

CAUTION on TERMINOLOGY:

Higher order causation

spatiotemporal mosaic [refs E]

There's more to a

(genuine) process

than its

state-trajectory

Iterated causation

meta-causation, e.g.:

Meta-causation in this work has also been called

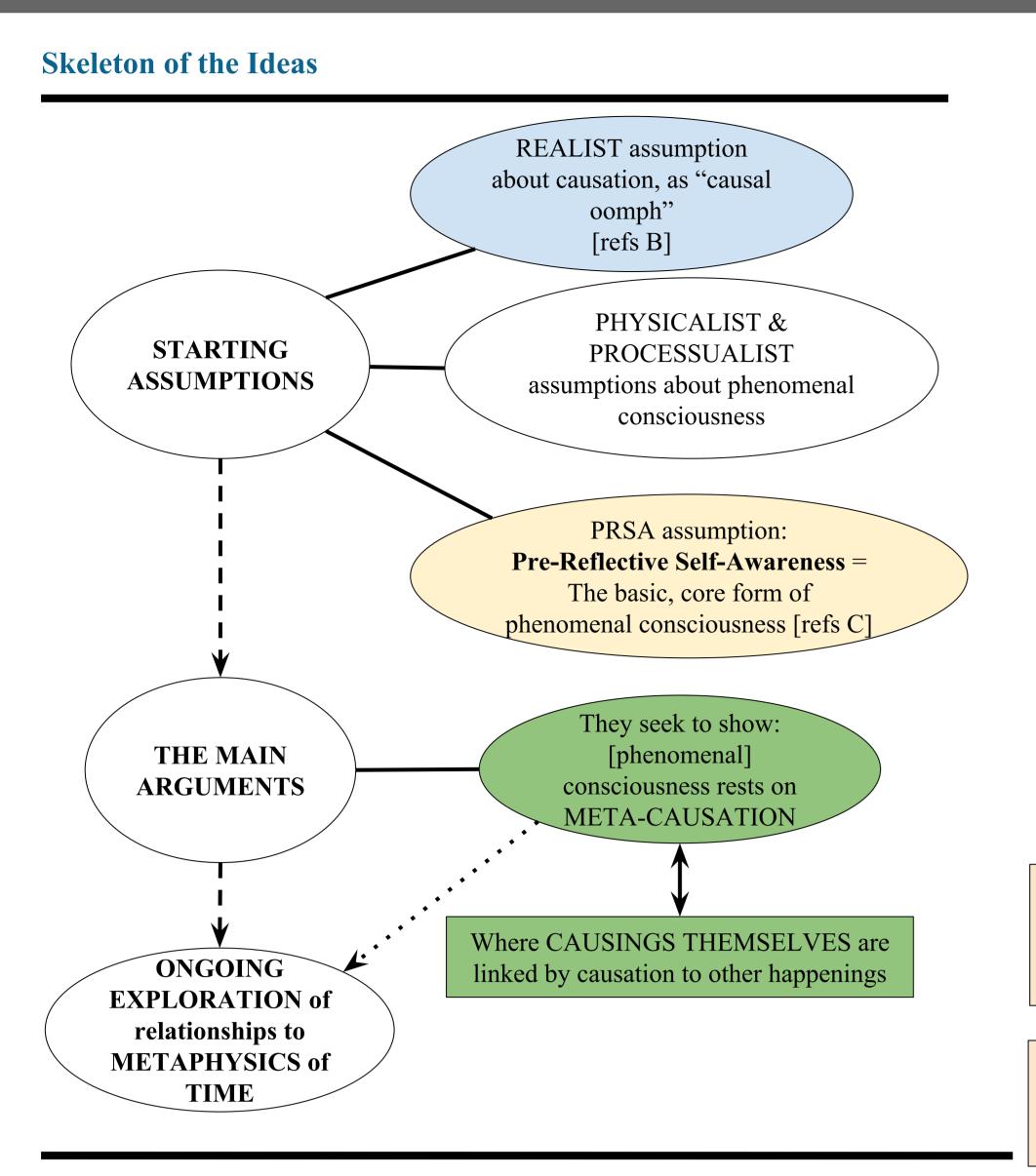
in meta-causal powers [refs F: Ellis]

PHENOMENAL CONSCIOUSNESS, META-CAUSATION AND DEVELOPMENTS CONCERNING CASUAL POWERS & TIME PASSAGE

John Barnden Emeritus Professor of AI, School of Computer Science University of Birmingham, United Kingdom Notes: This poster extends previous work reported in refs A.

For the causal-power aspect, ask me:

not explicit in this poster.



Argument for Reasonableness of Meta-Causation in General as part of the Physical World Causation is itself subject [Assumption] to causal binding just as no reason Causation (oomph) is a real other physical happenings to deny part of the physical world Meta-causation - as physically real as ordinary causation is

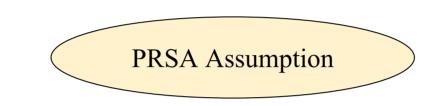
PHYSICALIST and PROCESSUALIST assumptions about phenomenal consciousness

Objective, Realist, Physicalist Assumption

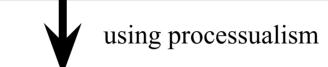
Whether something is accurately, phenomenally conscious is an objective, physical matter - it supervenes on the physical world and is not a construction projected onto the word by people.

Causal-Processualist Assumption

Centrally, being-accurrently-conscious is a property of some [causal] processes, (states, creatures, programs, etc. are conscious only in a derivative sense.)



A basic, minimal core of consciousness is some form of PRE-REFLECTIVE SELF AWARENESS (some non-intellectually/conceptually-mediated form of reflective reactiveness)

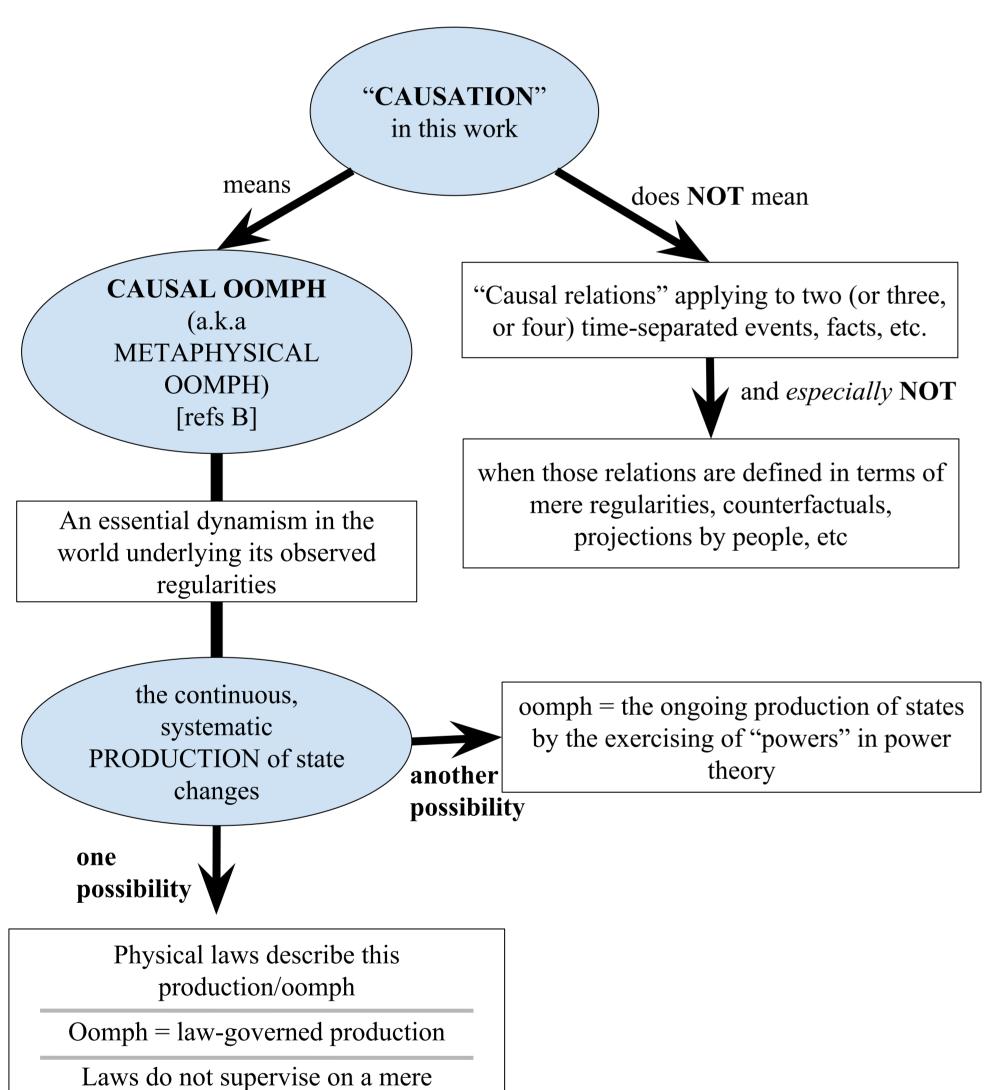


The "self" in the PRSA of conscious process is just that process itself, and can be sub-personal and momentary.

Relationship to Metaphysical

Theories of Time

[refs G]

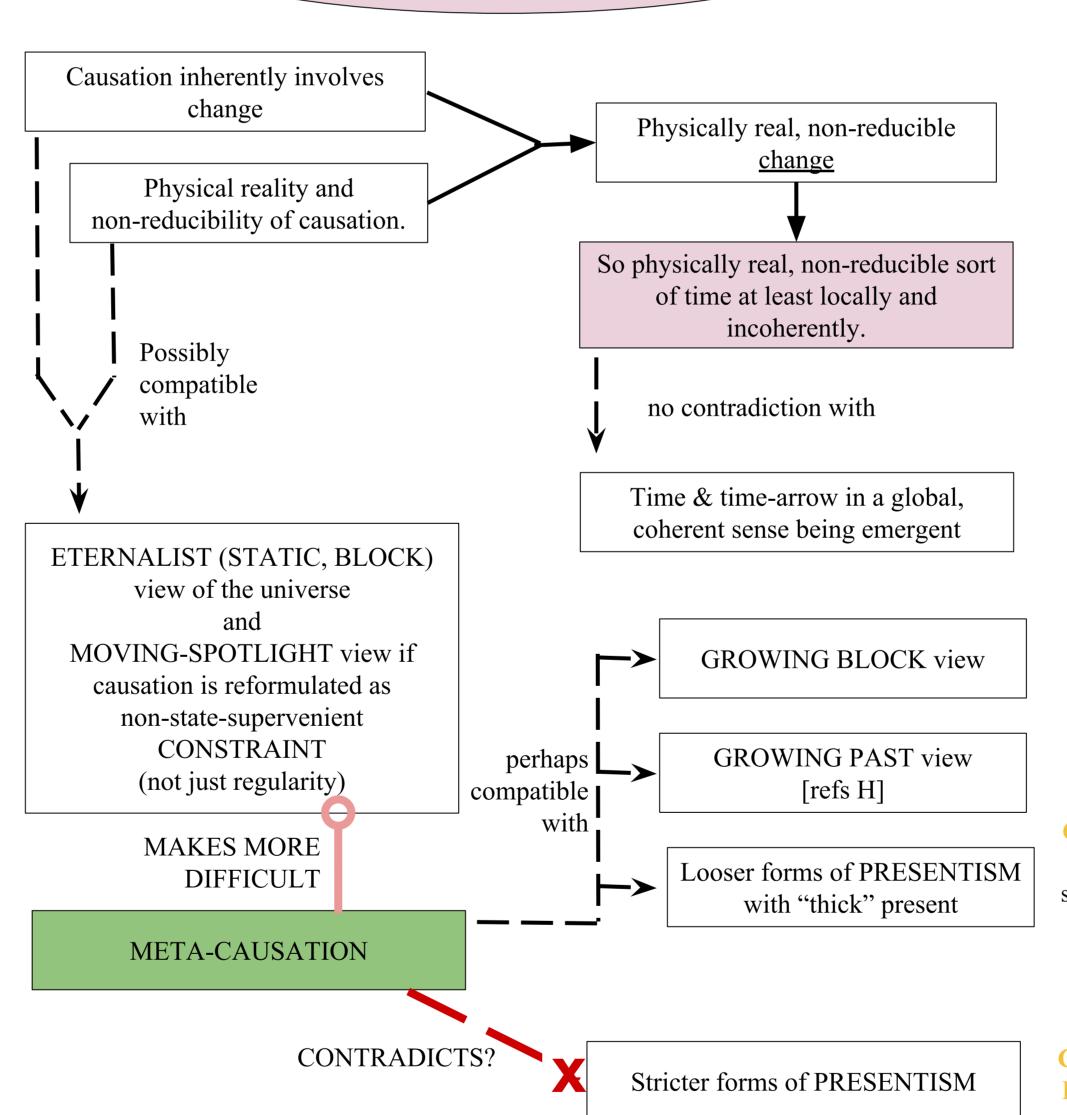


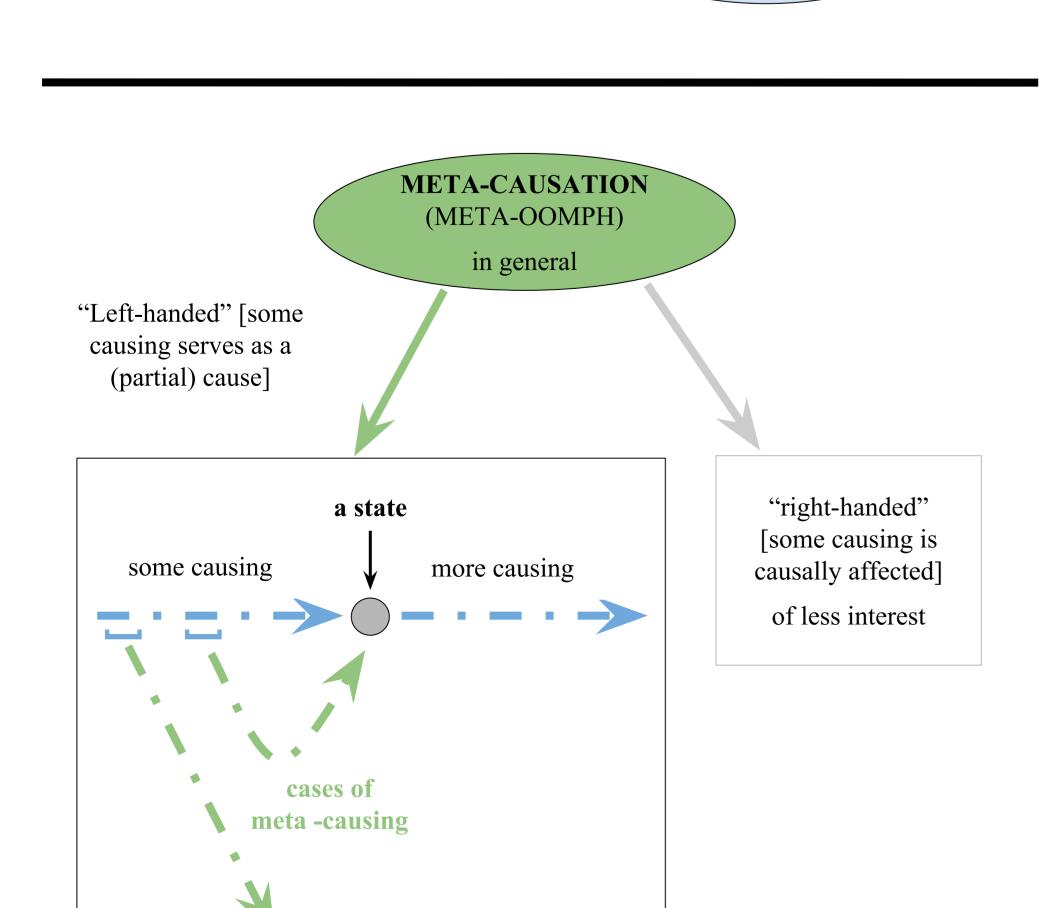
[refs D: Ehring]

[refs D: Koons]

Forms of top-down causation, or setting of parameters of causal models, or as

Meta-causation in this work is *NOT* other things that have been labelled as





The causation (causal

oomph) within the

process is over & above

the mere

state-trajectory

References

Barnden, J.A. (2014). Running into consciousness. *J. Consciousness Studies*, 21 (5–6), pp.33–56.

Barnden, J.A. (2016). Running into consciousness. Poster presentation, 20th Annual Meeting of the Association for the Scientific Study of Consciousness, Buenos Aires, 15–18 June 2016.

[B]:

Demarest, H. (2017). Powerful properties, powerless laws. In [F:] Jacobs (2017), Ch.4. Kutach, D. (2014). *Causation*. Cambridge, UK: Polity Press.

[C:]
Gallagher, S. & Zahavi, D. (2014). Phenomenological approaches to self-consciousness. In Edward N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Spring 2015 Edition), URL = http://plato.stanford.edu/archives/spr2015/entries/self-consciousness-phenomenological/, accessed 8 October 2015. Kriegel, U. (2009). *Subjective consciousness: A self-representational theory*. Oxford, UK: Oxford University Press. Zahavi, D. (2005). *Subjectivity and selfhood: Investigating the first-person perspective*. Cambridge, Mass. and London, UK: MIT Press (a Bradford Book).

For objections to the idea of pre-reflective self-awareness, see e.g.:

Di Francesco, M., Marraffa, M. & Paternoster, A. (2016). The self and its defences: From psychodynamics to cognitive science. London: Palgrave Macmillan.

[D:] Ehring, D. (2009). Causal relata. In H. Beebee, C. Hitchcock & P. Menzies (Eds), *The Oxford Handbook of Causation*. pp.387–413. Oxford, UK: Oxford University Press.

Koons, R.C. (1998). Teleology as higher-order causation: A situation-theoretic account. *Minds and Machines*, 8: 559–585.

[E:] Maudlin, T. (2007). *The metaphysics within physics*. Oxford, UK: Oxford University Press.

[F:]
Ellis, B. (2013). The power of agency. In Groff & Greco (2013), pp.186–206.
Groff, R. & Greco, J. (Eds) (2013). *Powers and capacities in philosophy: the New Aristotelianism.* New York and London: Routledge. Jacobs, J.D. (Ed.) (2017). *Causal powers*. Oxford, UK: Oxford University Press.
Mumford, S. & Anjum, R.L. (2011). *Getting causes from powers*. Oxford, UK: Oxford University Press.

[G:]
Markosian, N., Sullivan, M. & Emery, N. (2016). Time. In E.N. Zalta (ed.), The Stanford Encyclopedia of Philosophy} (Fall 2016 Ed.), URL = https://plato.stanford.edu/archives/fall2016/entries/time/.

Miller, K. (2013). Presentism, eternalism, and the growing block. In H.Dyke & A. Bardon, (Eds), A Companion to the Philosophy of Time, pp. 345–65. Oxford, UK: Wiley-Blackwell.

[H:] Kastner, R.E. (2013). *The Transactional Interpretation of quantum mechanics: the reality of possibility*. Cambridge, UK: Cambridge University Press.

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1st Argument for involvement of META-CAUSATION in CONSCIOUSNESS.

Reasonable additional assumption of Awareness of Own Processuality

The PRSA of a conscious process includes reacting to its own coherent processuality and not just to its own state trajectory.

Overview of the Argument:

- Processuality rests on causation
- So the process reacts to its own <u>causation</u>, directly or indirectly.
- Thus, <u>direct</u> reaction to own causation is META-CAUSATION.

This reaction is itself a causal matter.

- The <u>indirect</u> option has major problems:
 - Presumably involves representing previous states and their causal links.
 Difficult to make this naturalistic & objective.
 - Threatens to violate pre-reflectiveness
- META-CAUSATION → SIMPLER, MORE STRAIGHTFORWARD account.

2nd Argument for involvement of META-CAUSATION in CONSCIOUSNESS.

As a more natural alternative to above Awareness of Own Processuality,

I propose:

Assumption of Awareness of Own PRSA

The PRSA of a conscious process includes awareness of that PRSA itself.

This is reasonable because the "self" in PRSA is the conscious process, and PRSA is essential to the process, so awareness of the self plausibly includes awareness of the PRSA

Overview of the Argument:

- The awareness of own PRSA is a matter of <u>causally</u> reacting to it, and the PRSA is itself crucially <u>causal</u>.
- So we have causal reaction to causation.
- So now we have just a special case of 1st Argument.
- But in an especially demanding form, as the process needs to "single out" the causation underlying self-awareness.

Danger of Infinite Regress:

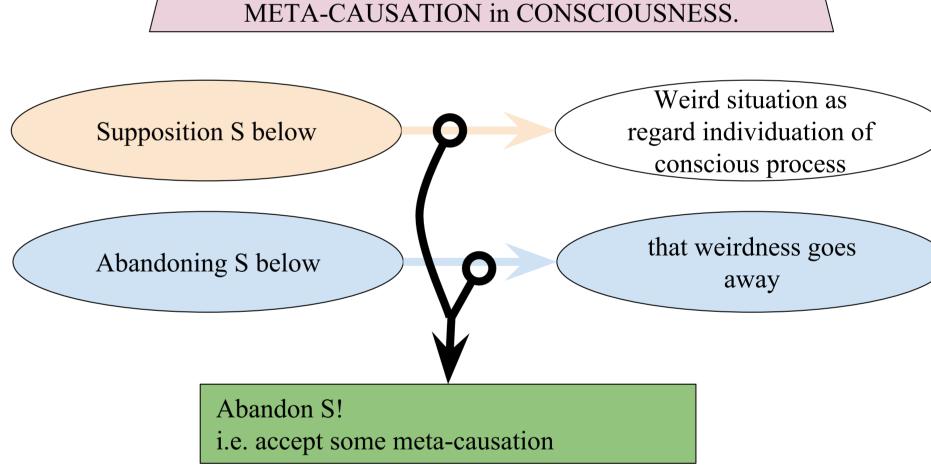
- Have argued that PRSA is partially constituted of <u>meta</u>-causation.
- So awareness of own PRSA involves meta-meta-causation.
- So PRSA is partly constituted of <u>meta-meta</u>-causation.
- And so on up: meta-meta-meta-...

Avoidance of the Regress:

- At each level the process needn't have <u>full</u> awareness of its self-awareness.
- MORE SPECULATIVELY a regress could be prevented by circularity: meta-causation where 'meta' aspect is that it is reacting to <u>itself</u>.

3rd Argument

for involvement of



Supposition S:

The causal self-reacting in PRSA is fully accounted for by causal reaction to own state trajectory with no direct reaction to the causal linking within the trajectory.

Time t₁

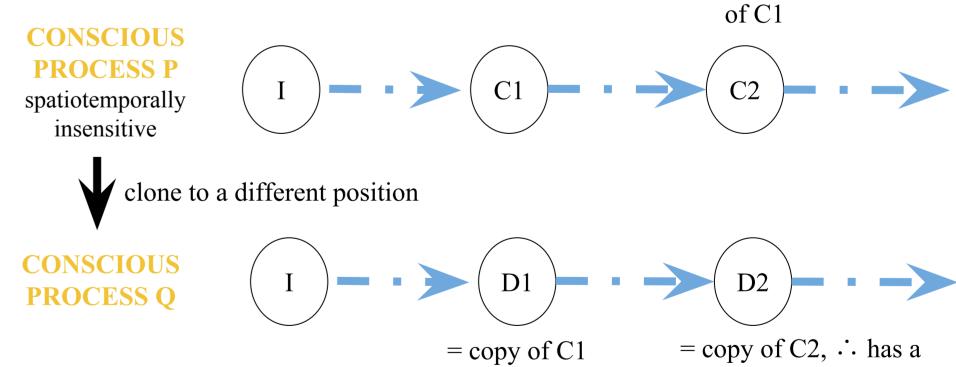
a state

Time t₂

a state with a "record"

"record" of D1 that is a

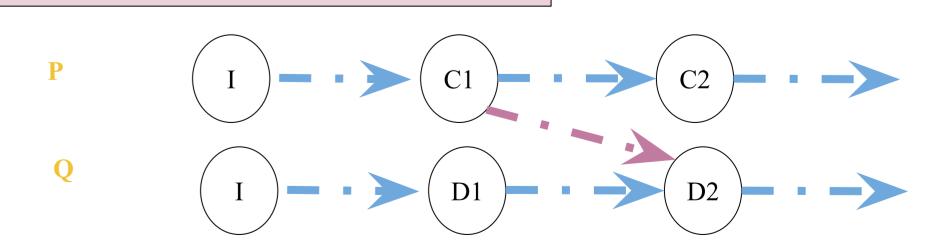
copy of C2's record of C1



Now add a new "diagonal" process:

Time t_o

initial state



The diagonal process is just a moving version of the C1-to-C2 subprocess, and so just "confirms" D2

Argue that now, D2's record of D1 is equally well a record of C1,

HENCE

Weird set of alternatives, such as:

- Q is no longer aware of itself from t₂ onwards, but rather of a larger conscious process that also includes P up to C1, even though from Q's point of view nothing has changed and there was no connection to P before t₂
- Q from t2 onwards has two selves: Q, and a larger process that includes P up to C1.
 There is no objective fact as to what particular conscious process exists
- There is no objective fact as to what particular conscious process exists (contradicting Objectivist assumption above)

