Abstract: On Bow Ties and Cones

In this talk, I will argue against two recent objections against presentism by Savitt (2000) and Costa et al. (2016).

As is well known, presentists have struggles to maintain their position in special relativity's Minkowski spacetime. If the present gets identified with the 'here-now', it is spatially point-like. If, on the other hand, the present gets identified with all and only those events simultaneous with the here-now, it gets relativised to observers.

If both these consequences are deemed undesirable, remaining alternatives are cone presentism (Hinchcliff, 2000), and bow tie presentism (or 'elsewher-ism', as Costa et al. (2016) call it). According to cone presentism, all and only the events on the surface of the past light cone of the here-now are absolutely present. According to bow tie presentism, all and only the events in the bow tie region of the here-now are absolutely present. Both positions construe the present as spatially extended, thereby avoiding the first of the above mentioned consequences. Also, in clinging to spacetime's light cone structure, both construe the present as being absolute, by which they avoid the second of the above mentioned consequences. Among the objections that have been raised against both positions are, in particular, (1) the achronality objection (Savitt, 2000) and the PrePre objection (Costa et al., 2016).

In my talk I will (1) argue (pace Savitt (2000)) that the achronality objection only affects cone presentism but not bow tie presentism; and, (2) argue (pace Costa et al. (2016)) that neither cone presentism nor bow tie presentism are dismissed by the PrePre objection.

In more detail, according to Savitt's 'principle of achronality', no pair of events, both of which are absolutely present for some event e, should be absolutely temporally distinct from each other. As Savitt points out, neither cone presentism nor bow tie presentism fulfil this principle. However, I will argue that only cone presentism is seriously put into question by this. This is because for cone presentism, violation of the principle allows deriving a logical contradiction under a suitable choice of events. To see this, consider an event e1 on the past light cone of e. Under the assumption that e itself is present for e, both e1 and e are present for e according to cone presentism. But, according to special relativity, e1 is absolutely past for e, i.e. e1 absolutely precedes e, so the principle of achronality is violated. Here, violation of the principle implies a logical contradiction: e1 is absolutely past and absolutely present for e. No such contradiction can be derived in the case of bow tie presentism. Take an arbitrary event in the bow tie region of e, which will be absolutely
present for e according to bow tie presentism. No matter which event you take, it can't be absolutely past (or future) for e, because all events in the bow tie region of e are space like separated from e, and so the principle can't be violated this way. Violation of the principle requires considering two events in the bow tie region of e which are either light like or time like separated from each other. Take, for example, an event e2 in the bow tie region of e which casts its light cone such that e1 lies within its past light cone. Then the following statements hold true: both e1 and e2 are absolutely present for e according to bow tie presentism, and e1 is absolutely past for e2, so the principle is violated. But, because e1 is absolutely past for e2, not for e, no logical contradiction arises. To conclude, violation of the principle of achronality is a serious problem for cone presentism. However, without further argumentation, violation of the principle is no serious problem for bow tie presentism, but just an embraced consequence of the view (or so I will argue): the present is not only spatially, but also temporally extended.

The second objection due to Costa, Calosi and Gilmore (2016) argues that both cone presentism and bow tie presentism violate a principle they call 'PrePre'. PrePre states that 'if an event e2 is absolutely present, and if an event e1 absolutely precedes e2, then e1 is past and not absolutely present'. I will first argue that PrePre is underdetermined as it stands, because one might ask: e2 is present for what? Secondly, I will argue that the most plausible completion is this: if an event e2 is absolutely present for e, and if an event e1 absolutely precedes e2, then e1 is past for e2 and not absolutely present for e2. As soon as this completion is made, it becomes transparent that neither cone presentism nor bow tie presentism violate PrePre.

References

