

## Phenomenal Continuity and the Bridge Problem

Johan E. Gustafsson\*

*Any theory that analyses personal identity in terms of phenomenal continuity needs to deal with the ordinary interruptions of our consciousness that it is commonly thought that a person can survive. This is the bridge problem. The present paper offers a novel solution to the bridge problem based on the proposal that dreamless sleep need not interrupt phenomenal continuity. On this solution one can both hold that phenomenal continuity is necessary for personal identity and that persons can survive dreamless sleep.*

The view that all experiences in the life of a single person necessarily belong to a single stream of consciousness has found few supporters. Obvious challenges are the frequent periods of unconsciousness during, for example, dreamless sleep that it is commonly thought that a person can survive. Any theory that analyses personal identity in terms of phenomenal continuity needs to deal with these ordinary interruptions of our consciousnesses. This is the bridge problem.<sup>1</sup> The present paper offers a novel solution to the bridge problem that does not rule out that phenomenal continuity is necessary for personal identity nor that persons can survive dreamless sleep.

[p. 290] The most elaborate elucidation of the concept of phenomenal continuity and its relation to psychological continuity is due to Barry Dainton.<sup>2</sup> Phenomenal continuity differs from psychological continuity in being based on a continuity of experiences rather than of dispositional states such as beliefs, intentions, and memories. Phenomenal continuity consists in overlapping sequences of phenomenal connectedness rather than overlapping sequences of psychological connectedness. Phenomenal connectedness is, following Dainton, the relation of experienced togetherness that can hold between different conscious states. Two simultaneous conscious states are phenomenally connected if they are both parts of a single consciousness. Two non-simultaneous conscious states are phenomenally connected if one of them is experienced as flowing into the

---

\* I would be grateful for any thoughts or comments on this paper, which can be sent to me at [johan.eric.gustafsson@gmail.com](mailto:johan.eric.gustafsson@gmail.com).

<sup>1</sup> Dainton (1996, p. 22).

<sup>2</sup> See, especially, Dainton (2008, chap. 1–3).

other. A stream of consciousness can then be conceived of as a collection of experiences in which all simultaneous experiences are phenomenally connected and all non-simultaneous experiences are phenomenally continuous.<sup>3</sup> This entails that two experiences are phenomenally continuous or connected if, and only if, they are members of the same stream of consciousness.

### 1. The bridge problem

If one takes phenomenal continuity to be necessary for personal identity and believes that a stream of consciousness ends with dreamless sleep and still believes that persons can survive an ordinary night of dreamless sleep, one seems to have a contradiction. The upshot of the bridge problem is that at least one of the following must be denied:

- (a) If a person  $P_1$  is conscious at time  $t_1$  and a person  $P_2$  is conscious at time  $t_2$  then  $P_1$  is identical to  $P_2$  only if there exists a (non-branching) stream of consciousness  $S$  such that  $P_1$  partakes of  $S$  at  $t_1$  and  $P_2$  partakes of  $S$  at  $t_2$ .
- (b) Two experiences separated by dreamless sleep cannot be phenomenally connected nor continuous and can therefore not be part of the same stream of consciousness.
- (c) A person  $P_1$  who is awake at time  $t_1$  and falls to dreamless sleep at time  $t_2$  can be identical to a person  $P_2$  that wakes up at time  $t_3$  where  $t_1 < t_2 < t_3$ .

There does not seem to be any way to consolidate (a)–(c): all solutions to the bridge problem involve denying at least one of (a)–(c).

The most radical solution would be to keep (a) and (b) and deny (c). This would mean that contrary to popular belief no person has ever survived a night of dreamless sleep. So persons would either all have much shorter lifespans than usually thought or truly dreamless sleep is much rarer than common sense would have it. The former view has been defended in recent years by Galen Strawson.<sup>4</sup>

[p. 291] The most popular approach has been to deny (a) and instead adopt, for example, the psychological view or animalism. But also philosophers with a phenomenal approach to personal identity, like John Foster and Dainton, have taken this path. Foster claims that two distinct streams of consciousness are consubjective if they would have been phases of a single stream had the former stream continued until the time the latter

<sup>3</sup> Dainton and Bayne (2005, p. 554).

<sup>4</sup> Strawson (1997, 1999, 2009).

stream begins.<sup>5</sup> Dainton instead identifies a person with the system of objects that is capable of producing its experiences.<sup>6</sup> But as he shifts from a purely phenomenal continuity to a continuity of phenomenal capabilities of systems of objects he gives up the Lockean idea that, '*personal Identity* consists, not in the Identity of Substance, but [...] in the Identity of *consciousness* ...'.<sup>7</sup> In the following it will be argued that one needs to deny neither (a) nor (c).

The present proposal is that one does not have to accept (b). What grounds are there for the claim that the experience of falling asleep and the experience of waking up after a dreamless sleep are not parts of the same stream of consciousness? There is of course some kind of discontinuity in our consciousness between falling asleep and waking up, but what reasons are there to believe that there is a phenomenal discontinuity?

There are, alas, few attempts in the literature to put forward any explicit arguments for the acceptance of (b). It is usually simply taken for granted. Dainton writes as follows:

Any wholly experiential approach faces a significant hurdle: the continuity of consciousness may be sufficient for our survival, but it is clearly not necessary for it. Our lives do not take the form of a single uninterrupted stream of consciousness. An account is needed of how persons manage to survive periods of unconsciousness (such as dreamless sleep and coma).<sup>8</sup>

It seems that most people lose consciousness completely at least once every twenty four hours, when they slide off into dreamless sleep. If this is right, then a typical person can expect to have several thousand distinct streams of consciousness during the course of their life.<sup>9</sup>

It might seem that the experiences of falling asleep and waking cannot be phenomenally connected due to the passage of time between them. But this, it will be argued, is a mistake. Suppose that there exists an experience  $e_1$  at time  $t_1$  and an experience  $e_2$  at the later time  $t_2$ . If there is a period of time without any experiences phenomenally continuous with  $e_1$  and  $e_2$  between  $t_1$  and  $t_2$ , this would not imply that  $e_1$  and  $e_2$  are not phenomenally continuous since phenomenal and physical continuity are logically independent. There is nothing in the relation of phenomenal connectedness, that is, the relation of experienced togetherness, that necessarily rules out that this can hold between conscious states that are hours apart. That

---

<sup>5</sup> Foster (1979, p. 179).

<sup>6</sup> Dainton (2004, p. 384).

<sup>7</sup> Locke (1694 / 1979, book ii chap. xxvii § 19 p. 342).

<sup>8</sup> Dainton (1996, p. 22).

<sup>9</sup> Dainton (2004, pp. 379–380).

the last conscious state before falling asleep is phenomenally connected with the first state after waking up just [p. 292] involves that the former of these states is experienced as flowing into the latter. What is strange about that?

One possible worry is due to a comparison of streams of consciousness with other types of streams. It would be very odd for a stream of water flowing over a waterfall at 12 midnight to emerge six hours later at 6 a.m., without existing at the intervening times—is it not just a bit odd to think that a stream of consciousness might behave like this? This objection, however, merely calls into question whether the stream metaphor is appropriate for overlapping sequences of experienced togetherness that may reach across temporal gaps. Nothing important hinges on this since (a)–(c) can be restated in terms of these overlapping sequences of experienced togetherness rather than in terms of streams or continuity.

Nevertheless, one might still find a mental unity relation that reaches over temporal gaps a little strange. A possible argument runs as follows. Assume that (i) phenomenally unified experiences are parts of a single experience. Now, take two interrupted experiences,  $e_1$  and  $e_2$ . If  $e_1$  and  $e_2$  could be phenomenally unified, that would imply that (ii) experiences can be scattered objects or events—one part of them can occur at  $t_0$  and another part occur at  $t_2$ , with no part occurring at  $t_1$ . That result seems somewhat counter-intuitive. The trouble with this argument is with the first assumption (i). Note first that diachronic phenomenal continuity between two experiences does not require them to both be parts of a further third experience. For example, on Dainton's view:

When two experiences are co-conscious they are experienced together, but this togetherness is not a product of a third experience which comes between the two, it is a direct (unmediated, experientially speaking) relationship between the two experiences themselves.<sup>10</sup>

So if phenomenal connections between experiences do not seem to require (i), what else could support (i)? Perhaps that when one experience is experienced as flowing into a temporally adjacent experience they seem to both be part of a single longer experience. But although it is plausible that (i') synchronous or temporally adjacent experiences that are phenomenally unified are parts of a single experience, the more general claim, (i), seems unfounded. The weaker claim, (i'), is of course perfectly consistent with the conjunction of (ii), (a), and (c).

So far we have just discussed the mere possibility of phenomenal continuity bridging temporal gaps. But there is at least some positive

---

<sup>10</sup> Dainton (2008, p. 48).

evidence for actual cases of phenomenal continuity across temporal gaps. Patients that have been given anaesthetic sometimes report that they experienced being anaesthetized for over an hour as if no time had passed at all. For example, Ingmar Bergman reports:

I was operated on once, a trivial operation, and I got too much anaesthetic, so that they nearly didn't get the life back in me again. A minor [p. 293] operation, and I was out for eight hours. They had a terrible difficulty in getting me back to life. The interesting thing was that for me those eight hours were no hours at all, not a minute, not a second. I was completely gone. I was completely switched off. So that was eight hours that were completely gone from my life.<sup>11</sup>

William James is more explicit about the cross-gap phenomenal continuity:

We often take ether and have operations performed without a suspicion that our consciousness has suffered a breach. The two ends join each other smoothly over the gap; and only the sight of our wound assures us that we must have been living through a time which for our immediate consciousness was non-existent. Even in sleep this sometimes happens: We think we have had no nap, and it takes the clock to assure us that we are wrong. We thus may live through a real outward time, a time known by the psychologist who studies us, and yet not *feel* the time, or infer it from any inward sign.<sup>12</sup>

In the unconsciousness produced by nitrous oxide and other anaesthetics, in that of epilepsy and fainting, the broken edges of the sentient life may meet and merge over the gap, much as the feelings of space of the opposite margins of the 'blind spot' meet and merge over that objective interruption to the sensitiveness of the eye. Such consciousness as this, whatever it be for the onlooking psychologist, is for itself unbroken. It *feels* unbroken; ...<sup>13</sup>

These reports seem to indicate that the patients experienced *one* phenomenally continuous stream of consciousness, continuing from before to after the anaesthetic treatment. James's claim that 'the broken edges of the sentient life may meet and merge over the gap' looks like a clear case of a report of experienced togetherness across temporal gaps. Furthermore, his claim that consciousness '*feels* unbroken' over the gap indicates that it at least felt like the experiences before the gap was experienced as flowing

<sup>11</sup> Donner (2002, time 1:10:18–1:11:10).

<sup>12</sup> James (1890 / 1981, p. 198).

<sup>13</sup> James (1890 / 1981, p. 231).

into those after the gap. Even if we grant the felt continuity of consciousness to be conceptually distinct from phenomenal continuity, it seems reasonable to take the former as evidence for the later. Of course reports like these are far from conclusive. Although it is reasonable to assign a high degree of warrant to first-person claims of phenomenal continuity in general, the circumstances in which these judgements are made (the reporters are newly awakened, anaesthetized or operated) make them suspect to error. However, any first person reports for or against phenomenal continuity across temporal gaps will suffer in this regard.

At this point one might object that even if we have established that (b) is false and further that there are some actual cases of phenomenal continuity between experiences hour apart, we have not shown that experiences that are interrupted by dreamless sleep are in general phenomenally connected. If these cases of experienced togetherness over temporal gaps are not the norm then (a) is still revisionary after all. Whether the frequency of experiences [p. 294] interrupted by dreamless sleep that are phenomenally connected is as high as it needs to in order for (a) to be non-revisionary is in part an empirical question. The chief aim of the present investigation is to show that the conjunction of (a) and (c) is at least possible. Nevertheless, in light of reports like those above a general hypothesis like the following seems plausible:

An experience produced by a brain *B* has diachronic phenomenal connectedness to the temporally most immediate experiences produced by *B*.

In absence of any reasons to think that the cases in reports like those above are special, it seems reasonable to think that interrupted experiences in other cases behave the same way.

However, a possible candidate for such a reason is that in other cases there is often an abrupt psychological discontinuity between the experiences of falling asleep and waking up. One often cannot remember falling asleep when one wakes up and this one might think rules out phenomenal continuity. At the moment when one wakes up, one usually does not remember what one experienced at the moment one fell asleep and furthermore one's thoughts while waking up do not seem to be a continuation of the thoughts one had as one fell asleep. But, as with physical discontinuities, a psychological discontinuity in thoughts and memories does not imply that there also is a phenomenal discontinuity, since psychological and phenomenal continuity are logically independent. Phenomenal continuity and connectedness are purely experiential relations and do not depend on memories or thoughts. Furthermore, when people wake up from dreams they sometimes cannot remember what

they experienced in the dream. But in the face of this they still feel sure that they have just experienced continuously a transition from the dream. This suggests that the experiences during the dream and the experiences after waking up are parts of the same phenomenally continuous stream of consciousness. Thus, phenomenal continuity does not seem to require that one remembers the previous experience. The facts that there is a period of time during sleep without any experiences phenomenally continuous with the experiences of falling asleep and waking up and that one at the moment one wakes up does not remember the moment one fell asleep, seem therefore to be compatible with the view that the conscious states a person has now are an experiential continuation of those the person had before her last dreamless sleep.

## 2. A wholly experiential approach

In conclusion, the view that that phenomenal continuity is necessary for personal identity can survive the challenge of the bridge problem. The import of this result is due mainly to the support it lends to a view that has been neglected in the literature. A central component of a phenomenal approach to [p. 295] personal identity is Dainton and Bayne's very intuitive 'inseparability thesis' which says that,

self and phenomenal continuity cannot come apart: all the experiences in a single (non-branching) stream of consciousness are co-personal.<sup>14</sup>

This principle conflicts with the psychological-continuity criterion in cases where a man suffers a loss of psychological continuity (due perhaps to an irrecoverable loss of all previous memories and intentions) while still enjoying an uninterrupted non-branching stream of consciousness. If one couples (a) with the inseparability thesis one gets a wholly experiential criterion of identity for conscious persons:

*The Phenomenal-Continuity Criterion:* If a person  $P_1$  is conscious at time  $t_1$  and a person  $P_2$  is conscious at time  $t_2$  then  $P_1$  is identical to  $P_2$  if, and only if, there is (non-branching) phenomenal continuity or connectedness between the conscious states of  $P_1$  at  $t_1$  and the conscious states of  $P_2$  at  $t_2$ .

The criterion has been restricted to identity of *conscious* persons in order to be neutral about whether a person who is conscious at one time can be identical to a person who is not conscious at another time. The criterion

---

<sup>14</sup> Dainton and Bayne (2005, p. 557).

offers hence, a purely phenomenal view of personal identity that is compatible, as have been argued, with the (fairly) plausible idea that persons can survive a night of dreamless sleep.

The psychological-continuity criterion has so far been the major candidate for a criterion of personal identity in terms of a mental continuity. The wholly experiential phenomenal-continuity criterion has been removed from serious consideration due to the bridge problem. But if the phenomenal-continuity criterion is immune to the bridge problem then proponents of the psychological approach need to provide some further arguments for the choice of their preferred continuity over a phenomenal one.

Thanks to Sven Ove Hansson, Jens Johansson, Martin Peterson, and two anonymous referees for *Philosophia*.

## References

- Dainton, Barry (1996) 'Survival and Experience', *Proceedings of the Aristotelian Society* 96:17–36.
- (2004) 'The Self and the Phenomenal', *Ratio* 17 (4): 365–389.
- (2008) *The Phenomenal Self*, Oxford: Oxford University Press.
- Dainton, Barry and Tim Bayne (2005) 'Consciousness as a Guide to Personal Persistence', *Australasian Journal of Philosophy* 83 (4): 549–570.
- Donner, Jörn (2002) 'Ingmar Bergman on Life and Work', supplementary material on *Wild Strawberries*, DVD, The Criterion Collection 139.
- Foster, John (1979) 'In Self-Defence', in G. F. Macdonald, ed., *Perception and Identity*, London: Macmillan.
- James, William (1890 / 1981) *The Principles of Psychology*, vol. 1, Cambridge, MA: Harvard University Press.
- Locke, John (1694 / 1979) *An Essay concerning Human Understanding*, Oxford: Clarendon Press.
- Strawson, Galen (1997) 'The Self', *Journal of Consciousness Studies* 4 (5–6): 405–428.
- (1999) 'The Self and the SESMET', *Journal of Consciousness Studies* 6 (4): 99–135.
- (2009) *Selves*, Oxford: Clarendon Press.