30. Palmer, 1975 p.285.

31. It is interesting to note that Palmer [1977 p.442] associates his views on 'propositional' visual representation with von Ehrenfels' **Gestaltqualität** psychology.

32. Baylor, 1972 p.104.

33. Baylor, 1972 p.104n.

34. To deal with the Block Visualization Tests Baylor's representation must in fact deal with surface colours. However, he can get away with merely specifying each face as having properties **red**, **blue** or **unpainted**. A real mental image would, or at least **could**, display quite specific shades.

35. 1978; Marr,1982 chap.5; see also Roth & Frisby, 1986 chap.III.4.

36. Marr & Nishihara, 1978 p.286f; Marr, 1982 p.318f. I myself find this a highly implausible account of object recognition, but Marr's work is widely admired.

37. Pinker, 1980; Pinker & Finke, 1980; Keenan & Moore, 1979; Keenan, 1983; Nigro & Neisser, 1983 - however, see Neisser & Kerr, 1973; Kerr & Neisser, 1983. In fact Marr & Nishihara believe that it is right and proper that representational formats should be task specific [1978 p.292], and Marr's overall theory of vision [Marr, 1982; Roth & Frisby, 1986 part III] involves other representational formats, at more peripheral processing stages, which **are** "viewer centred". Marr's visual theory is probably thus more conformable with a quasi-pictorial than a 'descriptional' or 'propositional' theory of imagery as this is usually understood. But there may be problems even there [c.f. Kosslyn, 1980 p.464].

38. See e.g. Dewdney, 1986.

Notes to §I.C.3.

1. A major virtue of applying computer simulation to psychology is often said to be that it can eliminate superficially plausible but actually unworkable theories. Whether it has actually ever done this is more dubious. Failures to simulate some theory can always be blamed on lack of ingenuity in the programmer. The whole A.I. project is, after all, built on the faith that we will one day discover how to simulate psychological processes which we cannot see how to simulate at present.

2. 1977.

3. See Palmer, 1978 p.299.

4. See §I.C.2.

5. Fodor, 1975.

6. Anderson & Bower, 1973. Pylyshyn's [1973] critique of mental imagery, which is largely directed at Paivio, and which is also written from a computational viewpoint, appeared early the same year. However, Pylyshyn is concerned with criticizing the concept of imagery in general. He is not specifically concerned with explaining away its apparent effects in verbal memory.

7. See §I.C.2 above.

8. Anderson & Bower, 1973 p.456.

9. See e.g. Bower, 1970.

10. 1970.

11. Anderson & Bower, 1973 p.458.

12. 1972.

13. See Richardson, 1980 §7.3; Peterson & McGee, 1974.

14. 1968.

15. 1973 p.458.

16. See Richardson, 1980 §7.2.

17. 1980.

18. Richardson, 1980 p.99. C.f. Paivio, 1983a pp.314-15.

19. 1985.

20. Paivio, 1983 p.314.

21. §I.B.2.

22. Richardson, 1980.

23. Richardson, 1980 chap.4.

24. Richardson, 1980 chap.5 also p.144.

25. Richardson, 1980 chaps. 6,7,8.

26. Richardson, 1980 §3.5.

27. Richardson, 1980 p.40.

28. Fodor, 1975 p.191.

29. Fodor, 1981a pp.31, 224. Richardson does not even seem to consider the problem.

30. We have already noted this in chap.II.B - but see particularly Fodor [1975 p.189] where he comes remarkably close to a theory like Kosslyn's.

31. 1734. Perhaps this was not Berkeley's intention, but it is how his argument has been used - see Schlick [1925].

32. 1960. See also Harrison, 1962.

33. 1976.

34. Or its mere look on the page; but no-one would suggest that this is an important aspect of how imagery works in verbal learning (except perhaps, sometimes, for exceptional subjects like the mnemonist Shereshevskii [Luria, 1960, 1968]).

35. Richardson, 1980 pp.82,99.

36. See §I.A.1 above. For Aristotle images can have truth values [**De Anima**, 428a]. Aristotle does seem to have held images to be picture like [**De Memoria et Reminiscentia**, 450a - see §II.A.2 above.], but, of course, he was innocent of Wittgensteinean arguments.

37. Yates, 1960 p.64.

38. 1978.

39. Baylor, 1972.

40. Anderson, 1978, 1983.

41. Paivio, 1986.

42. Anderson [1978 p.271] does suggest that perhaps "propositions encoding visual information are stored in the right hemisphere and propositions encoding verbal in the left," but I hardly think this is intended seriously. In any case, this would again be an entirely **ad hoc** move to accommodate the evidence for cerebral lateralization to a 'propositional' theory which in no way calls for it.

43. C.f. Palmer, 1978 p.299; Anderson, 1978.

44. 1977.

45. Possible within the parameters of their discussion, at any rate. I shall be arguing later that 'propositional' accounts of mental representation are unworkable at a fundamental level. The present point is that even if one accepts that they are workable in

principle, or even in some respects true (as Kosslyn thinks), they are not a good basis of explanation for imagery effects.

46. A couple of other effects which they consider - 'selective interference' and evidence for 'parallel processing' in imagery - are concluded to be about equally elegantly explicable in 'propositional or in image terms. Even here, however, only imagery theory would have been likely to have predicted the effects.

47. Kosslyn & Pomerantz, 1977 pp.68-9. C.f. Wilton, 1978 pp.566-7.

48. Kosslyn & Pomerantz, 1977 pp.70-71.

49. Kosslyn & Pomerantz, 1977 pp.73-4.

50. 1978 p.298.

51. 1978.

52. E.g. 1981.

53. E.g. Shepard, 1981, 1984a.

54. This is no accident - see Palmer [1978 p.298-9].

55. See R82-3.

40. See Finke, 1980 p.130, 1986 p.82.

41. He gives his reasons for taking this view in Finke [1980]. He generally prefers to speak of "levels" rather than "stages" of processing, but in this context (as opposed, for instance, to that of

56. E.g. Pylyshyn, 1973, 1978, 1979a,b,c, 1981, 1984.

Notes to §II.C.4.

1. 1910.

2. Reviewed in Segal [1971b].

3. See §I.C.1 above.

4. Segal & Fusella, 1970, 1971.

5. Brooks, 1967, 1978; Atwood, 1971; Janssen, 1976a,b; Baddeley, Grant, Wright & Thompson, 1975; Baddeley & Lieberman, 1981 - see §I.C.2 above for discussion.

6. 1977 p.67.