

## **“Preventing Spear-Phishing Victimization Through Concrete and Abstract Fear Appeal Construals: An Online Field Experiment Grounded in Construal-Level Theory and Protection-Motivation Theory”**

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**Abstract:** Phishing is a pervasive, growing form of online fraud that causes billions in annual losses. Spear-phishing is a highly targeted and successful type of phishing that uses social engineering to craft emails that appear genuine.

Unfortunately, anti-phishing training campaigns struggle to effectively educate users on how to detect such spearphishing emails—partially because security is seen as a secondary task outside their normal work, and partially because users are rarely motivated to undergo lengthy training.

To be effective, training needs to be non-disruptive and brief as to avoid being onerous, and yet, inspire dramatic behavioral change necessary to detect spear phishing. We present a novel training approach, based on fear appeals and protection-motivation theory (PMT), that firms can use to educate users and evoke protection motivation. In doing so, we integrate construal-level theory (CLT) to explain how fear appeals can quickly and powerfully evoke mental representations (construals) necessary to stimulate threat perceptions. We report results of an online field experiment used to validate our hypotheses. Our contributions encompass: (1) providing effective and brief anti-phishing training based on fear appeals and PMT; (2) expanding PMT with CLT to guide fear appeal design; (3) demonstrate a full application of CLT.