

Intentional Binding Experiment

PSY310: Lab in Psychology

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INTRODUCTION:

The process of associating actions and their results, which gives rise to an individual's perception of authority, is reflected in the phenomena known as intentional binding. Intentional binding, first proposed by Haggard, Clark, and Kalogeras (2002), describes how people believe that voluntary activities and their outcomes occur closer in time than they actually do in objective time. Self-perception, decision-making, and interacting with the environment are all thought to depend on this sense of agency (Moore & Obhi, 2012). By asking participants to estimate the time between an action (such as pressing a button) and a later outcome (such as hearing a tone), intentional binding is commonly evaluated, emphasizing the brain's function in temporal perception (Haggard, 2017).

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METHOD:

In order to evaluate the participants' feeling of authority, the experiment sought to determine how they perceived the time intervals between their deliberate actions and the results that followed. The participant used a laptop running PsychoPy software to complete an activity that required them to press a button and then guess when a tone would be produced. The time between pressing the button and hearing the tone is estimated by the participants. Perceived temporal compression is measured by recording how they perceive it. As instructed, the participant would press a button after viewing a fixation triangle on the screen. An auditory tone would play shortly after the button was pressed. After that, the participant was asked to estimate how long it took for the tone to appear after pressing a button.

RESULTS:

Intentional binding was supported by the experiment, which showed a discernible variation in perceived time intervals between the "expected" and "unexpected" circumstances.

Expected Condition: Participants reported experiencing temporal compression when the tone followed their action consistently, as evidenced by the mean perceived interval of 249.39 ms.

Unexpected Condition: When the outcome was less foreseeable, the perceived interval was slightly longer, with a mean of 256.70 ms.

Difference: When the outcome was expected, participants reported a stronger temporal relationship between action and consequence, as evidenced by the computed difference of 7.31 ms between the two circumstances.

DISCUSSION:

These findings are consistent with the body of research on intentional binding, which postulates that the brain increases the sensation of agency by compressing the perceived time between a deliberate action and its anticipated result (Haggard et al., 2002). The participant's cognitive anticipation and prediction processes, which reinforce the temporal relationship between cause and effect, are probably responsible for the short reported interval in the expected condition.

A diminished sense of agency when results are uncertain is suggested by the somewhat longer period in the surprise condition. This result supports the idea that predictability strengthens the intentional binding effect and emphasizes how expectations influence how we perceive temporal occurrences.

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