when one thinks about the knowledge in semantic memory. (Tulving, 2001, p. 19)

With his reference to another kind of memory, Tulving has a different kind of experience in mind. An example would be my having a veridical thought to the effect that the place of my birth was New York City. This thought might well take place consciously but no occurrence of such a thought could be a recollective experience. Its informational source is perforce one’s semantic-memory system. A recollective experience of my father’s first apprising me as to my birthplace could well serve for the purpose of drawing another similar contrast with my thought that I was born in New York City. Tulving would say that my conscious thought to this effect would not “represent a feeling of ‘warmth and intimacy’” as all recollective experiences do. Could the distinguishing “flavor” of a recollective experience amount to its merely “representing” the feeling of warmth and intimacy that belongs to the recollected experience? I shall return to this question.

### *James’s “Warmth and Intimacy”*

Tulving (1983) had earlier quoted a passage from James that he deemed highly pertinent to distinguishing the recollective experiences from experiences that occur but are not consequences of information transmission from the episodic-memory system. James (1890/1950) had written in part,

Memory requires more than mere dating of a fact in the past. It must be dated in my past. In other words, I must think that I directly experienced its occurrence. It must have that “warmth and intimacy” which were so often spoken of in the chapter on the Self, as characterizing all experiences “appropriated” by the thinker, as his own. (p. 650)

James is saying a recollected experience must be apprehended to be one of one’s own previously lived experiences. The experience must again be found as it was when it occurred: that is, to have “warmth and intimacy.” It seemed

to possess this special quality then, and it must seem now to have possessed it in order to be appropriated again.

It is in his discussion of personal identity that James puts to the most use the felt warmth and intimacy of states of consciousness. What is it for a state to possess this "warmth and intimacy" to which Tulving also importantly adverts? In addressing this question I rely mainly on *state of consciousness*, *consciousness state*, or *state* to refer to James's basic durational components of a stream of consciousness, while James uses mainly *thought* and sometimes *feeling*. He explains early in the book that he will use these terms interchangeably for the identical items.

It is not unusual for a person to have awareness of a present consciousness state belonging to another person's stream. This may result from being told about the state or through inferences based on observations of the other person's verbal or other behavior. Awareness of a "foreign" state of consciousness is said by James (1890/1950, pp. 330–331) to be a mere "conceiving" of the state. This awareness is completely cold. The foreign state is not found to possess any of the "warmth and intimacy" one finds to be instantiated by one's present states and by many of one's past states when recollecting them. Other people of course find their own states of consciousness warm and intimate and one's own states cold and foreign. For any other person's states too are what they are; they too are such as to feel warm and intimate firsthand.

The other person's states of consciousness too instantiate the property that makes them seem warm and intimate to their owner's inner awareness. I believe that James is in effect saying in his chapter on the consciousness of self that our inner awareness of consciousness states apprehends the states' qualitative content and this explains their evident warmth and intimacy. Their intrinsic qualitative character makes them seem warm and intimate when they are directly encountered. In a previous article (Natsoulas, 1998) I argued at some length that James (1890/1950) did consider every state of consciousness to be an intrinsically qualitative occurrence in addition to possessing cognitive content. Each state instantiates the property of intentionality but also it has "a sensitive body" (p. 478). He proposed that any state of consciousness is "a perishing segment of thoughts' stream, consubstantial with other facts of sensibility" (p. 474) however general or abstract in the particular case its objects may be. There is consequently somehow or other that a consciousness state of one's own feels to one's inner awareness of it. The state is a feeling in the general sense of its being qualitative and its qualitative dimension is apprehended directly: as distinct from its merely being known about and represented (James, 1890/1950, pp. 221–222). It is not the case that inner awareness operates merely to represent the fact that the respective consciousness state is a form of feeling or qualitative occurrence. Inner awareness feels its object, the consciousness state, and finds it warm

and intimate. One's states of consciousness can represent the same fact regarding another person's state or states but they cannot include a firsthand acquaintance with those states' concrete instantiations of this or of any other of their intrinsic properties (Natsoulas, 1998; see also Natsoulas, 2001).

How does that direct acquaintance take place according to James (1890/1950) wherein one apprehends a state of consciousness's qualitative character and thus finds it to possess its warmth and intimacy? The ongoing total brain process brings into existence one consciousness state after another. Feeling any of these states consists of the state's being an object of a near or immediate successor state in the same stream. To undergo the second is to have, of the first, inner awareness that is of a kind that consists of more than merely the actualization of conceptual capacities (cf. McDowell, 1998; Natsoulas, 2002). The conceptual capacities that are therein actualized may be actualized as well in being aware of other people's states of consciousness. Inner awareness also involves the more intimate firsthand access: being "acquainted-with" (James, 1890/1950, pp. 221–223) one's state of consciousness. How this is accomplished remains a problem. There are two separate states involved in inner awareness and the relation of knowing between the two states is another case of "the most mysterious thing in the world" (p. 216). About which James stated the following:

*The psychologist's attitude towards cognition . . . is a thoroughgoing dualism. It supposes two elements, mind knowing and thing known, and treats them as irreducible. Neither gets out of itself or into the other, neither in any way is the other, neither makes the other. They just stand face to face in a common world, and one simply knows or is known unto its counterpart. (p. 218)*

This is not the time to pursue the "how?" problem except to say what the Jamesian (1890/1950) perspective would likely lead one to focus on in seeking a solution. The perspective proposes that an ongoing physical process brings into existence closely in time both consciousness states that respectively are the inner awareness and the object of this inner awareness. The production of the two states in often quick succession could be taken to show that the physical process may still contain at the point of its bringing the second state into existence the information necessary to its having produced the first state. And the physical process may contain the information that will determine the content of the second state at the point when the physical process brought the first state into being. A large similarity of the brain process at the points where it gives life to the two states of consciousness could perhaps help bridge James's mysterious gap between knowing and known at least for the case of one's apprehending one's own states of consciousness.

I have suggested that James's warmth and intimacy of a state of consciousness is this state's qualitative character as felt by a second state of conscious-



ness that is the inner awareness of the first state. Warm and intimate is how states of consciousness appear to direct acquaintance. But James distinguishes two general kinds of warmth and intimacy of which only one is an instance of inner awareness. (a) One of these is perceptual: a matter of bodily feeling. Every one of our states of consciousness has for its objects among other things one's body as a whole and various occurrent and non-occurrent parts of one's body. It has them as its objects not merely in a cold and foreign manner but in a way that James describes as warm and intimate. (b) The qualitative character of each of our states of consciousness is partly that of bodily feeling and partly that of what might be called from a non-Jamesian perspective "neuronal feeling." At the time of *The Principles* James was a brain/mind dualist interactionist and spoke instead of mental or spiritual feeling as a component of the qualitative character of each state of consciousness. He described mental feeling as "the pure activity of our thought taking place as such" (p. 333).

It would seem to me that the feelings we have that are owed directly to inputs from our body would also qualify as mental feelings, for they are qualitative features of consciousness states. I would extend this thought to the perceptual qualities we experience, and beyond. Recall that for James all states of consciousness are qualitative occurrences. Suppose one could think of one's body under conditions that prevented one from feeling it. And suppose we can have thoughts of things at such a level of abstractness that we are unable to imagine those things visually or in any other sensory way. Even consciousness states that firsthand seem purely cognitive occurrences are all instances of feeling as well as of thought. This view of James's needs reconciliation with his repeated references to states that we find less warm and intimate to the point that some of them seem cold and foreign: he is referring in the latter cases to the states of other people or to some of our past states as we recollect them. Thus, it would seem, we find our own present states of consciousness warm and intimate because we enjoy direct acquaintance with their qualitative character.

#### *A Distinguishing "Flavor" of Recollective Experiences?*

Just before the start of the prior subsection I asked whether a certain proposed distinguishing "flavor" of a recollective experience does amount to its "representing" (Tulving, 2001, p. 19) the feeling of warmth and intimacy belonging to the experience thereby recollected. James's (1890/1950) account of recollective experience requires that an experience to qualify as recollective do more than represent this feature symbolically: "Remembrance is like direct feeling; its object is suffused with warmth and intimacy to which no object of mere conception ever attains" (p. 239). To recollect is like having

inner awareness of past states of consciousness of which one had inner awareness when they occurred. Recollective experience apprehends the qualitative dimension of the earlier experience in much the same way one's inner awareness apprehends that dimension of one's present states of consciousness.

An experience that recollects an experience finds the past experience to have been warm and intimate. It also can happen that one now apprehends a past experience of one's own only coldly or as though it did not occur to one. Such cases are to be explained in terms either of (a) one's being able to apprehend now only the cognitive dimension of those past experiences or (b) one's finding their qualitative dimension to be no longer familiar. They now seem foreign compared to one's present experiences or to be like experiences that belong to other people and are inferred to be occurring or to have occurred.

Consider being again aware of experiences from one's own past whose qualitative character now seems strange. The present awareness may well represent those past experiences as having been warm and intimate for they are not coldly apprehended at the present time either. But now they are found to have been sufficiently different in their qualitative character from one's present experiences so that ready recognition of them as having occurred to one is prevented. The direct-feeling-like awareness that one later has of those past experiences must still be familiar in order for one to appropriate them by recollection to the same stream or self.

### The Changing Concept of Episodic Memory

Much of Tulving's (2001) chapter that includes the specification discussed in the first main section of the present article centers upon the question "What is this auto-noetic consciousness?" and pertains to the shift currently underway in how the concept of episodic memory ought to be defined. The most important such change for Tulving's immediate purposes is the introduction of the concept of auto-noetic consciousness as a replacement for the general idea of consciousness that was at work previously in his definition. Episodic memory continues to be conceived of as a memory system whose operations execute certain functions. It is evidently still an

information processing system that a) receives and stores information about temporally dated episodes or events, and about temporal-spatial relations among these events, b) retains various aspects of this information, and c) upon instructions transmits specific retained information to other systems, including those responsible for translating it into behavior and conscious awareness. (Tulving, 1972, p. 200)

But the new definition maintains that what episodic memory is about are experiences undergone by the person whose episodic memory it is. The information that the episodic-memory system is now said to receive, store, retain,

and transmit to other systems is information acquired firsthand about one's experiences. The episodic-memory system receives information about them at the point when they transpire (cf. O'Shaughnessy, 2000, p. 106) and its processing this information is a necessary condition that makes it possible for the individual "to re-experience (remember) the subjectively experienced past" (Tulving, 2001, p. 21).<sup>3</sup>

Here is where autoenoetic consciousness gets brought in. For the experience of remembering past experiences is said to be "through autoenoetic consciousness." And it is thus implied that the episodic-memory system transmits to the autoenoetic-consciousness system whatever information the latter system requires for the re-experiencing of past experiences to occur there. There would seem to be some resemblance to the consciousness system of Freud's (1895/1966) that was later replaced in his mature theory (e.g., Freud, 1923/1961) with the perception-consciousness system where all of our experiences were held to occur. Except the autoenoetic-consciousness system is responsible for only a certain large category of our experiences. Others of our experiences take place thanks to other systems.

The shift in concepts from "conscious awareness" to "autoenoetic consciousness" is in part a matter of making explicit the following fact. Not every conscious awareness owed to a memory system's information transmission is of the kind for which the autoenoetic-consciousness system is responsible.<sup>4</sup> Tulving gives the example of a conscious thought to the effect that Lavoisier was guillotined during the French Revolution in Paris. Having such a thought could well qualify as a conscious awareness. It would be considered conscious because its occurrence was an object of inner awareness: the kind of awareness James spoke of in terms of one's having direct feeling of one's present state of consciousness. It will be recalled that James's inner-awareness conception requires two states of consciousness in which the second is the awareness of the first. The first is an awareness of something else: the circumstances of Lavoisier's death, in Tulving's example of a conscious awareness which is not a recollective experience. No instance of this conscious thought can be a recollective experience because there is no person alive now who witnessed what happened to Lavoisier.

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<sup>3</sup>The episodic-memory system is not the only memory system: "Memory systems are defined [by researchers in the scientific field of memory] in terms of property lists, statements of the kind of behaviour or cognitive information they mediate, the characteristics of their operation, and their neural basis" (Tulving, 1993b, p. 285). Memory systems are often conceived of as complex in consisting of subsystems and as varying with respect to how consciousness is involved in their operations.

<sup>4</sup>I shall bring out later that, in Tulving's more consistent view, conscious awarenesses are all of them outputs of autoenoetic-consciousness systems, where *conscious awareness* is understood to refer to any awareness that its owner apprehends directly, noninferentially.

Now what is the conscious awareness which the episodic-memory system makes possible by its transmissions of retained information regarding past experiences? Tulving (2001) describes this type of conscious awareness as a "re-experiencing [of] experiences as such" (p. 20). Some attention to James's (1890/1950) corresponding concept will be useful for the present purpose of grasping Tulving's concept of recollective experience more fully. James begins spelling out his own concept by setting aside those many familiar cases where a conscious awareness represents something about the past only symbolically or conceptually. He confines himself exclusively to experiences in which "the past is directly imaged in the mind, or, as we say, intuitively known" (p. 649). The reference to "intuition" implies in the context under discussion that a resemblance exists in all of the cases on which James is focusing between the qualitative contents respectively of the recollective experience and the past experience that it recollects. But the two experiences are left "each snug in its own skin" if all there is between them is that however-strong similarity in qualitative content. The second experience must itself be *taken* in a certain special way if it is to "stand for" the first experience and be a recollection of it. I comment in turn on the taking of the experience and on the special way in which it must be taken according to James.

1. By an experience's being "taken," I mean its being an object of inner awareness. James's understanding of inner awareness requires there to be a separate mental occurrence to apprehend a recollective experience or any other experience that is taken in some way. James (1890/1950) argues early in *The Principles* that any state of consciousness "to be named, judged, or perceived must be already past. No subjective state, whilst present, is its own object; its object is always something else" (p. 190). A minimal act of recollection perforce consists of a succession of two states of consciousness. The first state of these two involves in its own structure what Tulving calls a "re-experiencing of a past experience." It is what I have been calling in this article "the recollective experience." But it cannot be a recollective experience in James's view unless it is accompanied by a certain second state of consciousness. The second state must involve inner awareness that takes the first state or the relevant part or dimension of it in a certain special way.

2. James (1890/1950) explains as follows the special way in which an experience must be taken for it to be a recollective experience: it must be found to possess the warmth and intimacy that he previously discussed as being the basis for personal identity through the appropriation of experiences to the body or stream of consciousness; the stream was said to be that with which we identify more so than with anything else. But felt warmth and intimacy characterizes, in James's view, all of one's present experiences. It would seem they are necessarily subjectively warm and intimate since they are one's own experiences and their contents in every instance are qualitative (and cogni-

tive). James is thus calling our attention to the existence anyway of differences among experiences recognized firsthand as being one's own. Thoughts concerning one or another past fact are among these experiences. One may immediately place such thought-of facts in the past and sometimes even at their correct specific date. Such facts may even belong to one's own life: for example the fact of one's having come into the world at a certain place on a certain day. Yet one's conscious thought concerning this latter fact cannot qualify as a recollective experience of the big event. A current qualitative presence of the past fact must be added to the picture but not artificially: by however veridically imagining the event on the basis of reports received about it. One does not recollect one's birth because not even vivid imaginal thoughts that one may have about it can possess qualitative content directly deriving from originally experiencing the event. Those early experiences had no lasting effect that could specifically determine the qualitative content of any of one's present conscious thoughts concerning one's birth. Thus, something that James (1890/1950) rightly claims to be a necessary element of any act of recollection does not suffice.

More than thinking that one had experienced the past fact is required — unless psychologists would not mind speaking of “veridical illusory recollections.” Such candidates for the category of recollective experience are veridical insofar as one therein accurately imagines the fact. At the same time they are illusory qua recollections: they are causally mediated only by information regarding the respective past fact that was not acquired by experiencing the fact. James himself would not mind, because for him veridicality is not necessary. He writes emphatically, “*The object of memory is only an object [now] imagined in the past (usually very completely imagined there) to which the emotion of belief adheres*” (p. 652). Such belief includes that one directly experienced the object in the past but the belief need not be true. Commonsensically we speak of “false recollections.” These are the same as true recollections except what we seem to recollect was not the case; we did not actually experience it however vividly it may now seem to us that we did.

I asked what conscious awareness it is that Tulving asserts episodic memory makes possible by its transmissions of retained information about past experiences to auto-noetic consciousness. The answer I gave is that the referred-to conscious awareness consists of recollective experiences in large part. And I described what these experiences are from James's (1890/1950) perspective. More fully, the transmitted information to auto-noetic consciousness makes “mental ‘time travel’ through subjective time” possible “from the present to the past and to the future” (Tulving, 2001, p. 20). The direct effects of episodic memory on consciousness give rise not only to recollective experiences: past-oriented conscious awarenesses in which previously lived experiences are now re-experienced. Certain other experiences, which have as

their object a present experience or a probable, possible, or impossible future experience, also owe their occurrence to information that the episodic-memory system transmits to auto-noetic consciousness.

The following statement by Wheeler, Stuss, and Tulving (1997) would seem to come close to saying, if it does not so say, that direct apprehension of a present experience or one that has just occurred takes place by means of a process that produces an immediate re-experiencing of it:

But also dependent on auto-noetic consciousness and, we argue, closely related to episodic memory is the ability to be aware of the self's present. Healthy adults can introspect and have on-line experiences of their current thoughts, perceptions, and feelings. (p. 335)

This may mean that the same sort of process occurs in apprehending one's present experiences as occurs in apprehending one's past experiences by re-experiencing them. The episodic-memory system would function during the activity of introspecting, and at certain other times, to receive information about experiences just as they occur but would not simply retain this information for another time. It would also immediately transmit the information on to auto-noetic consciousness where a recollective experience would be produced yet not apprehended to be a past experience. The idea resembles James's (1890/1950, Ch. XV) notion of "the specious present," according to which a few states of consciousness that are in fact already just past are apprehended by inner awareness as occurring "now."

Perhaps the concept of auto-noetic consciousness is implicitly broader still. It may include as an occurrent part or product of the system any experience that has another experience as object but does not simply conceptualize it. The auto-noetic apprehension of any experience would be such as to find it warm and intimate whether or not one is now having the experience, has had it, or will have it in the future. Which means that auto-noetic apprehension may be nonveridical and illusory as well as veridical and caused through effects upon the episodic-memory system of the occurrence of the respective experience. The auto-noetic apprehension of future experiences can be veridical but of course cannot be an effect of the experiences before they have occurred. The episodic-memory system can only transmit information it has received although the auto-noetic-consciousness system can put such information to use in the creation of conscious awarenesses of experiences that have not yet taken place.

### What Is It Like "Without" Autoenoetic Consciousness? A Patient Who Now Lives in the "Permanent Present"

Tulving, Schacter, McLachlan, and Moscovitch (1988) characterize a certain brain-damaged patient as possessing "no consciously apprehensible past or, for that matter, future: He seems to live in a 'permanent present'" (p. 14). Tulving and colleagues have been studying K.C. for many years. Wheeler, Stuss, and Tulving (1997) also wrote of K.C.'s brain lesions as being disruptive of his capacity to experience autoenoetic awareness to the point of "leaving his mental state in the permanent present and himself incapable of mental time travel" (p. 335). Also, Tulving (1993a) has stated that K.C. "cannot remember any specific behavior in which he has ever engaged, and . . . therefore does not possess any autobiographical knowledge of the self" (p. 147).

These publications and others of Tulving's extensively describe the known facts about K.C. on which the words quoted above are based. The publications are useful in judging how literally those summary comments should be understood. The topic of this section of the present article consists of the phenomenological referents of the authors' descriptions. To what characteristics of K.C.'s stream of consciousness are they specifically referring when they write of the presence or absence of this or that kind of awareness and the respective capability as functional or not?

The information regarding K.C. that Tulving et al. (1988) and other articles and chapters provide suggests that a useful effort to comprehend the concept of autoenoetic consciousness will be one that seeks to determine what it is like from a first-person perspective to be the unlucky possessor of a capability for autoenoetic awareness that has been characterized as "largely dysfunctional or perhaps nonexistent" (Tulving, 2001). A conviction naturally arises that this is a direction worth exploring when Tulving (2001) informs us that his scientific concept of autoenoetic consciousness "literally has its roots" in the motorcycle accident responsible for K.C.'s unusual stream of consciousness. The abnormalities of K.C.'s stream have persisted now for many years, but early on they led Tulving to conceive of a distinct psychological capability, which he named "autoenoetic consciousness," that is possessed by every healthy and intact adult human being. Tulving may indeed have developed a useful concept that is reflective of reality, but I cannot keep from doubting that K.C., who seems so much like us judging from Tulving's observations, nevertheless differs from us as deeply as Tulving and his colleagues propose. Perhaps it is the adaptive importance I assign to autoenoetic consciousness that obstructs my viewing a person like K.C. as lacking this capability in the degree that Tulving proposes. However, such doubt should be helpful in the exploration of Tulving's concept and, of course, in improving our understanding of K.C.

The pages of Tulving (2001) that revolve around what auto-noetic consciousness is therefore start with an account of some of K.C.'s psychological capabilities. We are able to recognize in these pages the validity of Tulving's (2000) claim as to the importance of concepts: especially in determining how the end products of scientific research are recorded. Using his own technical vocabulary Tulving (2001) explains that the laboratory tasks

on which K.C. does very poorly . . . require him to mentally travel back in time to a particular episode, to relive it, to observe it again, to re-experience it. I named this kind of consciousness auto-noetic (Tulving, 1985). *Auto-noetic consciousness (auto-noesis)* is defined as the neurocognitive capability of normal adults to become aware of their existence in subjectively experienced time ["extending from the personal past through the present to the personal future"]. It includes but transcends self-awareness. (Tulving, 2001, p. 23)

The phrase I have inserted is directly quoted from Tulving (1985) and is consistent with other statements about auto-noetic consciousness in Tulving (2001) and elsewhere.

K.C.'s auto-noetic consciousness is thereupon described as being largely dysfunctional or perhaps nonexistent. This is a surprising statement because we have been told in the preceding section of Tulving's chapter of the many mental operations of which K.C. does remain capable. And it seems natural to think of some of those operations as involving one's having conscious awareness of experiences of one's own in a way others can only have with respect to experiences of their own. Even K.C.'s conscious thoughts that manifest what Tulving (1993a) called "third-person knowledge" about the world or himself would seem to be products most proximately of Tulving's auto-noetic-consciousness system.<sup>5</sup> Thus, reacting to an early description of K.C.'s phenomenology, I have elsewhere argued in effect that Tulving (1985) exaggerates when he calls K.C. "a man without auto-noetic consciousness" (Natsoulas, 1986).

I argued that K.C.'s present experiences are objects of inner awareness and the capability of auto-noetic consciousness is held to make this category of conscious awareness possible. Tulving would not have described K.C. as he did, as "clearly conscious" and "conscious in many ways," if K.C. lacked all inner awareness of what was transpiring in his mind. Tulving would not have judged K.C. to be conscious if K.C. had only unconscious awareness of his environment, that is, if K.C. underwent visual and other perceptual experiences but he was always fully unaware of their occurrence. In this regard K.C. would be, as he is not, like those patients who possess blindsight (Natsoulas,

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<sup>5</sup>See the next to the final paragraph of the just preceding main section of the present article, and the many statements in Tulving's publications to the effect that auto-noetic consciousness is our capability for subjective time travel from present to past and future.



1997), and he would give himself away, as it were, just as any exclusively blindsighted person would. Instead, K.C.'s perceptual abilities have been scientifically assessed to be more or less normal. I further argued that a K.C. incapable of having inner awareness

would not know when he had succeeded in experiencing something that he tried to experience. He would go on trying to do so even after he had experienced it, *since he could not be aware of that experience*. [K.C.] would have no idea what to say when interrogated about his stream of consciousness. He would not speak of blankness as opposed to something more than blankness. I suggest that [he has] a stream of consciousness to which he [has] inner access. [This] stream [consists] of a flow of [states of consciousness that is] distinctive not for its inaccessibility but for its limits on what it [can] present or represent [cf. Kinsbourne and Wood, 1982, p. 210]. (Natsoulas, 1986, p. 491)

My reference to K.C.'s reports of "blankness" is to his responses when he is asked to describe the state of his mind as he tries to think about yesterday or tomorrow (Tulving, 1985, p. 4). I was proposing that K.C. has a consciousness stream and inner awareness of present states that make it up but does not find there the kind of consciousness states he is being asked to report. Indeed he intelligently likens what he does introspectively find as he tries to think about yesterday or tomorrow to a kind of absence that is much like the immediately perceived absence of furniture in a room he might enter. His stream of consciousness may well be heavily populated with visual experiences of his interlocutor and of the room and furniture now present around him as well as thoughts about what he is now undergoing there. Tulving (1993a) states that K.C. "has a good sense of humor, appreciates jokes and banter, and sometimes makes light remarks about things happening around him" (p. 150). However, none of his consciousness states is evidently about something that he experienced yesterday or something he might experience tomorrow.

My objection to Tulving's (1985) notion about K.C.'s lack of auto-noetic consciousness was founded on (a) the empirical fact that K.C. has experiences of various kinds that are conscious in the sense of being objects of inner awareness and (b) the theoretical fact that Tulving's concept of auto-noetic consciousness includes the capability of having inner awareness. To the extent that K.C. has perceptual experiences, thoughts, and so on, of which he enjoys inner awareness, one cannot say that he is without auto-noetic consciousness. Based on my understanding of Tulving's concept of auto-noetic consciousness as already expressed in the present article, I would add the following about the concept to my old statement that I quoted above (Natsoulas, 1986, p. 491).

The capacity for auto-noetic consciousness is also actualized whenever my semantic-memory system transmits information that has among its consequences a conscious

thought of mine about where I was born. In cases of this type that involve only my semantic knowledge, my semantic-memory system transmits information to my episodic-memory system or, alternatively, to my auto-noetic-consciousness system directly. But, whichever of these is correct from Tulving's perspective, the information must reach my auto-noetic-consciousness system and this system must operate suitably, putting that information to use, if my thought about my birthplace is to occur consciously: that is, as an object of my inner awareness. It is not entirely clear that Tulving (2001) would agree. He speaks of the kind of consciousness that characterizes retrievals from the semantic-memory system as "noetic." Which means a kind of consciousness contrasting with the auto-noetic. Yet Tulving also calls these retrievals from semantic memory instances of conscious awareness, which literally makes them more — reflexively more — than simple awarenesses of something external to one's stream. A rather advanced question is: Can any noetic consciousness involving conscious thoughts go on if an individual's auto-noetic-consciousness system is rendered inoperative?

Among other normal things that K.C. can do is to imagine visually a certain particular tower in Toronto and to give on that basis an accurate description of it (Tulving, 2001). To perform this task K.C. relies on the occurrence in him of nonperceptual visual experience of the tower. This experience occurs upon the researcher's request to K.C. that he imagine and describe the tower. I want to suggest (a) that surely this visual experience is conscious in the sense of K.C.'s having inner awareness of its occurrence, and then (b) that perhaps it is conscious in the full auto-noetic sense. What I mean by the latter is consistent with Tulving's concept: that is, K.C.'s placement in present time of his imaginal experience of the tower plus an appropriation of the experience as being an occurrent part of his ongoing stream of consciousness.

1. Evidently K.C. reports convincingly that he is putting the experience to use in the process of specifying the building's features. Such putting to use requires that one have inner awareness of the experience. Just suppose one did not have the capacity to be aware of a present experience on which one must rely to give a good description of something. One might have the experience anyway in the absence of inner awareness but it would be for one as though one did not have it. This latter statement has reference to the first-person perspective, for an experience belonging to one can have effects on one also in the absence of one's being aware of its occurrence (cf. James, 1890/1950, p. 644). That an experience of one's own of which one is nevertheless unaware is an awareness of something else does not contradict my statement. Having awareness of something else need not involve having inner awareness of being aware of that something else.

2. And K.C.'s visual imaginal experience is not merely conscious: not simply an object of inner awareness. K.C. evidently also self-appropriates his experience. Which does not need to occur just because one has inner awareness of the experience. One can have an experience that one apprehends firsthand without recognizing it even at the time of its occurrence as being one's own. Reed (1972) describes a variety of anomalies in the experience of

self. One subcategory of such anomalies is “the loss of personal attribution.” Among Reed’s examples of the latter are the cases in which a schizophrenic patient does have inner awareness of his or her thoughts, actions, feelings, or impulses only to find them to “lack personal quality.” These mental occurrences are as though they belonged to someone or something else or at least as though they do not belong to the patient. Reed mentions also conditions under which normal individuals too may suffer a loss of personal attribution. But Tulving does not mention the presence of any indications that K.C. finds cold or foreign any of the experiences of which he has firsthand awareness. When K.C. is aware of any of his experiences firsthand, he has no doubts that the experience belongs to him — insofar as we know. This would seem to be a matter worth investigating since it pertains to what remains of his capability for auto-noetic awareness. The current concept would seem to allow for variation between people in the capability.

I mentioned K.C.’s placement in present time of his imaginal experience of the tower, but this could be a point with which Tulving would disagree. When K.C. is engaged in activities that “do not require time travel,” such as is presumably the case when he is describing the tower using his imaginal experience or answering questions of objective fact about the world, Tulving (2001) describes K.C. as follows:

He is naturally consciously aware of what he is doing, but the kind of consciousness involved is different from auto-noesis: It contains no awareness of personal time . . . . Although K.C.’s auto-noesis is severely impaired, his capability of conscious awareness of the world beyond subjective time . . . is well preserved. (p. 24)

Is Tulving describing here, like Reed, another anomaly in the experience of self? Is K.C. aware of what he is doing and consciously so aware, but he does not take his present experiences to be taking place in time? He does have awareness of something about the world, this awareness is conscious, an object of his inner awareness, and he appropriates this awareness to his stream of consciousness. But none of this qualifies as auto-noetic, according to Tulving, because there is no temporal reference involved. Actually, from Tulving’s perspective, there is nothing anomalous about this conscious activity because it is, in his view, how it takes place normally. It is not clear how Tulving has assessed K.C.’s performance as taking place outside subjective time, nor is it clear that Tulving would stand by this notion, denying that K.C. places his imaginal experience of the tower, for example, in the present section of his stream of consciousness.

A different deficiency in auto-noetic consciousness, as Tulving has defined it, might take the following form, among others. An inner awareness of a state of consciousness does not always occur, and it would certainly amount to an auto-noetic-consciousness deficiency if one’s stream of consciousness were

made up in maladaptive number of "sciousness" states, as James (1890/1950, p. 304) called them in distinction to states of consciousness. There may take place more or fewer than a normal proportion of states of one's stream that do not instantiate the property of being objects of inner awareness. In a clearly maladaptive case, it would be said the stream of one's mental life as it proceeds is more often unconscious in the latter sense than normally is the case. Although one is evidently having awareness of many things, it is too often the case that one does not know that this is going on.

Notwithstanding his widely admired phenomenological descriptions of consciousness states from a first-person perspective, James (1890/1950, pp. 304–305) found very tempting the view that all states of consciousness are actually states of sciousness, and said he was setting it aside for reasons that he described to be disciplinary; the commonsense view was, at the time, in the clear ascendancy. Near the end of his abridgement (published two years later) of *The Principles*, James (1892/1984) showed he had not rejected the startling view that the mental stream consists only of occurrences that must be inferred as present for no one can apprehend them directly. He boldly stated, "States of consciousness themselves are not verifiable facts" (p. 400). In the same chapter of *The Principles* in which he expressed this conviction, James nevertheless proceeded to give an account of the sense of personal identity in terms of the direct awareness that a present state of consciousness has of states of consciousness preceding it in the same stream. The present state finds many of the preceding states warm and intimate and to resemble present states of consciousness with respect to their qualitative contents. The radical implications of James's preferred although suppressed view against inner awareness would, of course, include a denial that we possess the capability of auto-noetic consciousness in the broad sense. We could have only semantic memory of our states of consciousness, assuming the truth of our being incapable of inner awareness and our therefore having to posit any occurrence of a consciousness state of which we might know.

I should think otherwise than James's sciousness hypothesis holds. In my view, someone who lacked auto-noetic consciousness to the extent that his or her consciousness stream always moved along without any inner awareness of its constituent states could not survive on his or her own. It would mean having awareness of environmental and bodily things without knowing one is aware of them. One cannot infer which awarenesses one is having from making observations of one's behavior because such inferences depend not simply on awareness of the behavior; one must also know one is so aware. But to know the latter is ruled out *ex hypothesi*, unless it is based on some further inference. And so on.

What follows on the assumption that all of one's awarenesses of environmental and bodily things are unconscious: not objects of inner awareness?

Disaster follows, unless the participation of a suitable caretaker can be assumed. If we do not add a caretaker to the assumption, a long list of problems of adaptation follow, including the following. One would see, hear, feel, or smell flames or predators without acquiring any belief that one is perceiving them and that they are in the vicinity. One knows or thinks that flames or predators are nearby from believing that one is having certain perceptual experiences. But one cannot acquire this belief if one is incapable of inner awareness of those experiences. And the absence of inner awareness also disallows every inferential path to such a belief. The empirical basis for any inference is not just the having of certain relevant experiences but being aware of having those experiences. Not to be aware of any particular experience is equivalent to not having it for the purpose of drawing inferences. Returning to K.C., I can only raise at this time the question of how normal his autoonoetic consciousness is in the frequency with which he undergoes inner awareness of his present states of consciousness. If Tulving's proposal is valid that the episodic-memory system mediates both functions causally, K.C.'s failure to remember his past states of consciousness suggests that he may also have a deficiency in inner awareness of his present states. K.C.'s conscious mental life may be indeed restricted to the present section of his stream of consciousness, but the extent to which this section consists of consciousness states as distinct from consciousness states, in James's sense, is a further question regarding K.C.'s autoonoetic consciousness.

It also seems likely from Tulving's description of K.C.'s psychological capabilities that K.C. can temporally situate his present experience in a sequence extending for a little bit backward from now. For K.C. remains aware of what he was doing and other recently experienced events for up to two minutes afterwards (Tulving, 1989). This amount of time is estimated as somewhat longer, "a few minutes," in a subsequent publication (Tulving, 1993a). It would appear from this that K.C. may well have an autoonoetic consciousness that extends into the past to a small extent. The activities he is capable of require experiences and inner awareness of their occurrence in him. We are told among other things that K.C.'s manners are exemplary (Tulving, 2001), an unlikely trait to discover in isolation: "When he is engaged in conversation he pays close attention to other speakers, his attention does not wander, he stays alert throughout, and he always responds appropriately" (Tulving et al., 1988, p. 7). Surely K.C. possesses some ability to keep track of what he has just experienced in social interaction and so to recollect his experiences over a very short time. But this evidently depends on the absence of distractions. Tulving (1985) states that K.C. forgets anything that is said to him almost immediately if he happens to get distracted.<sup>6</sup>

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<sup>6</sup>Tulving (1985) refers to the same patient as "N.N."

However, to attribute some time consciousness to K.C. — for example, his locating present experience in the present and as its occurring just after his preceding experience and so on up to two minutes or more — runs against Tulving's general statements about K.C. and time. On the face of it, these statements contradict what I am suggesting. K.C. cannot "remember events as having happened at a particular time . . . . The awareness of time in which one's experiences are recorded . . . seems to be missing" (Tulving, 2001, p. 24). Tulving offers no qualification of these statements with reference to the present or very recent past. Indeed, he reports that asking K.C. to travel subjectively back in time even "a few minutes" yields the reply that he cannot do it.

Tulving (2001) describes K.C. as not able to

remember anything that has ever happened to him. However hard he tries and however powerfully he is prompted, he cannot bring into his conscious awareness a single event, happening, or situation that he witnessed or in which he participated. (p. 22)

In context, an implication of this statement would seem to be that K.C.'s describing the tower from an imaginal awareness is based on "factual knowledge" that he possesses. This knowledge is "impersonal, objective, public, and shared" (p. 22). Tulving (1985) implies the same when he reports K.C. "knows what the North American continent and the Statue of Liberty look like, and can draw their outlines" (p. 4). In response to this finding I have elsewhere raised the question of whether K.C. had to consult a recollective experience in order to draw the outlines of an object (Natsoulas, 1986, p. 488). It seemed to me that K.C. might have such conscious experiences to some small extent sans the ability to place them in his past. He would not have any recollective experiences by Tulving's definition but it would not be completely true that K.C. is unable to have conscious awareness of a single event, happening, or situation he has witnessed or in which he has participated.

From Tulving (2001) I gather that K.C. did use imagery to perform in this way but I cannot say Tulving would consider this imagery recollective as opposed to a construction from semantic memory. The above statements from Tulving (2001, p. 22) lead me to believe his thesis is the latter. The thesis must be that K.C. works from a visual imaginal experience although he could specify the object's features just as well by retrieving them from the semantic-memory system. The imaginal experience that K.C. now has of the tower therefore is not a re-experiencing of any past perceptual experiences although there is no question he has had such conscious experiences of the tower. Using factual knowledge about the tower, K.C.'s brain creates his visual imaginal experience on the spot.

Support for this interpretation might include showing that K.C. describes a scene or object by using imagery no better than he does the same object or

scene without stopping to imagine it at all. Such a finding would help rule out a possible contribution to the imagery by the episodic-memory system. Of course, a contrary finding that he actually needs imagery to achieve his best description of an object that he has previously seen would detract very little from the fact of his greatly deficient autoonoetic consciousness. But it could lead to research regarding how much of the latter capability is actually left to him and the forms that are taken by whatever amount of it is still left. This is important for determining which psychological functions can proceed absent all autoonoetic consciousness as well as for determining the roles that autoonoetic consciousness plays when it is necessary.

Surprising indeed is K.C.'s reported inability to have thoughts about the future. For we are told that "his language skills and general knowledge are relatively intact" and that he has "no difficulty with the concept of chronological time." More than that: "He knows many things about the world, he is aware of this knowledge, and he can express it relatively flexibly. In this sense he is not greatly different from a normal adult" (Tulving, 1985, p. 4). K.C. may be unable to imagine himself being engaged in any specific activity but he surely should be able to think of activities that he prefers for spending his time. Tulving et al. (1988) report that K.C. can give good descriptions of activities in which people engage, such as changing a flat tire and telephoning long-distance. There would seem to be no reason pertaining to autoonoetic consciousness per se that he cannot have thoughts regarding the future — even about his eating in a restaurant when he leaves the laboratory. His conscious thoughts are produced *ex hypothesi* from semantic-memory information transmissions. Why cannot some of them be about himself in the future? He does have such conscious thoughts concerning the past based on what he knows about himself.

K.C.'s reports of blankness about the past and future may have, in the interview context, the specific meaning that he is unable to imagine himself doing anything he has done or anything he might do. Tulving (2001) writes about K.C.:

He cannot tell the questioner what he is going to do later that day, or the day after, or at any time in the rest of his life, any more than he can say what he did the day before or what events have happened in his life. When he is asked to describe the state of his mind when he thinks about his future, whether the next 15 minutes or the next year, he again says that it is blank. (p. 24)

K.C. has a rather intact body of knowledge that should allow him conscious thoughts about the future. His reports of having no thoughts about the future are likely reports of the absence of the kind of conscious awareness in which his questioner is specifically interested. Of relevance to understanding K.C.'s blankness reports is the use experimentally by Tulving and others of the

“remember/know paradigm” in which normal subjects are asked to judge whether their conscious awareness of a past event was a case of recollection or occurrent belief on a different basis. This paradigm may have been already in implicit use with K.C., the researchers having gotten across to him that he should report having any awareness of experiences previously had or expected in the future. It was only recollective experiences and their future-directed analogs that he did not find in his stream of consciousness.

A problematic implication of the semantic hypothesis regarding K.C.’s imagery pertains to the anticipation of future events and situations. I shall get to that implication in the second of two steps:

1. Information transmitted by the episodic-memory system to auto-noetic consciousness is proposed as essential for all kinds of auto-noetic awareness: re-experiencing of past experiences, inner awareness of present experiences, and anticipatory awareness of future experiences. Now assume, based on his ability to imagine the Toronto tower, the continent of North America, and the Statue of Liberty, that imaginal experiences are constructible in K.C. from information that is provided by semantic memory. Indeed, K.C. is described as evidently normal in his ability to imagine visually and describe familiar objects (Tulving et al., 1988, p. 8). These experiences would not qualify as recollective, but this would not be because they are not objects of inner awareness, nor would it be because they are less than or different from experiences. Owing to vividness or emotional impact, it might even seem intellectually to K.C. as though certain of them were re-experiencings: “Although it is not present here and now, I can ‘see’ this so clearly I must have experienced it before.” The presumed original experience might be assigned to a certain point in his life based entirely on knowledge of relevant facts. My question is: Why does this not happen, if it never does? The answer could be this: his imaginal experiences are not vivid enough to lead him to infer that he must have had corresponding visual perceptual experience. Or he believes his imagery comes from his knowledge of the facts, as it actually does according to the semantic hypothesis.

2. If K.C. can have imaginal experiences produced from semantic-memory transmissions of information received by K.C.’s auto-noetic-consciousness system, how is he prevented by his neurological condition from having imaginal experience he would describe as being of a possible future state of affairs? It is not the case that K.C. does not understand time or the notion of the future. He surely can have thoughts about events not only that have taken place in the past but that may take place in the future, of changes in the world resulting if certain things were to take place. Surely, he is able to conceive of the collapse of the Toronto tower as a matter of factual possibility. And, if he imagines the upright tower strictly from his semantic memory, is it truly impossible for him to imagine the tower in different shape? The same ques-



tion applies to K.C. himself. Because he can imagine visually many other familiar objects, I infer that he is able to have visual imagery of his own appearance.

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