Who’s Afraid of Job Interviews? 
Definitely a Question for User Modelling

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Abstract. We define job interviews as a domain of interaction that can be modelled automatically in a serious game for job interview skills training. We present four types of studies: (1) field-based human-to-human job interviews, (2) field-based computer-mediated human-to-human interviews, (3) lab-based wizard of oz studies, (4) field-based human-to-agent studies. Together, these highlight pertinent questions for the user modelling field as it expands its scope to applications for social inclusion. The results of the studies show that the interviewees suppress their emotional behaviours and although our system recognises automatically a subset of those behaviours, the modelling of complex mental states in real-world contexts poses a challenge for the state-of-the-art user modelling technologies. This calls for the need to re-examine both the approach to the implementation of the models and/or of their usage for the target contexts.

1 Introduction

As a domain of interaction, job interviews rely crucially on the participants’ mutual modelling of each other’s behaviours and mental states. The ultimate goal of a job interview is for the interviewer to ascertain the fit of the candidate to a particular job and, ideally, for the candidate to assess a given company as a possible workplace [1]. Job interviews are often a game of bluff, where personas are adopted by the interactants and where it is normal, even expected, that the display of participants’ real emotions may be suppressed [2]. This presents substantial challenges for real-time user modelling: the subtle nature of the behaviours manifested by the interviewees in such contexts makes them difficult...
to detect as well as to interpret in terms of more complex mental states. The interpretation of the observable behaviours in terms of the mental states, such as stress, boredom or hesitation is important as those states may be indicative of a person’s ability to cope with the demands of a given job. The primary challenge, as we see it, is in obtaining a reliable measure of the users’ affective states during interactions that could inform the design of our model and/or against which the model could be evaluated. This challenge is well known in the field [3-4].

In this paper we present four studies, which have iteratively informed the implementation of the user modelling tools in the TARDIS project. TARDIS implements a serious game for job interview skills coaching for young unemployed people, aged 18-25. The game is motivated by a growing need for technology-enhanced approaches to helping young people gain skills needed to secure jobs, both because of the marked youth unemployment and the expense associated with traditional methods, such as mock job interviews enactments.

The TARDIS user modelling tools, as well as the serious game more generally, have been described in [5] and [6]. Presently, we discuss some key issues, highlighted through the studies, that relate to finding a balance between the need to detect and interpret target users’ subtle behaviours in ecologically valid contexts and the still limited capabilities of the state-of-the-art social cues detection technologies. Our work demonstrates that striving for ecological validity of our models, while highly desirable, further exacerbates the challenges of finding reliable measures of the phenomena of interest.

2 Related Work

Nonverbal behaviours are key in job interviews. For example, [7] found a relationship between audio-visual cues of the candidates and the interview outcomes. [8] studied how the success of simulated job interviews can be predicted from conversational engagement, vocal mirroring, speech activity, and prosodic emphasis. Other researchers have focused on the relationship between interviewers’ decision making and the perceived personality of the candidate (measured along the dominance, equivalence and submissiveness dimensions) and the related behaviours [9]. [10] found a negative correlation between the interviewees’ performance (interview scores) and trait anxiety, while [11] found a link between high state anxiety and information acquisition and retention, suggesting that anxiety may interfere with the applicant’s acquisition and processing of the information presented to them by the recruiters and thus, with their performance. This implies that anxiety regulation is fundamental to candidates’ performance in interviews.

Less is known about interviewee’s other mental states that may be relevant to achieving success in an interview. Crucially, most of the substantial evidence that links the specific social cues with candidates’ traits or states has been conducted in the laboratory settings with university students. While this research is of practical importance to us, a key difference between it and the context of TARDIS is that we aim to define the characteristics of a population which is at

1 http://www.tardis-project.eu