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WHEN DOES "NO" REALLY MEAN "YES"? A CASE STUDY IN UNILATERAL VISUAL NEGLECT

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Abstract—A patient with unilateral visual neglect indicated whether a dot was or was not present in a display. When present, the dot appeared equally often in the left and right visual fields. Although he typically denied having seen dots in his left visual field, he was able to make this judgment much more quickly than when no dot was in fact present. The mean response times when the dot was present (1135 and 1004 msec, for left and right) were almost twice as fast as the response times when no dot was present (2025 msec). This result suggests that the patient searched the visual fields individually, and in fact generated a "No" response based on detecting the dot in his neglected field. Thus, the mechanisms used to detect stimuli apparently are not rigidly linked to those used to classify them or to produce a response.

INTRODUCTION

THE unilateral neglect syndrome is normally diagnosed by a patient's failure to report or respond to contralesional stimuli [6, 7] as well as by a denial of deficit [2]. However, several studies have demonstrated that neglected (contralesional) stimuli are processed to some extent. We know, for instance, that contralesional stimuli can cause skin conductance changes [15] and normal somatosensory or visual evoked potentials [16], and that they can facilitate detection of targets presented in the intact field, provided that the prime and target are identical or, more interestingly, belong to the same semantic category [1]. We also know that neglect patients have better access to contralesional stimulus information if asked about it indirectly. For example, VOLPE *et al.* [17] found that patients who explicitly deny the presence or identity of contralesional stimuli were still able to judge whether two stimuli simultaneously presented to the left and right hemifield are the same or different, and MARSHALL and HALLIGAN [10] described a case of a woman who stated a preference for an intact versus a burning house drawing while claiming that the two drawings were identical (the fire was drawn in the neglected hemifield).

The fact that performance and judgment can be affected by stimuli that do not reach awareness is not in itself special to neglect patients (e.g. Refs [13], [18] and [19]). What is striking in neglect patients is the tolerance for logical confusion and inconsistency that such residual processing provokes. Such inconsistency, from a commonsensical perspective, is revealed by the patient of MARSHALL and HALLIGAN [10], who should have been perplexed by her own statement of preference between "identical" houses. However, because the inconsistency is manifest only across two judgments, namely, the same/different judgment

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