



philosophy of mental time IV: time, experience, and consciousness

January 31st and February 1st, 2016

Mino, Osaka, Japan

<http://www.chs.nihon-u.ac.jp/philosophy/time/>

abstracts

Sunday January 31st, 17:00~18:00

Lajos Brons (Nihon University)

Philosophy, time, and consciousness: an opinionated introduction

This talk will give a general introduction into the topics and aims of the workshop. It will briefly discuss the relations between experimental science and philosophy and possibilities for cooperation, and give a sketchy overview of some key philosophical ideas about consciousness and time. The primary purpose of the talk is to provide a framework for discussion.

(Discussion will take place after dinner.)

Monday February 1st, session 1, 10:00~12:30

Kitazawa Shigeru (Osaka University)

How does the brain construct the mental present?

Mental time, which we define as the awareness of time, consists of the mental present, past, and future. We here raise a question as to how the brain constructs the mental present. To address this issue we review several temporal illusions that occur within a time frame smaller than one second. For example, we see color before it is actually presented (color phi), feel a touch where it would be touched in the future (cutaneous rabbit), err in ordering touches to the hands when the arms are crossed, or in ordering visual stimuli that are given just prior to the onset of saccadic eye movements. It is now generally accepted that these temporal illusions result from "post-diction", during which the brain settles events in both space and time so that the yielded spatio-temporal perception best explains the information accumulated over a certain period of time. We further suggest that brain regions that represent apparent motion play some essential role in these illusions. We finally discuss relationship between the mental present and the specious present, a terminology defined in philosophy.

Jenny Hung (Lingnan University, Hong Kong)

On Dainton's Extensional Theory of Experience

I cast doubt on Barry Dainton's extensional theory of experience. I demonstrate that the overlapping phenomenon of specious presents is in principle unverifiable. I also illustrate by reductio ad absurdum that the model is internally inconsistent. The Extensional View states that mental contents are spread through, and extended over time. Its representative advocates are Broad (1923), Mundle (1954, 1966), Foster (1991) and most recently Dainton (2004, 2008, 2012). Dainton accounts for continuity of the mental by appealing to overlapping chains of specious presents. He claims that a phenomenally continuous experience is composed of a succession of specious presents which overlap by virtue of sharing common parts (Dainton, 2006, 2008, 2012). An example of the specious present is the moment in which we hear the successive rat-tats of a machine gun (Dainton, 2012). Several stimulations are experienced altogether at one present moment. Moreover, the extensional theory is illustrated by an example of hearing a succession of brief auditory melody "do-re-mi-fa". As indicated by Dainton, the melody "do-re-mi-fa" includes at least three specious presents (SP): SP1 = [do-re], SP2 = [re-mi], SP3 = [mi-fa], where the "fa" in SP1 is numerically identical with the "fa" in SP2, and similarly for the 'me' in SP2 and SP3, and the "re" in SP1 and SP2. SP1 overlaps with SP2 by having the same content, namely, having the same "re" in each of them (Dainton, 2008).

I demonstrate that this model leads to inconsistencies. I first assume that there is a stream of continuous experience having the perception of motion, which is composed of overlapping specious presents. There are two possibilities, mutually exclusive and collectively exhaustive, under Dainton's extensional theory: either (1) the specious presents partially overlap, or (2) they totally overlap. The partial overlapping model depicts that there exists at least a certain period of time during which specious presents do not overlap. That is to say, the overlapping parts does not constitute the whole section of experience. This leads to a problem: if one defines the starting and ending point of two connected specious presents, such that their "joint" steps into one of the non-overlapping phases, one fails to explain the sense of continuity at this "joint".

Likewise, the total overlapping model is also problematic. This model states that every smallest period of time is covered by two (or more) overlapping specious presents. In this case, the difficulty of continuous perception is solved, but we have produced more than one simultaneous present moments whose existence are not entailed from the assumption, namely that there is a single continuous experiential stream. A single continuous stream of experience at one moment is understood as having is a single subject experiencing one present moment, but not two or more present moments simultaneously.

Second, I argue that the very idea of "overlap" in case of specious presents is questionable. Consider the case in which there is a replicate of me on twin earth, whose experience is the exactly the same with me from t_1 to t_{10} . Suppose my experience from t_1 to t_{10} is denoted by SP_1 to SP_{20} , and her experience from t_1 to t_{10} by SP_1' to SP_{20}' . Since the experiences are exactly the same, when I regard myself as the subject of experience, I cannot tell whether I experience one of the streams, both of them, or I swap between the two. If there is no information to support that E_1 and E_1' are one single token experience or two experience of the same type, accordingly, it is in principle unverifiable whether E_1 and E_2' are separated or overlapping.

(There is a shorter abstract available on the project website.)

Hayashi Yoshiyuki (University of Tokyo)

Self and conscious experience

What is the conceptual relationship between the self and experience? Some could claim that they are identical: self is nothing but a stream of consciousness. This view immediately confronts the absence of experience, or the existence of unconsciousness, implicated in dreamless sleep, coma, or anesthesia. If self is just a stream of consciousness, selves die every night because consciousness is thought to be absent during dreamless sleep. However, this sounds absurd in light of our ordinary understanding of selfhood. Dainton (2008; 2014) avoids this "bridge problem" by insisting that the self is a capacity to produce consciousness. During these unconscious gaps, there remains a capacity that would causally produce a chain of

conscious experiences if it were active, hence our identity can be preserved. On the other hand, Strawson (1999; 2011) rather denies our identity over time and suggests that we are something transient; as a self, we exist only for a short period of time. While Dainton admits both of our identity over time and of a flawless continuity of experiences if the capacities were active, Strawson admits neither. Nevertheless, they both emphasize a tight link between self and conscious experience.

In contrast, I propose that the notion of self is irrelevant to that of conscious experience. They are conceptually independent; thus I argue both that there could exist subject without experience and experience without subject.

One could (at least) conceive of a creature that behaves exactly like us, lacking any sort of felt qualities; they are just lacking conscious experiences. One could also conceive of us becoming such a creature (cf. Siewart 1998), which would only amount to death (Dainton and Bayne 2005). Also in reality, this intuition could be a ground for justifying a sort of brain death (cf. McMahan 1995). However, I think there is a conflation of concepts: irreversible loss of consciousness does not necessarily constitute death. Rather, loss of consciousness deprives one of meaning or value of one's life.

It is still difficult to imagine experience without any subject. For example, Dainton claims that the self could be reducible to very simple experiences (Dainton 2008 Ch.8). Some others share the same intuition: a pain experience that is realized by a minimally sufficient brain part for the pain seems "bad for someone, even if that someone is only a transient and rudimentary subject of consciousness" (Kahane and Savulescu 2009, 13). However, I argue that this is not always true: one could be dead while a stream of consciousness is going on (I shall point out that it is this case that is described in Sinnott-Armstrong and Miller (2013)).

Finally I explore some of the implications from that the self and consciousness are conceptually apart.

(There is a shorter abstract available on the project website.)

Ozawa Ryosuke (Osaka University)

Why do we feel the return trip being shorter?

When you make a round trip, you could feel as the return trip is shorter than the initial trip. This phenomenon is called the "return trip effect". Virtual trip experiments revealed that the return trip effect is caused only postdictively, and the postdictive evaluation would be explained by the discrepancy between expectation and perception of mental time.

Monday February 1st, session 2, 14:00~16:30

Hirata Satoshi (Kyoto University)

Apes remember a movie story

We developed a novel eye-tracking task to examine great apes' anticipatory looks to the events that they had encountered one time 24-hour earlier. Half-minute movie clips depicted novel and potentially alarming situations to the participant apes. In the Experiment 1 clip, an aggressive character came out from one of two identical doors. While viewing the same movie again, apes anticipatorily looked at the door where the character would show up. In the Experiment 2 clip, the human actor grabbed one of two objects and attacked the character with it. While viewing the same movie again but with object-location switched, apes anticipatorily looked at the object that the human would use. Our results show that great apes, just by watching the events once, encoded particular information (location and content) into long-term memory and later retrieved that information at a particular time in anticipation of the impending events.

Betsuyaku Toru (Kyoto University)

Retrieval of incidentally encoded memory in non-primate species

It has been hotly debated whether nonhuman animals have the ability for episodic memory, or to retrieve memories of their private past event. Integration of “what, where, and when (WWW)” of the events and incidentality of encoding are two major criteria of this memory process. Although the former criterion has been successfully met in rodents and food-caching birds, very few studies addressed the latter. These previous approaches may not be suited to broad comparative studies because of their use of species-specific behavior and/or intensive training. In order to draw an evolutionary scenario of episodic memory, it is desirable to compare various species using the same experimental paradigm. Our approach was to test whether animals would retrieve incidentally formed memory trace of a single past foraging experience, using species-general behavior without intensive training. Specifically, we asked whether the animals return to the food left uneaten after delay, rather than the rewarded location. Because associative learning predicts that animals would return to the rewarded location, revisit to the unrewarded location may not be explained by such simple learning. Rather, it might suggest the adaptive use of an incidentally formed memory at the first foraging to maximize the possibility to obtain an additional reward. In this talk, we introduce the application of this experimental paradigm to non-primate mammals, including dogs, rodents (degus and golden hamsters), cats, and horses. From these results, we would like to discuss the significance of focusing on incidentality in episodic memory research in nonhuman animals.

Kourken Michaelian (University of Otago, New Zealand)

***Mental time travel and episodic memory in humans and animals:
Continuities and discontinuities***

In the years since Tulving first argued for episodic memory as a distinct memory system (Tulving 1972), episodic memory – corresponding roughly to what philosophers have referred to variously as perceptual memory, reminiscence, retrospective memory, event memory, recollection, or personal memory (Brewer 1996) – has become a major area of research in psychology. As research has advanced, episodic memory, which was initially viewed as a distinct store for information deriving from experienced episodes, has increasingly been viewed as a form of past-oriented mental time travel (Suddendorf and Corballis 1997) analogous to future-oriented mental time travel (Michaelian et al. 2016).

While it is well-supported by empirical evidence (Szpunar 2010), aspects of this emerging view of episodic memory as mental time travel have been highly controversial. This talk will focus on two such aspects. First, future-oriented mental time travel – the ability to imagine possible future events – is a constructive, simulational capacity (Schacter et al. 2008; Mullaly and Maguire 2014). Viewing episodic memory as a form of mental time travel thus suggests that it likewise has a simulational character. Theorists wedded to more traditional conceptions of episodic memory, on which episodic memory is responsible for giving us knowledge of the past by preserving causal connections with past episodes (e.g., Bernecker 2010) have therefore resisted the assimilation of episodic memory to mental time travel, arguing for sharp metaphysical and epistemological discontinuities between episodic memory and future-oriented mental time travel. There is ongoing controversy over whether episodic memory is indeed qualitatively distinct from mental time travel (Debus 2014; Perrin 2016; Michaelian 2016b). Second, mental time travel appears to depend on a range of recently-evolved cognitive capacities (Tulving 2002; Klein 2013) and, in particular, to be characterized by a specific form of consciousness: auto-noesis, or consciousness of the self in subjective time (Wheeler et al. 1997; Klein 2015; Michaelian 2015). Viewing episodic memory as a form of mental time travel thus suggests that it is uniquely human, i.e., that there is a sharp evolutionary discontinuity between human episodic memory and the “episodic-like” (Clayton and Dickinson 1998) memory that has been demonstrated in a number of non-human species. There is ongoing controversy over whether episodic memory is indeed qualitatively distinct from episodic-like memory (Corballis 2013; Suddendorf 2013).

This talk will make a case for a twofold “continuist” position by building on a novel philosophical theory of remembering as simulating the past (Michaelian 2016a) to respond to arguments for (1) qualitative discontinuities between episodic memory and future-oriented mental time travel and (2) qualitative discontinuities between human and animal episodic memory.

Are there qualitative differences between episodic memory and future-oriented mental time travel? Continuists maintain that, aside from their distinct temporal orientations, episodic memory and future-oriented mental time travel are qualitatively continuous. Discontinuists deny this, arguing that, in addition to their distinct temporal orientations, there are qualitative metaphysical or epistemological differences between episodic memory and future-oriented mental time travel. The talk defends continuism by responding both to arguments for metaphysical discontinuism, based on alleged discontinuities between episodic memory and future-oriented mental time travel at the causal, intentional, and phenomenological levels, and to arguments for epistemological discontinuism, based on alleged discontinuities with respect to the epistemic openness of the past and future, the directness or indirectness of our knowledge of past and future, and immunity to error through misidentification (Debus 2014; Perrin 2016). The talk further builds on recent work on imagination as a source of knowledge (Kind forthcoming; Balcerak Jackson forthcoming) to develop a positive case for continuism, arguing for the reliability of simulation of past and future events.

Are there qualitative differences between human and animal episodic memory? Arguments for evolutionary discontinuity turn both on the flexible, simulational character of human episodic memory/mental time travel and on the involvement of auto-noetic consciousness. Under the former heading, in the non-human species studied to date (e.g., scrub jays (Cheke et al. 2010) and rats (Corballis 2013)), there is evidence of the ability to replay past sequences, but there is little evidence for the highly flexible simulation of past and future events characteristic of human mental time travel; i.e., animal episodic memory appears to correspond more closely to Tulving's original definition (Keven forthcoming). Under the latter heading, there is no clear means of assessing the presence of auto-noesis in non-verbal animals, leading some researchers to suggest that phenomenological definitions of mental time travel be replaced with purely behavioural definitions (Eacott and Easton 2012); however, while animals are able to satisfy some behavioural criteria (Allen and Fortin 2013), only humans would appear to have the robust sense of self that is presupposed by auto-noesis (Markowitsch and Staniloiu 2011), so auto-noetic consciousness in animals is unlikely. Despite these differences, there is reason to favour evolutionary continuity between human and animal episodic memory/mental time travel. First, while human mental time travel does indeed have a flexible, simulational character, mnemonic sequences derived from past events play a role in simulating not only the past but also the future (Pezzulo 2016; Cheng and Werning forthcoming a; Cheng et al. forthcoming b); there may not be a clear distinction between replaying past experiences and "pre-playing" or simulating possible future experiences. Second, while it is indeed unlikely that a sense of self sufficiently robust for full-blown auto-noesis is present in any non-human species, auto-noetic consciousness appears to emerge gradually out of more primitive forms of noetic and anoetic consciousness (Vandekerckhove and Panksepp 2009) which presuppose only more basic senses of self (Northoff and Panksepp 2008). Thus there is a case to be made for the gradual evolutionary emergence of the form of simulational, auto-noetic mental time travel found in humans, with

cultural factors likely being as important as purely cognitive factors (Osvath and Gärdenfors 2005; Martin-Ordas 2016).

The overall picture that emerges from this defence of a twofold continuist account of the relationship between episodic memory and mental time travel in humans and animals is one on which, while there are indeed important quantitative differences between episodic memory and future-oriented mental time travel, and between episodic memory/mental time travel in humans and episodic memory/mental time travel in animals, there is no sharp qualitative difference in either case.

(There is a shorter abstract available on the project website.)

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