

Philosophy 103: Introduction to Logic

Logic Exercise: Diagramming, Level I

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Directions: Circle the argument indicators in the following passages and diagram the structure of the arguments in those passages using the numbered statements provided.

- (1) No one has directly observed a chemical bond, (2) so scientists who try to envision such bonds must rely on experimental clues and their own imaginations.¹



Figure 1: Indicator(s): so.

- (1) Looking *up* at a painting is different from simply looking *at* a painting, (2) for there is an element of awe in the experience of looking at what is above us, particularly when it is at considerable height.²



Figure 2: Indicator(s): for.

¹“Stretching Conceptions of Chemical Bonds,” *Science News*, (2 Feb. 1991) 69.

²Horst de la Croix and Richard G. Tansey, *Gardner’s Art Through the Ages*, 6th ed. (New York: Harcourt Brace, 1975), 596.

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3. (1) Since chick embryos support human-cell growth and can be monitored through a window cut into their shells, (2) they are frequently used for studying cancers that grow in people.³



Figure 3: Indicator(s): since.

4. (1) And so accept everything which happens, even if it seem disagreeable, (2) because it leads to this, to the health of the universe and to the prosperity and felicity of Zeus.⁴



Figure 4: Indicator(s): so, because. ‘‘And’’ probably links with a previous argument.

5. (1) For there was a never proud man thought so absurdly well of himself, as the lover doth of the person loved; (2) and therefore it was well said, That it is impossible to love, and to be wise.⁵



Figure 5: Indicator(s): for; therefore.

³C. Brownlee, ‘‘Not to Your Health.’’ *Science News* 167.3 (2005), 37.

⁴Marcus Aurelius, *Meditations*, Book V.

⁵Francis Bacon, *Essays*, ‘‘Of Love.’’

6. (1) Mystery is delightful, but unscientific, (2) since it depends upon ignorance.⁶



Figure 6: Indicator(s): since.

7. (1) Modern literary history arose in close connexion with the Romantic movement, which could subvert the critical system of Neo-Classicism only with the relativist argument that different times required different standards. (2) Thus the emphasis shifted from the literature to its historical background, which was used to justify the new values ascribed to old literature.⁷



Figure 7: Indicator(s): thus.

8. (1) For any kind of reading I think better than leaving a blank still a blank, (2) because the mind must receive a degree of enlargement and obtain a little strength by a slight exertion of its thinking powers.⁸



Figure 8: Indicator(s): because. ‘‘For’’ is a preposition.

⁶Bertrand Russell, *The Analysis of Mind* (London: Routledge, 1989), 40.

⁷René Wellek and Austin Warren, *Theory of Literature*, 3rd. ed. (New York: Harcourt, Brace, 1956), 139.

⁸Adapted from Mary Wollstonecraft, *Vindication of the Rights of Woman*, 1792 (London: T. Fisher Unwin, 1891), 273.

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9. (1) [D]ay could not be called the cause of night, (2) because it would not be followed by night if the earth's rotation were to cease.⁹



Figure 9: Indicator(s): because.

10. (1) The graphical method for solving a system of equations is an approximation, (2) since reading the point of intersection depends on the accuracy with which the lines are drawn and on the ability to interpret the coordinates of the point.¹⁰



Figure 10: Indicator(s): since.

11. (1) [I]nasmuch as most of the usages and orders of the universities were derived from more obscure times, (2) it is the more requisite they be re-examined.¹¹



Figure 11: Indicator(s): inasmuch as.

⁹Adapted from Bertrand Russell, *The Analysis of Mind* (London: Routledge, 1989), 74.

¹⁰Karl J. Smith and Patrick J. Boyle, *Intermediate Algebra for College Students* (New York: Brooks, 1989).

¹¹Francis Bacon, *The Advancement of Learning* "Second Book To the King," 12.

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12. (1) If you speak any lines, or do anything, mechanically, without fully realizing who you are, where you came from, and what you will do when you get there, you will be acting without imagination. (2) Therefore: Every movement you make on the stage, every word you speak, is the result of the right life of your imagination.¹²



Figure 12: Indicator(s): **therefore.**

13. (1) The very spirit of education is to help a student to realize his own potentialities, to let him discover what he really can do, not as imitation, not in response to command, nor because it has been charted for him, but (2) because he has acquired a new view of himself and his capacity.¹³



Figure 13: Indicator(s): **because.**

14. (1) Since either accent or duration by itself can produce rhythm, (2) it is axiomatic that both may be combined to produce rhythm.¹⁴



Figure 14: Indicator(s): **since.**

¹²Adapted from Constantin Stanislavski, *An Actor Prepares* (New York: Theatre Arts, 1948), 67.

¹³Peter Loewenberg, *Decoding the Past: The Psychohistorical Approach* (New York: Knopf, 1983), 57.

¹⁴Hugh M. Miller, *Introduction to Music* (New York: Barnes & Noble, 1958), 18.

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15. (1) Microbes can acclimatize themselves to such substances as sulphonamides and antibiotics if they encounter them in small doses. (2) Therefore, when using these drugs in practice, it is important to give as massive a dose as the patient will tolerate right at the start.¹⁵



Figure 15: Indicator(s): `therefore.`

16. (1) Everything which is in any way beautiful is beautiful in itself, and terminates in itself, not having praise as part of itself. (2) Neither worse then nor better is a thing made by being praised.¹⁶



Figure 16: Indicator(s): `then.` ‘‘Then’’ is not part of a conditional.

17. (1) Footprints left in volcanic ash (not rock) that fell in central Mexico’s Valsequillo Basin about 40,000 years ago (2) suggest that humans have inhabited the Americas far longer than previously confirmed.¹⁷



Figure 17: Indicator(s): `suggest that.`

¹⁵Adapted from John Postgate, *Microbes and Man* 3rd. ed. (Cambridge: Cambridge University Press, 1992), 89-90.

¹⁶Marcus Aurelius, *The Meditations*, trans. George Long (New York: Sterling: 2006), Book IV.

¹⁷Sid Perkins, ‘‘Footprints in Ash Date Humans in Americas,’’ *Science News* (5 July 2008), 8.

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18. (1) This is the heart of Plato’s Theory of Ideas (or Forms), the metaphysical doctrine that reality consists of ideas or forms that exist eternally in the soul pervading the universe—God—while material objects are transient and illusory. (2) Plato is thus an Idealist, not in the sense of one with high ideals but of one who advocates the superiority of ideas to material objects.¹⁸



Figure 18: Indicator(s): thus.

19. (1) [E]very state of welfare, every feeling of satisfaction, is negative in its character; that is to say, it consists in freedom from pain, which is the positive element of existence. (2) It follows, therefore, that the happiness of any given life is to be measured, not by its joys and pleasures, but by the extent to which it has been free from suffering—from positive evil.¹⁹



Figure 19: Indicator(s): it follows; therefore.

¹⁸Morton Hunt, *The Story of Psychology*(New York: Doubleday, 1993), 24.

¹⁹Arthur, Schopenhauer, “On the Sufferings of the World.”

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20. (1) [T]he spirit of man, being of an equal and uniform substance, doth usually suppose and feign in nature a greater equality and uniformity than is in truth. (2) Hence it cometh that the mathematicians cannot satisfy themselves except they reduce the motions of the celestial bodies to perfect circles, rejecting spiral lines, and labouring to be discharged of eccentrics.²⁰



Figure 20: Indicator(s): hence.

²⁰Francis Bacon, *The Advancement of Learning* XIV, 9.