

# On Capability of Handling Diversity of Psychosocial Information in Workplace Interventions

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## Introduction

Psychosocial issues are often complex and unique. To handle them successfully, managers and experts must have knowledge about essential work characteristics and their relationships, including the diversity of employee reactions. This project explores how different

cuing techniques and communication procedures capture complexity and qualitative variation in personal experiences of situations at work, in order to advance agent assessment and interventions. The project subsumes several studies, many of them carried out in an AR-context.

**Theoretical background.** In the present context, the interplay between individuals and other work-related components is defined as complex phenomena (i.e. a large set of dynamically interacting components, often in uncertain states and with non-transparent features). It is studied within a System's approach, implicating an iterated and error-prone process of identifying essential elements and analyzing their possible interactions.

The studies exemplified here, investigated how personal experiences of typical work situations can be analyzed through different cuing techniques for memory retrieval and judgment – a judgment approach to situation analysis. The experiences were modelled as networks of stored or reconstructed elements and events of a situation to be

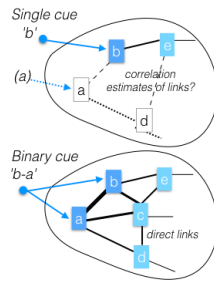


Figure 1. Cuing techniques and associated networks.

retrieved from memory. It was assumed that selected retrieval cues can activate patterns of images, e.g. binary cues can activate binary connections between images. Figure 1 illustrates retrieval cuing in networks, using binary (BC) vs. single (SC) cues.

In study 2, the retrieval cues were a mixed set of 13 components related to work environment contexts (*management, role/instructions, physical factors, change, benefits, support/encouragement, personal qualities, anxiety/uncertainty, psychological stress, work motivation, participation, competition, social relations*). It functioned as a semantic grid of conceptual nodes, capable of activating possible mental images and connections between them. It was identical for all tested situations.

## Method

- Data were collected from samples of work-experienced men and women participating in I.O.P. training.
- In study 2, participants received short texts (Fig. 2) of eight typical social situations. After confirming their state of personal experience of a given situation, they performed two retrieval tasks in accordance with the task design to the right. The first single-cue (SC) task included categorizations (*yes, partially, no*) about the occurrence of each of the 13 components in each situation. The following binary cue (BC) task included categorizations (*positive, negative, no/neither positive nor negative*) of all  $n(n-1)/2=78$  possible connections between the 13 cue components.

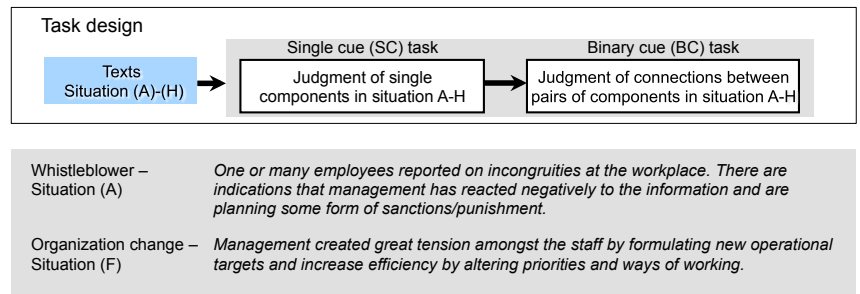


Figure 2. Task design and two examples of situation texts (study 2)

TABLE 1 and TABLE 2.  
 Individual judgments of connections using the BC-technique for Sit. (A) and Sit (F) respectively; negative (red), positive (green) and no/undirected (grey).

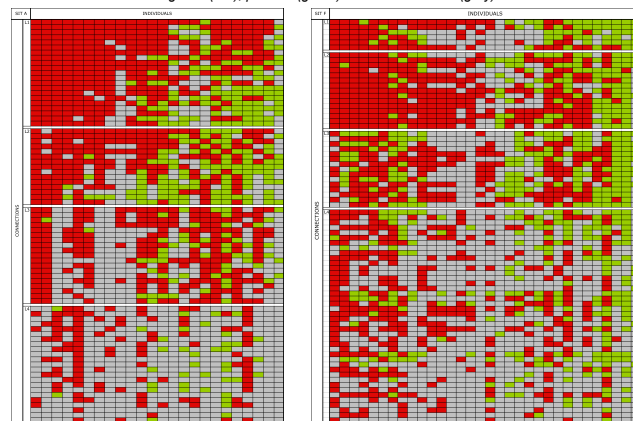


Figure 3. Semantic network of Sit (A)

- The texts were modelled as semantic networks. The 13 retrieval cue components were added to each network, resulting in hypothetical representations of the situations, used as analytical schemes for participants' responses to the SC and BC tasks. Figure 3 shows the semantic network for Situation (A) in study 2.

## Selected results

- The SC-technique was sensitive to situations in line with the text content. Over all situations, "Personal qualities" (M=6,4) and "Roles/Instructions" (M=6,2) were the most yes-reported components, "Benefits" (M=1,5) and "Physical factors" (M=1,8) the least. At the individual level, the SC-task resulted in lists of pertinent components for each situation. There were no information about interactions between components, unless correlated at the group level.
- The BC-judgments resulted in individual patterns of directed and no/undirected connections between the 13 cue components. Table 1 and Table 2 present the 78x24 (connections x individuals) judgments of Situation (A) and the 78x32 judgments of Situation (F), respectively.

- Participants with personal experiences of specific situations varied from 62%-93%
- Only participants with personal experiences of Situations (A) and (F) are presented in Tables 1 and 2.
- There were large individual variations in the frequencies of different types of connections (see Table 1 and Table 2). For Situation (F) presented in Table 2, *Negative* ranged from 0 to 69 (mean=29), *Positive* ranged from 0 to 42 (mean=17) and *No/Undirected* ranged from 12 to 57 (mean=33). At the individual level the maximum of directed connections were 78.

**Conclusions** Contrary to the SC-technique, the BC-technique capture situation complexity both in terms of advanced patterns of directed connections between components in the work environment, and in terms of qualitative individual diversity. Given a relevant sample of judgement or communication cues, this technique could possibly contribute to identification of essential interactions, including shared or disparate cognitions of different stakeholders. The tentative conclusion is that this approach should be developed further to a user-friendly instrument to advance management and expert assessment and interventions activities at individual work places.