Prohibition in instruction is commonplace in performance-oriented motor tasks, providing a simple and intuitive method for shaping behavior. Previous research warns against the use of prohibition, particularly for gender-biased tasks. In contrast with Wegner and colleagues’ (1998) ironic process theory of motor control and de la Peña’s (2008) implicit overcompensation hypothesis, we offer a distraction-error model that suggests attentional disruption following prohibitive instruction. As we demonstrate across three separate motor tasks, prohibitive instruction results in a dramatic initial increase in error followed by attenuation toward the target level of performance, whereas no increase in error is observed in the absence of prohibition. Assessment of this hypothesis across neutral, male- and female-stereotyped tasks suggests comparable patterns of error, supporting the parsimonious distraction-error model. Thus, prohibitive instruction may induce temporary and preliminary increases in error, but performance ultimately improves over time.

Background

• Wegner’s Ironic Process Theory argues that prohibitive instruction leads to an increased likelihood of enacting the prohibited behavior.1
  o Originally pertaining to mental control, Wegner extended this theory to encompass motor control.2
  o Under memory load, more ironic motor behavior is observed with prohibitive instruction than without.2

• In contrast, the Implicit Overcompensation Hypothesis argues that overcompensation errors are more likely than ironic errors in motor tasks.2
  o Prohibition primes the opposite of a target behavior, which requires a compensatory process to override it.
  o Activation of the compensatory process leads to overcompensatory errors.

• We present a simplified Distraction-Error Model for responses to prohibitive instruction.
  o Prohibitive instruction causes distraction, which moves focus away from the task, resulting in error.
  o The initial direction of the error (Ironic or Overcompensatory) is arbitrary.
  o The magnitude of these errors attenuates over time.

Questions & Predictions

Does prohibitive instruction cause an increase in error? Prohibition causes distraction, which results in increased errors immediately following prohibition.

Are ironic errors more common than overcompensatory errors following prohibitive instruction? Overcompensatory errors are most common following prohibitive instruction, although ironic errors may occur periodically.

Do errors resulting from prohibition diminish over time? Over time, the magnitude of errors due to prohibitive instruction should attenuate, and performance should return to pre-prohibition levels.

Do gendered stereotypes influence the prevalence of ironic errors? Men and women should exhibit ironic errors with equal prevalence.

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