
Causality Discussion

CS 851 Forensic Software Engineering
University of Virginia

18 November 2002

by
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OED / AHD: cause, n.

OED 1. That which produces an effect; that which gives rise to any action, phenomenon, or condition. *Cause* and *effect* are correlative terms.

c1315 SHOREHAM 117 Cause of alle thyse dignyte+Was Godes owene grace.1398 TREVISA *Barrh. De P.R.* ix. xxv. (1495) 362 The cause of nyghte is shadowe of the erthe that is bytwene vs and the sonne. c1400 *Test. Love* ii. (1560) 285/2 Every cause of a cause is cause of thing caused.1549 *Compl. Scot.* (1801) 234 The philosophour sais that the cause of ane thing is of mair efficacite nor is the thyng that procedis fra the cause.1639 ROUSE *Heav. Univ.* x. (1702) 143 To produce effects beyond the cause; which is indeed to make something out of nothing.1697 DRYDEN *Virg. Georg.* iv. 570 Proteus only knows The secret Cause, and Cure of all thy Woes.1751 JOHNSON *Rambd.* No. 141 The greatest events may be often traced back to slender causes.1827 POLLOCK *Course of T.* v. These were the occasion, not the cause, of joy.1879 LOCKYER *Elem. Astron.* iii. 83 The Sun's heat and the Earth's rotation are, in the main, the causes of all atmospheric disturbances.

AHD 1. The producer of an effect, result, or consequence. The one, such as a person, an event, or a condition, that is responsible for an action or a result.

C causes E?

C causes E ≡



C produces E ≡

C brings forth E ≡

C yields E

OED: cause, n.

b. as philosophically defined

1656 tr. *Hobbes' Elem. Philos.* ii. ix. (1839) 121 A cause simply, or an entire cause, is the aggregate of all the accidents both of the agents how many soever they be, and of the patient, put together; which when they are all supposed to be present, it cannot be understood but that the effect is produced at the same instant. **c1790** REID *Wks.* I. 76/1 We have no ground to ascribe efficiency to natural causes, or even necessary connection with the effect. But we still call them causes, including nothing under the name but priority and constant conjunction. *Ibid.* 77/1 In the strict philosophical sense, I take a cause to be that which has the relation to the effect which I have to my voluntary and deliberate actions. **1846** MILL *Logic* (1856) iii. v. §5 We may define the cause of a phenomenon, to be the antecedent or the concurrence of antecedents, on which it is invariably and unconditionally consequent. **1870** JEVONS *Elem. Logic* xxviii. 239 By the Cause of an event we mean the circumstances which must have preceded in order that the event should happen.

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Thus C causes E if ...

1. C precedes E in time
and
 2. C is necessary for E (without C, no E)
and
 3. C is sufficient for E (with C, definitely E)
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