

# Mental Causation

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*Sven Walter*

*Institute of Cognitive Science  
University of Osnabrueck*

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# Non-reductive Physicalism

Mental properties are not identical to but only realized by physical properties.

(1.) Non-identity secures the ontological autonomy of mental properties.

(2.) Realization makes them “physicalistically kosher” and (3.) reconciles their causal efficacy with the causal closure of the physical.



# Realization and Mental Causation

Can the appeal to the realization relation dissolve, all by itself, the problem of mental causation?

- 1.) the failure of "old" theories of realization
- 2.) taking realization ontologically seriously
- 3.) why this supposedly solves the problem of mental causation
- 4.) and why it doesn't

# The Nature of Realization

At the core of the realization idiom is the idea that realization is at least an asymmetric dependence relation between properties:  $P$  realizes  $F$  only if the instantiation of  $P$  in a context  $u$  necessitates the instantiation of  $F$  in  $u$ , but not *vice versa*.



# Realization as Asymmetric Necessitation

However, asymmetric necessitation is not sufficient for realization.

*is human* asymmetrically necessitates *has a lung*, and *is red* asymmetrically necessitates *is spatially extended*, but *is human* and *is red* do not realize *has a lung* and *is spatially extended*.



# Realization as Occupying a Causal Role

A first way to transform asymmetric necessitation into a sufficient condition for realization is based on the functionalist's idea that a functional property is a second-order property, i.e., the property of having a first-order property that occupies an appropriate causal role.

$P$  realizes  $F$  iff  $F$  is individuated by causal role  $r$  and  $r$  is occupied in context  $u$  by an instantiation of  $P$ .



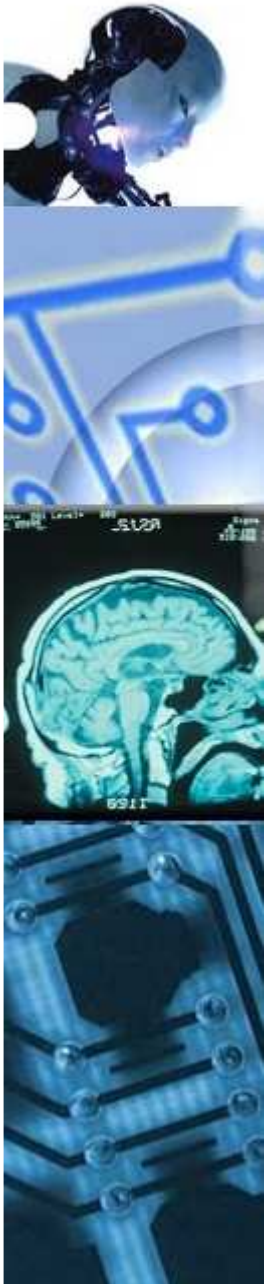
# Realization as Occupying a Causal Role

This secures  $F$ 's ontological autonomy if  $r$  cannot only be occupied by  $P$ , but also by other (physical) properties  $P'_1, \dots, P'_n$ .

The problem, notoriously, is mental causation: the property supposed to occupy the causal role is precisely not the second-order property  $F$ , but its first-order physical realizer  $P$  (cf. Block 1990; Kim 1998; Shoemaker 2001)





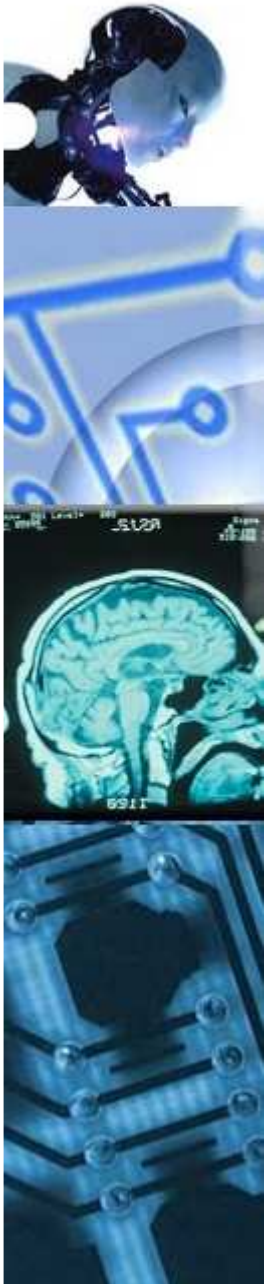


## Realization as Asymmetric Explanatory Dependence

A second way to transform asymmetric necessitation into a sufficient condition for realization is to add that the instantiation of the realizer property must explain the instantiation of the realized property.

$P$  realizes  $F$  iff the instantiation of  $P$  by an object  $o$  in context  $u$  necessitates the instantiation of  $F$  by  $o$  in  $u$ , but not *vice versa*, and the instantiation of  $P$  by  $o$  in  $u$  explains the instantiation of  $F$  by  $o$  in  $u$ .





## Realization as Asymmetric Explanatory Dependence

First, asymmetric explanatory dependence is not sufficient for realization.

*is human* asymmetrically necessitates the property *has a lung*, and that Paul is human explains why he has a lung. But *is human* still does not realize *has a lung* in the sense pertinent to the philosophy of mind.



## Realization as Asymmetric Explanatory Dependence

Second, asymmetric explanatory dependence does not account for the causal efficacy of the property realized.

*is human* asymmetrically necessitates *having a lung* and Paul's being human explains his having a lung, but Paul's life and dignity are protected by law because he is a human being and not because he has a lung.

# The Failure of the Early Accounts

According to both accounts, the realized property  $F$  and its physical realizer  $P$  are ontologically distinct—after all, that is what is supposed to secure the autonomy of the realized property.

However, this distinctness immediately prompts the question “How could  $F$  possibly be causally efficacious if everything that can be attributed to  $F$  in a given context can also be attributed to  $P$ ?”



# The Failure of the Early Accounts

The key dilemma is: In order for mental properties to be autonomous, they must be distinct from their physical realizers, but in order to alleviate the intuition of competition, the two may precisely not be distinct.

Here the idea of realization can unfurl its full ontological potential, and here it can be seen why an ontologically austere approach to realization is unsatisfying.



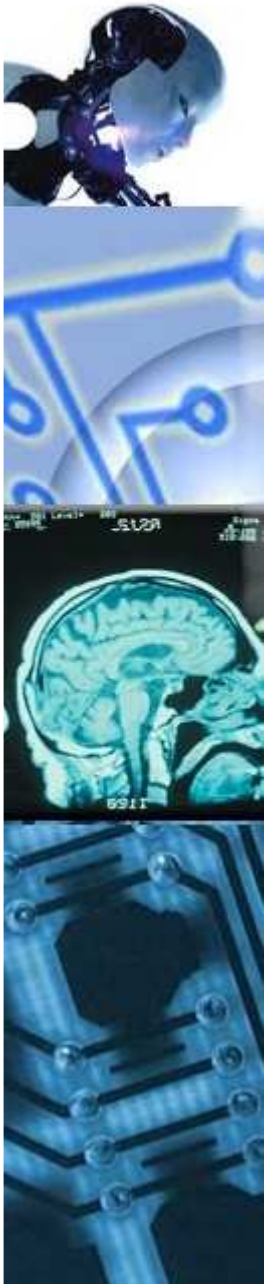
# Taking Realization Seriously

The realization relation must be characterized in such a way that mental properties are ontologically distinct from their realizers, but at the same time tied so closely to them that despite their distinctness the intuition of competition loses its appeal.



# Taking Realization Seriously

Background: a causal theory of properties (Shoemaker 1980, 1998) according to which properties are individuated in terms of causal powers (cf. Kim 1992).







## Realization à la Shoemaker

Sydney Shoemaker and Lenny Clapp demand that in the case of realization, the causal powers individuated of the realized property be a subset of the causal powers individuated of the realizer property.



## Realization à la Shoemaker

“In general, then, property X realizes property Y just in case the conditional powers bestowed by Y are a subset of the conditional powers bestowed by X ...” (Shoemaker 2001, 78)

“*P realizes Q* if and only if (def.), where  $p$  and  $q$  are the sets of powers constituting  $P$  and  $Q$ ,  $q \subset p$ .” (Clapp 2001, 129)



## Realization à la Shoemaker

Realization<sub>S/C</sub>:  $P$  realizes  $F$  iff for all (conditional) causal powers  $c_1, \dots, c_n$  of  $o$ , if the instantiation of  $F$  by an object  $o$  in context  $u$  contributes to  $c_i \in \{c_1, \dots, c_n\}$ , then the instantiation of  $P$  by  $o$  in  $u$  contributes to  $c_i$ , but not (necessarily) *vice versa*.





## Realization à la Pereboom

According to Derk Pereboom (2002), the causal powers individuated of the realized property are constituted by the causal powers individuated of its realizer.

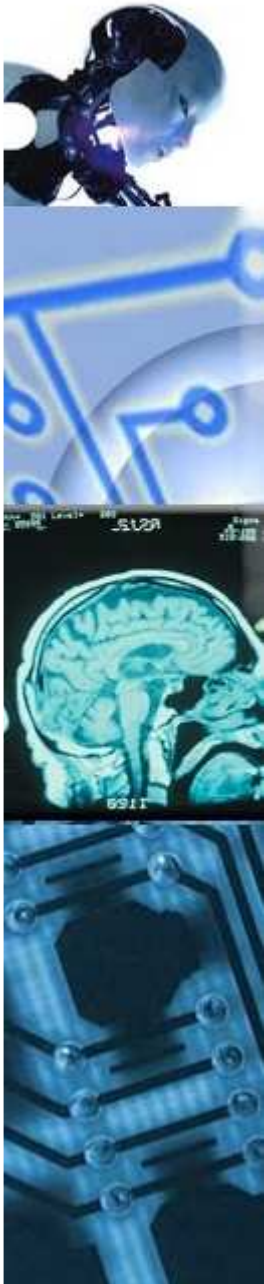
Realization<sub>p</sub>:  $P$  realizes  $F$  only if for any causal power  $c$  of an object  $o$  to which the instantiation of  $F$  by  $o$  in context  $u$  contributes,  $c$  is in  $u$  constituted by the causal powers  $c'_1, \dots, c'_n$  of  $o$ , and the instantiation of  $P$  by  $o$  in  $u$  contributes to  $c'_1, \dots, c'_n$ .



## Realization à la Gillett

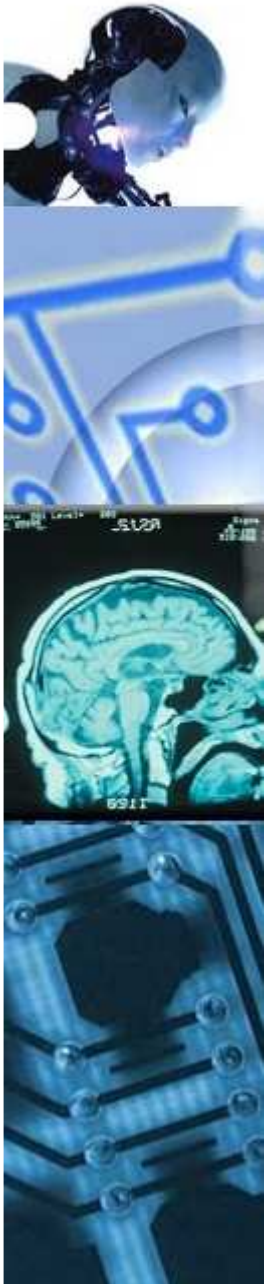
Carl Gillett does not require that the causal powers individuated of a realized property are a subset of, or constituted by the causal powers individuated of its realizers.

For Gillett, it is essential that an object  $s$  has the causal powers individuated of the realized property  $F$  because ('in virtue of')  $s$  or  $s$ 's mereological parts has/have the causal powers individuated of the realizer properties  $P_1, \dots, P_n$ .



## Realization à la Gillett

“Property/relation instance(s)  $F_1$ – $F_n$  realize an instance of a property  $G$ , in an individual  $s$ , *if and only if*  $s$  has powers that are individuating of an instance of  $G$  in virtue of the powers contributed by  $F_1$ – $F_n$  to  $s$  or  $s$ ’s constituent(s), but not vice versa.” (Gillett 2003, 594)



## Realization à la Gillett

Realization<sub>G</sub>: Properties  $P_1, \dots, P_n$  realize property  $F$  iff  $F$  is a property of an object  $o$  individuated in terms of causal powers  $c_1, \dots, c_m$ ,  $P_1, \dots, P_n$  are properties of  $o$  or of the mereological parts  $o_1, \dots, o_k$  of  $o$ , the instantiations of  $P_1, \dots, P_n$  by  $o$  or by  $o_1, \dots, o_k$  in context  $u$  contribute to the causal powers  $c'_1, \dots, c'_k$ , and  $o$  has causal powers  $c_1, \dots, c_m$  individuated of  $F$  because  $o$  or  $o_1, \dots, o_k$  has/have  $c'_1, \dots, c'_k$ .



# Taking Realization Seriously

On the one hand, these accounts they try to show why the realization relation preserves the ontological autonomy of realized properties:

Realized properties cannot be identified with their realizers because they are individuated by different sets of causal powers.





# Taking Realization Seriously

On the other hand, they try to tie a realized property ontologically so closely to its realizer that despite their distinctness the two cannot sensibly be said to compete with each other:

Realizers turn out to be complex properties that contain the realized properties, more or less literally, as constituents, so these properties are not ontologically distinct in a way which would allow the intuition of competition underlying the problem of mental causation to arise.



# Realization and Causal Competition

“[W]e can see how realized properties could make their presence felt causally. Realized properties do not ‘float above’ their realizers in a way that would permit preemption or screening off by the realizers.” (Heil 2003, 20)



# Realization and Causal Competition

[T]he problems forcefully presented by Kim concerning causal and explanatory exclusion of mental properties by physical properties do not arise. ... Just as there is no causal and/or explanatory competition between a whole and its parts, so there is no causal and/or explanatory competition between instances of mental properties and their physical realizers. (Clapp 2001, 133)



# Realization and Causal Competition

Just as Kim claims that no competition ... arises in the case of reduction and identity, I propose that no competition arises in the case of mere constitution ... For if the token of a higher-level causal power is currently wholly constituted by a complex of microphysical causal powers, there are two sets of causal powers at work that are constituted from precisely the same stuff ...  
(Pereboom 2002, 505)



## Some Problems (I)

These accounts presuppose that every property that can plausibly be said to be a realized property can be individuated in terms of causal powers.

Whether (all) mental properties can indeed be individuated in terms of causal powers, however, is a question never raised by the proponents of these accounts.



## Some Problems (II)

In fact it seems as if a significant class of mental properties cannot be so individuated: phenomenal properties.

To the very degree that *being hungry* manifests itself differently in different creatures, it evades a characterization in terms of a set of causal powers had by all and only the creatures that have pain.





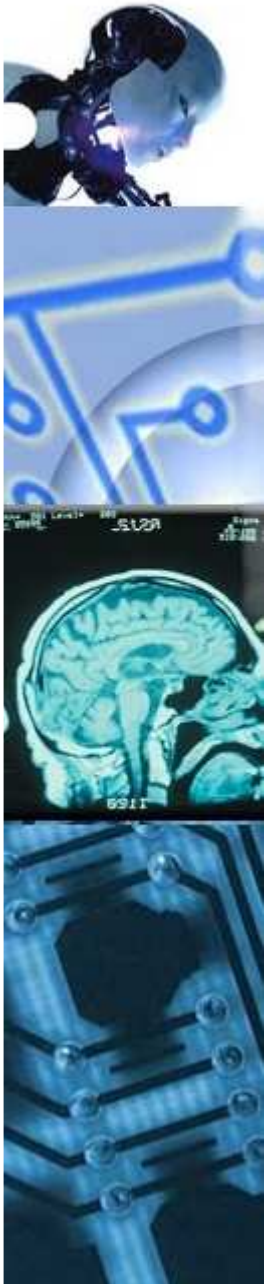
## Some Problems (II)

It is unclear whether the claim that mental properties are realized by physical properties in this sense is compatible with the claim that they are ontologically autonomous.

In what sense are realized properties ontologically autonomous, if they are, in a more or less strict sense, parts of the realizer properties?







## Some Problems (II)

Compare:

(1.) "*a* is burgundy red and red"

and

(2.) "*a* is burgundy red and weighs 1.000 pounds"

The sense in which *a* is both burgundy red *and* red is not the sense in which *a* is both burgundy red *and* weighing 1.000 pounds. Loosely put: *a* has a color and a weight, but it does not have two colors.



## Some Problems (III)

It is doubtful whether the accounts secure the causal efficacy of physically realized mental properties.

Ultimately, the properties responsible for an object's having the causal powers it has are the physical realizers, not the realized properties. Once the physical properties are fixed, the causal nexus of the world is fixed, too. But fixing the realized properties always leaves some causal relations unspecified. This creates the all-important asymmetry in favor of the physical.

## Some Problems (IV)

Finally, it is one thing to show that realized mental properties are not screened off or not preempted by their physical realizers, but it is an entirely different thing to show that mental properties actually are causally efficacious.

It is not that every property is causally efficacious by default and only fails to be causally efficacious if it is screened off by its realizers. Maybe mental properties are not screened off by their realizers, but not causally efficacious either.

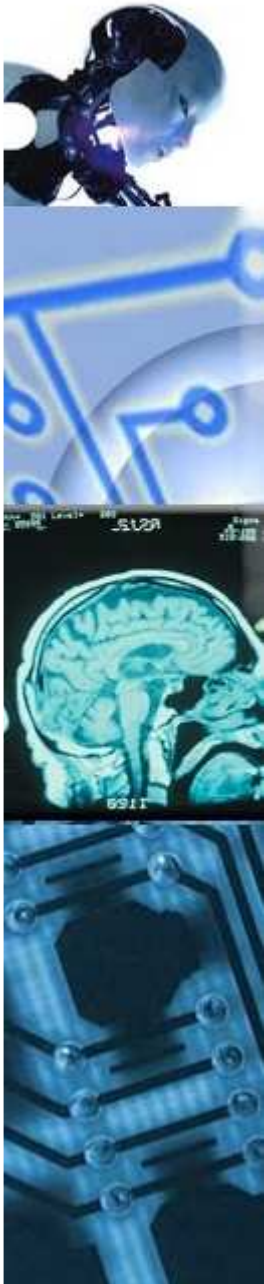


## Some Problems (IV)

It is simply not true that every property that is realized by a causally efficacious property is thereby *ipso facto* itself causally efficacious.

Cf. Kim's idea of 'Causal Inheritance.'

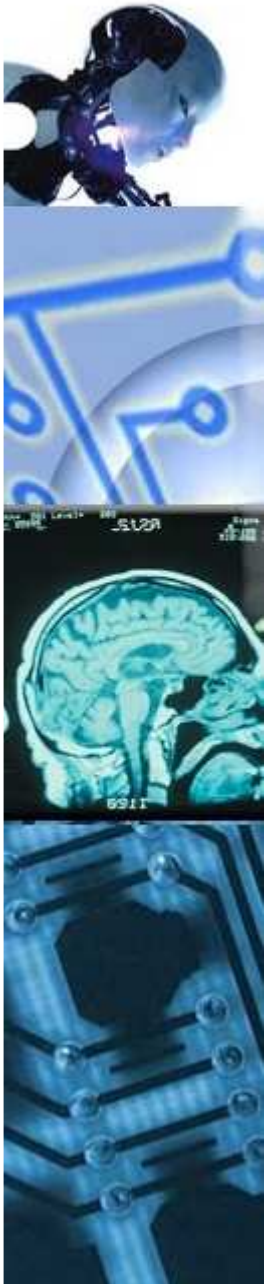




## Some Problems (IV)

The problem is that in some cases, in particular when the possibility of mental causation is at issue, we want both a realized property and its realizer to be causally efficacious, and in that case the idea that the realized property automatically inherits its realizer's causal efficacy seems to do the trick.

In other cases, however, we do *not* want that both the realizer and the property it realizes are causally efficacious, and in those cases an automatic inheritance would be detrimental.



## The Upshot

Taking realization ontologically seriously is undoubtedly important, but one should get rid of the illusion that this alone, all by itself, can cure epiphobia.