Is a lack of cerebral hemisphere dominance a risk factor for social “conflictedness”?
Mixed-handedness in shyness and sociability

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Abstract

Recent evidence suggests that a combination of shyness and sociability is associated with distinct behavioral and psychophysiological correlates at rest and in response to social stress and may be a risk factor for developmental psychopathology in children and illicit substance use in adolescents and young adults. Using the Cheek and Buss (1981) measurement model on the relative independence of shyness and sociability as a theoretical platform, we examined whether shyness and sociability were distinguishable on a measure of cerebral hemisphere dominance (i.e., a continuous measure of handedness) in young adults. We found a significant interaction between shyness and sociability on handedness. Undergraduates classified as high shy/high social had a higher degree of mixed-handedness compared with other combinations of shyness and sociability. Findings are discussed in terms of how mixed-handedness may reflect a lack of cerebral lateralization of some psychological processes important to the regulation of social behavior.
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1. Introduction

The search for personality correlates of handedness has a long and rich history in the normal and clinical adult personality literatures. Left-handed individuals have been found to be more anxious than right-handed individuals, and right-handed females have been found to be more extraverted than left-handed females (Hicks & Pellegrini, 1978; Lester, 1987). Adults who are more right-hemisphere reliant (linked to left-handedness) have been found to have higher phobia scores than adults with a left-hemisphere style (Merckelbach, Muris, & de Jong, 1990). More recently, studies have suggested that left-handed individuals are more dominant, arrogant, calculating, and cold-hearted, and score lower on measures of nurturance than right-handed individuals (Coren, 1994).

The relation between personality and handedness has been of interest to clinicians as well. Moscovitch, Strauss, and Olds (1981) found that there was a complete absence of left-handers in a group of severely depressed patients undergoing electroconvulsive therapy (ECT). Conversely, Overby (1994) found a higher rate of non-right-handedness (left-handed or mixed-handedness) in a group of depressed females than in controls. Schizophrenia is another clinical disorder with strong links to handedness patterns. For example, patients with schizophrenia are known to have a higher rate of left-handedness compared with controls (Manoach, Maher, & Manschreck, 1988). This same study also found that all patients with schizophrenia who were left-handed had thought disorder, compared to 70% of right-handers, and that left-handers were more impaired than the non-left-handers. However, the relation between handedness patterns and individual differences in personality in normal and clinical populations is not a foregone conclusion.

For example, one study examining the relation between handedness and scores on Eysenck’s Personality Questionnaire failed to find significant results (Camposano, Corail, & Lolas, 1991). Another more recent study failed to find a relation between personality ratings and cerebral hemispheric lateralization, measured by hand, eye, and ear preference (Killgore, DellaPietra, & Casasanto, 1999). Still others have failed to find support for the notion of higher rates of fears and anxiety (Merckelbach, de Ruiter, & Olff, 1989) or psychosis (Overby, 1993) in normal adults. The lack of findings may be due to several issues: differences in the handedness measures used; a failure to consider another category of handedness: mixed-handedness, in which there is neither a strong right-hand preference, nor a strong left-hand preference (Giotakos, 2001); or perhaps a lack of theoretical models of personality in which testable hypotheses can be derived.

Research has consistently noted mixed-handedness patterns in individuals with schizotypal or psychosis-prone personalities (Chapman & Chapman, 1987; Claridge, Clark, Davis, & Mason, 1998; Kim, Raine, Triphon, & Green, 1992). Specifically, it has been repeatedly shown that participant who score high on psychosis-proneness scales (e.g., the Perceptual Aberration Scale, the Magical Ideation Scale, the Impulsive Non-conformity Scale, and the Schizotypal Personality Questionnaire) have a higher incidence of mixed-handedness (Chapman & Chapman, 1987; Kim et al., 1992; Poreh, 1994; Shaw, Claridge, & Clark, 2001). These patterns of results could be due, in part, to mild left hemisphere dysfunction, which would account for atypical handedness patterns and thought disorder common to schizotypal personality types (Kim et al., 1992). As well, an increase in mixed-handedness has been found in patients with borderline personality disorder, psychopathy, and mental retardation, while an increase in non-mixed-handedness (left or right-handedness) has been found in people with panic disorder (Giotakos, 2001; Mayer & Kos-
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