Preface

• A first stab at the definition of a cause might be of a necessary and sufficient preceding condition. There are difficulties with this, and Mackie will show that a related definition is better. What we implicitly claim when making causal assertions relate to the forms of evidence on which we rely when asserting a causal connection.

1. Singular Causal Statements

• Mackie starts by giving an example of a house fire caused by an electrical short-circuit. Clearly, the short-circuit is neither necessary nor sufficient for the fire, which could have started for other reasons or not started despite the short-circuit.

• Part of the answer why the short-circuit was the cause is that there was a set of (positive and negative) conditions which, combined with the short-circuit, constituted a complex condition which was sufficient (though not necessary) for fire’s occurrence. Things such as nearby flammable material and absence of sprinklers.

• Additionally, the short-circuit was an indispensable part of this complex condition. The other conditions wouldn’t have produced the fire on their own.

• Hence, the cause is known to be an Insufficient but Necessary part of a condition which is itself Unnecessary but Sufficient. Mackie calls this the INUS condition.

• We can tell this is the right account by thinking how someone would diagnose the cause of the event, or how this diagnosis might be challenged. Experts will have determined the course of the fire, that no other condition sufficient for the fire occurred, but that the short-circuit did, and that other conditions sufficient for the fire’s eruption and subsequent course were present. We assume that there was some necessary and sufficient condition for the fire, and anyone wanting to deny the expert’s conclusion would have to challenge one of the above points.

• Mackie now defines the INUS condition formally. The conjunction AB¬C is a minimal sufficient condition for the fire (containing no redundant factors), if A is the INUS condition (in this case the short-circuit) and B and ¬C stand for other conditions, positive and negative, needed along with A to form a sufficient condition for the fire.

• On the presumption that there is a necessary and sufficient condition for the fire, then the disjunction of all the minimal sufficient conditions ((AB¬C) v (D¬EF) v (¬G¬HI) v ... ) is it.

• To simplify matters, Mackie replaces B¬C by X and all the other disjuncts by Y, so that the INUS condition reduces to:

  A is an INUS condition of a result P iff for some X and Y, (AX v Y) is a necessary and sufficient condition of P, but neither A nor X is a sufficient condition of P.

• Mackie prefers to abbreviate matters further, leaving the provisos understood, so that:

  A is an INUS condition of P when (A …or …) is a necessary and sufficient condition that P.

• Mackie now has a long clarificatory passage added at the request of the referees.
Other Sections:-

2. Difficulties and Refinements

3. General Causal Statements

4. Necessity and Sufficiency

5-7. Omitted from the Reading

8. The Direction of Causation

9. Conclusions

Questions & Answers

1. What does Mackie mean by a “singular causal statements” and by a “general causal statement”? Think of some examples of each. Are there examples of causal statements that it is difficult to put in one category or the other?

Mackie’s definitions are technical, and even these he claims not to capture all the sense of cause. Singular: (a) INUS (in the appropriate causal field), (b) the cause was present, (c) the relevant accompanying factors were present, (d) other potential causes were absent. Generalises “general” from “singular”. Examples easy (one-offs versus general laws – that brick caused that window to break versus bricks thrown at windows cause them to break). Vague examples?

2. What is wrong with saying that c causes e iff c precedes e and the occurrence of c is necessary and sufficient for the occurrence of e? Give counterexamples (BOTH (a) examples where c precedes e and is necessary and sufficient for the occurrence of e but is not e’s cause AND (b) examples where c is e’s cause but either it does not precede e or c is not necessary and sufficient for e’s occurrence).

Best to explain by counter-examples that this definition doesn’t capture what we men by cause. Need to know what we mean by necessity and sufficiency. Mackie defines these as: S is necessary for T iff all T are S, and is sufficient for S iff all S are T.

(a) There can be events that are the necessary and sufficient causes of two other events, one prior to the other. Eg. the sun rising causes birds to start chirping before the air gets warm, but the birds’ chirping isn’t the cause of the air’s warming up (this example doesn’t quite work, because other things can wake the birds up).
(b) An electrical short-circuit is neither necessary nor sufficient for a fire, which could have started for other reasons or not started despite the short-circuit. Despite this, it may be the cause.

3. **What does Mackie mean by an INUS condition? Try to get the idea across in your own words.**

A cause is known to be an **Insufficient** but **Necessary** part of a condition which is itself **Unnecessary** but **Sufficient**. An INUS condition is one of many states of affairs or events which, together with relevant background conditions (without which it is **Insufficient**), forms a complex condition which is **Sufficient** to cause a particular event. But, this complex condition, in which the INUS condition is a **Necessary** (ie. non-redundant) part, is itself **Unnecessary**, because other complex conditions could also (have been) the cause of the event. Complex conditions can turn out to be necessary *post factum*, when it’s found out that the other states of affairs that could have acted as causes weren’t present.

4. **What does Mackie mean by a “causal field”? Try to get the idea across in your own words.**

Similar to sample space in probability. The domain of interest. Smoking causes cancer: in what? – human beings (or beagles). This is important because …

5. **What considerations does Mackie think we need to take account of in answering the “difficult question” of what distinguishes A causing P from P causing A?**

The problem is linked to that of the direction of time. Causal priority not to be confused with temporal priority.