

NOTES.

Notes to Introduction.

1. Snow, 1964. (The original lecture, "The Two Cultures and the Scientific Revolution", was delivered in 1959.)

2. The initial year of publication was 1962, but I have used the second edition [Kuhn, 1970a]. I have seen it claimed, and the claim does not seem wildly exaggerated, that this has been the most influential academic book of the past 25 years. The reader need not fear, however, that this will be yet another thesis on Kuhn.

3. Kuhn, 1970a p.187.

4. C.f. Harris, 1981 p.45.

5. C.f. Kuhn, 1970a p.182.

6. 1975.

7. 1980.

8. C.f. Rorty [1982 p.xlii]. Though arguing in favour of a strong form of relativism (he prefers to say "pragmatism"), Rorty here [1982 Introduction §5] shows himself admirably sensitive to the misgivings of anti-relativists, and does not attempt to deny the seriousness of the problems it raises.

9. C.f. Rorty, 1982 p.xxxix.

10. It seems to me to be true that cognitive relativism is, in a sense, self refuting. But to say this is probably to miss the point [see Krausz & Meiland, 1982 pp.30-33].

11. Kuhn, 1970a p.44n.

12. Polanyi's major work is **Personal Knowledge** [1958].

13. Polanyi, 1964 pp.9-10.

14. Kuhn, 1970a p.101f..

15. Kuhn, 1970a p.149.

16. E.g. Feyerabend, 1970.

17. Kuhn, 1970b.

18. Hacking [1983 p.67] says that: "The new philosophical use of the word 'incommensurable' is the product of conversations between Paul Feyerabend and Thomas Kuhn on Berkeley's Telegraph Avenue around 1960." (C.f.

Feyerabend [1970 p.197], Kuhn [1970a p.xii].)

19. E.g. Feyerabend, 1970, 1975.
20. 1982 p.xx.
21. Polanyi, 1964 p.35-6. (Original publication 1946.)
22. Polanyi, 1964 p.14.
23. Kuhn, 1970a p.vi; Polanyi, 1958 p.vii, 1941, 1959 p.102, 1963, 1964 pp.10,24.
24. Hanson, 1958 pp.179n,180-181n.
25. See Mandelbaum, 1977.
26. See Luchins & Luchins, 1978 p.10.
27. See Bruner, 1983 p.85.
28. 1970a.
29. Bruner & Postman, 1949.
30. 1954 chap.IV. (Translated from the 2nd French edition of 1914.)
31. 1920.
32. 1963.
33. Although by no means all the theories cast in this form ever get implemented as running programs. We will have much more to say about computational models of mind in part II, especially chapter II.C.
34. C.f. Wittgenstein, 1960 p.5.
35. 1981.
36. A good clutch of such examples is given by Shepard [1978a,b].
37. The German is "innere scheinbilder" - literally "inner light-pictures".
38. Hertz, 1894 p.1.
39. 1984.
40. Van't Hoff, 1878. Much of Kolbe's very intemperate attack is quoted therein.
41. See § I.B.1 below.
42. Haller, 1982 p.31.

43. Miller, 1978, 1984.
44. Einstein, quoted in Hadamard, 1945 pp.142-3. See also Holton [1971].
45. Deutsch, in Tweney, Doherty & Mynatt [1981 p.355] (original, 1959).
46. Deutsch, in Tweney, Doherty & Mynatt [1981 p.360] (original, 1959).
47. 1978 pp.36-8.
48. Nye, 1972 p.65.
49. Against this, we should take note that Francis Galton [1880, 1883] found that scientists tended to have particularly poor imagery, some even claiming to experience none at all. A somewhat more recent study by Anne Roe [1951] found a considerably greater proportion of scientists who claimed to have, and to make 'professional' use of, imagery, but this was by no means universal amongst her sample. In §I.B.2 and chapter II.D below I shall try to show how these findings can be accommodated.
50. See, e.g., Shelley, 1821.
51. C.f. Roszak, 1972 p.286.
52. Popper, 1976 p.195.
53. Rees, 1971.
54. **De Memoria et Reminiscentia** 450a. In contrast to the imaginative function, this notion of perception does not begin with Aristotle. It can be found in Plato, and something very like it seems to have been suggested by Democritus (see §II.A.2 below).
55. 1983 chap.6.
56. 1983 p.120.
57. 1983 p.120.
58. See Kosslyn, 1980.
59. See Fodor, 1975.
60. E.g. 1973, 1978, 1981.
61. The term comes from Fodor [1975].
62. 1975; and c.f. Hooker, 1975.
63. E.g. 1975. See Ravetz, 1984.

64. 1976a, 1978a.

65. 1966, 1967, 1979.

66. See Anderson [1978, 1979]; Palmer [1978].

Notes to §I.A.1.

1. Beare, 1906 pp. 213-15.

2. 184-186. All references to and quotes from Plato's works, unless otherwise indicated, are based on the translations collected in Hamilton & Cairns [1963].

3. *Theatetus* 185c.

4. 185c.

5. Plato, *Theatetus* 186e-187a.

6. Plato, *Theatetus* 184e.

7. Beare, 1906 p.215.

8. *De Anima* 428a. All references to and quotes from Aristotle's works, unless otherwise indicated, are based on the Oxford collected edition of translations edited by Ross & Smith [1955].

9. *De Anima* 427b (my emphasis).

10. *De Anima* 418a.

11. The Scholastics' Latin phrase is often used, and helps to avoid confusion with the quite different meaning of "common sense" in modern idiomatic English. The transliterated Greek is "*koine aisthesis*".

12. The translation of "*phantasia*" as "imagination" is, of course, open to question. But it has recently been defended by Schofield [1978].

13. Sometimes translated by Beare as "presentations" - or we might today like "representations". And Lycos [1964] prefers "appearances". But the more usual "images" and "imagination", as we shall see in §I.A.2 and §II.A.2 are thoroughly appropriate renderings.

14. *De Somniis* 459a.

15. See Nussbaum, 1978 pp.234-5.

16. See Kosman, 1975; Hamlyn, 1968a.

17. E.g. Allan, 1970 p.52.