Commentary on the Model

Event probability: Any geographic location will have a history that suggests that some large-scale adverse events are more likely than others. We have called this history the "event probability profile" for a location. Echoing an idea proposed by Egon Brunswik (1952) in his "lens model", we argue that a location offers a vast range of sensory cues, some of which have greater "ecological validity" than others at a given moment. In this context, perception of the environment can be like a multivariate regression, with some sensory cues having greater weights in forming an impression of the environment. An awareness of the event probabilities changes the weight given to cues. So, in some locations, mild shaking of the floor might be attributed to an earth tremor; in others, to a passing train.

Memory: Previous experiences or what one has learned vicariously about events, shapes the interpretation of, for example, the shaking floor.

Possible interventions: Activities that increase the probability of recognising relevant cues, i.e. increase their ecological validity. This can also be described as enhancing a person's *situational awareness*.

Physiological reaction: The nature and extent of the physiological response to an event depends on the characteristics of the event. A rapid and/or intense event may trigger correspondingly intense physiological changes. These reactions then determine triggers for action and the feelings experienced.

Some actions are involuntary, for example, jumping with fright. Other actions result from conscious thought or planning, for example, getting into a doorway or under a desk when cues are interpreted as being caused by an earthquake. An intense, sudden stimulation can overwhelm the physiological system, and a person might "freeze".

In our model, the involuntary and reasoned action tendencies are considered as a series of sequential filters. A helpful way of conceptualising the interaction of these two filters is to assume that they each operate on an arbitrary scale from 0 (off) to 1 (on). If a sudden and intense adverse event occurs, the first filter (involuntary action) is fully on, and the outcome is freezing or blind panic. If the involuntary action is not triggered so strongly, reasoned action can occur. Reports from people who have experienced major adverse events suggest they experienced involuntary *and* reasoned actions. The ratio of one to the other probably determines how well they could mitigate harm to themselves and others.

Possible interventions: Activities that assist people recognise, understand, and respond to their emotional states. Teaching strategies for taking appropriate action when faced with a disaster.

Applying the model

Understanding where various kinds of interventions might be appropriate in the model is helpful. Still, it is also necessary to understand how levels of a person's personal development determine the character of the interventions that will be most effective. Levels

of personal development and experience can guide the creation of content for successful interventions. However, it is important to note that how an intervention is delivered can also be critical to its success.

Brunswik, E. (1952). International Encyclopaedia of Unified Science, Volume 1, No 10. The Conceptual Framework of Psychology. : The University of Chicago Press.