amount of change in orientation was represented by the Configuration by Sequence interaction. It is through the different combinations of form-part configuration and sequence of part presentation that the effect of change in orientation would obtain. This variable did not have a significant effect on performance ($F = 3.93$, $df = 1/12$). Thus the results confirm, with a different form involving angles of different degree, McFarland's finding that the visual system takes longer to integrate a sequence of angles than a sequence of sides.

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NOTES

1. The research reported herein was conducted while the author was the recipient of an IBM fellowship at Iowa State University.
2. Presented as a paper at the Ninth Annual Meeting of the Psychonomic Society, St. Louis, Missouri, October 31, November 1, 2, 1968.

Comment on Cross and Cross's "The misperception of rotary motion"

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Cross and Cross have proposed that apparent reversal of rotary motion in depth (AR) is a function of strength and type of misleading depth cues, but are concerned that this does not account for voluntary control of frequency of AR and increase in AR over time. It is claimed that both effects are due to explicit or implicit instructions.

Cross & Cross (1969) have proposed that apparent reversal of rotary motion in depth (AR) occurs as a function of the strength and number of misleading depth cues, a view supported by other investigations (Power, 1966). They are concerned, however, about two facts that they say their theory cannot explain. These are (1) the increase in ARs reported by Ss over time, and (2) the apparent ability of

some Os to control the perceived direction of rotation, seeing either rotation or oscillation. It is argued below that (1) can be explained in terms of the type of instructions, explicit or implicit, used in studies on AR, and some suggestions are made about (2).

Although most studies in which repeated trials have been used have shown that frequency of AR increases over time, this does not always occur (Power, 1965, 1966), and the conditions under which it does not occur throw light on why it does occur. The effect is normally observed under conditions in which cues to true rotation direction are markedly reduced, and the S is asked to signal the occurrence of ARs, or, in less formal conditions, is asked to look for them. Power (1965, 1966) claimed that each time the S reported an AR he was fulfilling the instructions and that this would be "reinforcing." To test this possibility, i.e.,

that fulfilling the instructions increases the probability of a similar response being made on a future occasion, Power had independent groups of Ss observe an Ames window under two conditions of instructions, to report the occurrence of ARs and to report the occurrence of rotation through the frontoparallel plane (i.e., a nonreversal). The experiment was repeated with an elliptical shape. It was found (Power, 1966) that in each case there was no significant difference in number of ARs on Trial 1 of four trials for the two sets of instructions, but that by Trial 2, in the case of the trapezoidal window, and Trial 4, in the case of the ellipse, there was a significant difference in frequency of AR. Thus the hypothesis was confirmed, and it may be concluded that there is no tendency for the effect to increase as a function of viewing time, but rather that there is a tendency to report an increase in frequency of AR as a function of reporting ARs.

It is difficult to know to what extent Ss can control rate of AR. Ss often find it difficult to be sure whether they perceived rotation or oscillation and it may be that if they are endeavoring to control perceived direction they will interpret a doubtful AR as an AR or rotation, depending on their intention at the time. Although most people who have frequently experienced the illusion believe that they can exert voluntary control, it would be difficult to interpret unequivocally the results of an experiment that claimed to show this, since the demand characteristics of the situation might well lead the Ss to report a fewer or greater number of ARs independently of their perception. From informal observations it seems likely that such voluntary control as occurs is exerted by fixating on some point on the object and following it carefully, thus gaining information to true direction of rotation, or by letting the gaze relax and observing the object as a whole. If this is the case, then what seems to be voluntary control is in fact use of implicit instructions to fixate various parts of the stimulus object.

Thus, the type of explanation offered by Cross and Cross is not in difficulty. If the above analyses are correct, the facts that are not explained are a function of extra variables and do not embarrass a theory based on features of the stimulus.

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