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Challenges and Feasibility of Applying Reasoning and Decision-Making for a Lifeguard Undertaking a Rescue

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solution via mental shortcuts to ease cognitive load (Reason et al., 1990). Heuristic refers to experience-based techniques for problem solving, learning and discovery that find a solution which is not guaranteed to be optimal, but good enough for a given set of goals (Legrenzi et al., 1993; Wu et al., 2012) and without too much effort. However, success solving one type of problem does not predict success solving another (Ilgen et al., 2012). Currently lifeguards are advised to “think carefully” when confronted with a problem (i.e., employ analytical reasoning). Based on cognitive load theory (Van et al., 2010) it is possible that this advice may overwhelm working memory (Cognitive overload) and therefore be detrimental, especially when conducting a task such as surveillance as detriments in signal detection can occur when the observer i03]TJ/ 0 0l E0003agng.5 m6 (tposn ng)Based on c

Table 1.

Effort and Process for Decision-Making (Intuitive *vs*. Rational) (Drew et al., 1985)

1 variable per minute) or intuitive (if more than 1 variable per minute).

RESULTS

All phases, sub-phases, groups of variables, individual variables, and their responses throughout a lifeguard's professional life, and each probability of a singular event repeating are listed in Table 1. The total variables (n=64) that may affect or need a lifeguard to engage in decision-making were considered.

1996; Croskerry, 2000; Stanovich & West, 2000). Novices employ this analytic mode of reasoning more frequently than their experienced counterparts. Experienced lifeguards therefore may have already turned some of the "unpredictable" into "anticipated" variables and have a potential optimal response ready. However, while intuitive reasoning is a hallmark of those with experience, errors may result from overreliance on automatic reasoning (Eva & Cunnington, 2006).

The authors propose that during most rescue scenarios lifeguards (like emergency workers) use both systems of thought, a process known as "dual processing" as this offers the best chance of success, even for the novice (Norman, 2009; Norman & Eva, 2010; Eva, 2007). It is possible that the combination of automatic and analytic thinking is more bene f cial for complex versus simple cases (Mamede et al., 2008) or when one anticipates dif Ę à s l ª ı ȷ exi G le ata Ξ t

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