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# More Causation

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# Importance of causation

explanation

free choice, moral responsibility

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explanation

The plane crash was caused by bad weather.

free choice, moral responsibility

Whoever caused the damage should pay for it.

	Predicted B	Predicted A and B
Choose B	1,000,000	0
Choose A and B	1,001,000	1,000

Causal decision theory: Choose A and B

Evidential decision theory: Choose B

Knowledge of causes is important?

# Topics

Suggested paper topics on website

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# Russell

“On the notion of a cause”

# Russell

“In the following paper I wish, first, to maintain that the word ‘cause’ is so inextricably bound up with misleading associations as to make its complete extrusion from the philosophical vocabulary desirable...” (171)



# Russell

“The law of causality, I believe, like much that passes muster among philosophers, is a relic of a bygone age, surviving, like the monarchy, only because it is erroneously supposed to do no harm.” (171)

# Russell

Let's look carefully at an argument Russell makes.

A dilemma about cause and effect

# Russell

1. A cause is contiguous with its effect.
2. A cause is not contiguous with its effect.

# Russell

1. A cause is contiguous with its effect.  
There is no stretch or moment of time after a cause ends and its effect begins.
2. A cause is not contiguous with its effect.  
There is a stretch or moment of time after a cause ends and its effect begins.

# Part 1

1. A cause is contiguous with its effect.  
There is no stretch or moment of time after a cause ends and its effect begins.

# Third definition

“Cause and Effect. (1) Cause and effect are correlative terms denoting any two distinguishable things, phases, or aspects of reality, which are so related to each other that whenever the first ceases to exist the second comes into existence immediately after, and whenever the second comes into existence the first has ceased to exist immediately before.”

# A question

Why are we looking in a dictionary?

# Third definition

“Cause and Effect. (1) Cause and effect are correlative terms denoting any two distinguishable **things**, **phases**, or **aspects** of reality, which are so related to each other that whenever the first ceases to exist the second comes into existence immediately after, and whenever the second comes into existence the first has ceased to exist immediately before.”



# Another question: the causal relation

What causes what?

Events? Making a joke caused her to laugh.

People? Jane caused her to laugh.

Omissions? Her failure to call caused him to become unhappy.

Facts? The fact that she failed to call caused him to become unhappy.

# Third definition

“Cause and Effect. (1) Cause and effect are correlative terms denoting any two distinguishable things, phases, or aspects of reality, which are so related to each other that whenever the first ceases to exist the second comes into existence **immediately** after, and whenever the second comes into existence the first has ceased to exist **immediately** before.”

# Part 1

1. A cause is contiguous with its effect.  
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# A great difficulty

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the time series is compact: for every two instants of time, there is another instant which occurs after the first instant and before the second instant.

# A great difficulty

“But a great difficulty is caused by the temporal contiguity of cause and effect which the definition asserts. No two instants are contiguous, since the time series is compact; hence either the cause or the effect or both must, if the definition is correct endure for a finite time.”

# A great difficulty

“But a great difficulty is caused by the temporal contiguity of cause and effect which the definition asserts. No two instants are contiguous, since the time series is compact; hence either the cause or the effect or both must, if the definition is correct, endure for a **finite** time.”

# A dilemma

Suppose a cause is contiguous with its effect.

The cause endures a finite amount of time.

Either the cause involves change within itself or it does not.



# Internal change

If the cause involves change within itself then parts of the cause are causally related to each other, and

“only the later parts can be relevant to the effect, since the earlier parts are not contiguous to the effect, and therefore cannot influence the effect.”

# Internal change

“Thus we shall be led to diminish the duration of the cause without limit, and however much we may diminish it, there will still remain an earlier part which might be altered without altering the effect, so that the true cause, as defined, will not have been reached...”

# A dilemma

Suppose a cause is contiguous with its effect.

The cause endures a finite amount of time.

Either the cause involves change within itself or it does not.

Change → that's not the (true) cause

# No Internal change

If the cause does not involve change within itself then

“it seems strange, too strange to be accepted ... that the cause, after existing placidly for some time, should suddenly explode into the effect, when it might just as well have done so at any earlier time, or have gone on unchanged without producing its effect.”

# A dilemma

Suppose a cause is contiguous with its effect.

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# A dilemma

Suppose a cause is contiguous with its effect.

The cause endures a finite amount of time.

Either the cause involves change within itself or it does not.

Change → that's not the (true) cause

No Change → not acceptable

# Conclusion

“This dilemma, therefore, is fatal to the view that cause and effect can be contiguous in time; if there are causes and effects, they must be separated by a finite time interval  $t...$ ”

# Two possibilities

1. A cause is contiguous with its effect.  
There is no stretch or moment of time after a cause ends and its effect begins.
2. A cause is not contiguous with its effect.  
There is a stretch or moment of time after a cause ends and its effect begins.



## Part 2

“Philosophers, no doubt, think of cause and effect as contiguous in time, but this, for reasons already given, is impossible. Hence, since there are no infinitesimal time-intervals, there must be some finite lapse of time  $t$  between cause and effect. This, however, at once raises insuperable difficulties.”