THE VARIETIES OF SOCIAL STIMULATION IN THE FEEDING BEHAVIOUR OF DOMESTIC CHICKS

by

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(With 3 Figures)

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Two fundamental problems become apparent when attempts are made to specify the role of the companion in the social facilitation of any behaviour. The first concerns the identification of those aspects of the companion that provide the stimulus for the facilitative effect; the second is addressed to investigation of the underlying processes of such stimulation. The present paper is concerned with the former problem, and specifically as it relates to the feeding behaviour of domestic chicks.

The importance of the pecking behaviour of the companion as a stimulus has been supported by several findings. It has been demonstrated, for instance, that a chick can be induced to feed and that this feeding can be maintained by the pecking-like movements of relatively crude companion surrogates such as the experimenter’s finger, or a pencil being tapped on the substrate (COLLIAS, 1952; TOLMAN, 1964). Similar findings have been reported by TURNER (1964) and TOLMAN (1967) using more chicken-like surrogates. TOLMAN (1967) further reported a functional relationship between the amount of pecking by the chick and the amount of pecking by the surrogate companion. TOLMAN & WILSON (1965), by manipulating food deprivation, indirectly varied the amount of pecking by a real companion and found the subject chick’s feeding clearly to be a function of this variation.

It is so far apparent that experimental attention has focused upon the pecking behaviour of the companion as a stimulus. Some recent theoretical attention, however, has been directed to the possibility that the mere presence of a companion may have a generally facilitating effect that might be reflected

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in the subject’s feeding behaviour (Zajonc 1965, 1966). Since data have not yet been reported in regard to "mere presence" as a stimulus, the possibility of such a stimulus operating in addition to the apparently specific pecking-behaviour-stimulus must be admitted. This issue is further complicated by lack of a definition of "mere presence". Operationally, there are at least two ways in which this term might be interpreted. First, a merely present organism could be viewed as one that is not behaving. It is difficult to imagine such an organism as anything but dead. Second, "mere presence" might be produced operationally by demonstrating that, although behaviour occurs, the companion’s effect upon the subject is independent of that behaviour.

While the ultimate concern of the present set of experiments was to investigate the effect of the mere presence of the companion and behaviour other than feeding as possible stimuli, a more immediate concern became the method by which these hypothesized stimuli might be investigated. One simple way in which to produce a behaving but non-feeding companion is to separate the companion and subject by a transparent barrier and give the companion no food. Whereas two experiments (Tolman, 1964, and Tolman & Wilson, 1965) showed that such a barrier obviated the social effect on feeding, even though both subject and companion had access to food, a later experiment demonstrated a social increment in feeding under such a condition. In this latter experiment, the test periods were relatively brief (10 min.) as opposed to longer test periods (one and 12 hrs) used in the earlier experiments. The incremental effect found in the short test was attributed to a calming effect of the companion’s "visual presence". If this interpretation were accurate, then the situation in question would be precluded for further use in the investigation of stimulus properties of the companion. Conversely, if it were inaccurate, and the social increment produced when subject and companion are separated by transparent barrier is of the same variety as that demonstrated by freely interacting pairs, then the separated condition could prove to be very useful in the further investigation of social stimulus problems.

EXPERIMENT I

This experiment was concerned with testing the assumption that the social increment in feeding occurring among chicks separated by a clear plastic barrier can be attributed to mere "visual presence" of the companion. If this assumption is verified, then variations in the amount of pecking by the companion should not be reflected in the feeding behaviour of the subject as is the case for freely interacting pairs.