# Organizational stress in high-level field hockey: Examining transactional pathways between stressors, appraisals, coping and performance satisfaction

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**Abstract**

This study investigated transactional pathways between organizational stressors and their underpinning situational properties, appraisals, coping, perceived coping effectiveness (PCE) and performance satisfaction in athletes. Ten high-level field hockey players were interviewed. Data relating to stressors, situational properties, appraisals and coping were analysed using directed content analysis. Mean PCE scores were calculated and subjective performance satisfaction data were categorised as satisfied, neutral, or dissatisfied. A variety of organizational stressors was reported, which were underpinned by five situational properties. Challenge, threat and harm/loss appraisals were experienced and problem solving was the most commonly reported family of coping. High PCE was not always associated with performance satisfaction. Performance satisfaction was, however, linked to the appraisal experienced. A battery of stress management techniques and ways of coping is useful for optimising appraisals and alleviating negative outcomes of stress.

**Keywords**

Interviews, situational properties, transactional alternatives, visual analytical diagrams

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## Introduction

Sport psychology research has unearthed a multitude of organizational stressors that sport performers can encounter during their athletic career [see, for a review, 1]. Recent research has shown that athletes generally appraise these demands negatively [e.g. 2] and attempt to cope with them using a variety of coping strategies [e.g. 3]. Although this research has begun to reveal the nature and scope of performers' organizational stress experiences, Fletcher, Hanton and Mellalieu [4] argued that researchers should progress beyond investigations of discrete stress components (e.g. stressors, appraisals, coping) and toward more comprehensive examinations of complex stress phenomena.

Organizational stressors (e.g. spectators, roles, selection and position insecurity) have been defined as 'environmental demands (i.e., stimuli) associated primarily and directly with the organization within which an individual is operating' [4, p. 329]. Research findings suggest that athletes experience and recall more organizational-related demands than competitive-related demands [5], that elite athletes encounter more organizational stressors than non-elite athletes [6] and that multiple organizational stressors are linked to athlete burnout [7]. A critical factor in understanding sport performers' reactions to organizational stressors is the underlying situational properties of such demands [2]. Lazarus and Folkman [8] proposed seven[1] situational properties of stressors that relate to human stress transactions and determine the potential for a stressful appraisal.

The situational properties of stressors are: (a) *novelty*, which refers to the effect of prior knowledge; (b) *event uncertainty*, which pertains to the probability of an event occurring; (c) *imminence*, which refers to the amount of time before an event occurs; (d)

[1] Eight situational properties were suggested by Lazarus and Folkman [8] but the property termed *predictability* refers to animal (non-human) models of stress [2]. Therefore, seven properties, including that termed event uncertainty which was proposed instead of predictability, should be used when studying human stress transactions [8].

*duration*, which relates to how long stressful events persist; (e) *temporal uncertainty*, which pertains to situations when the individual is unsure of the precise timings of an event; (f) *ambiguity*, which refers to situations where the necessary information required to make an appraisal is unavailable or insufficient; and (g) *timing in relation to life cycle*, which is concerned with the contextual properties that define the timing of an event. Within the sport psychology literature, two studies have used these situational properties to investigate performers' appraisals. In the first study, Thatcher and Day [9] concluded that all of the properties were pertinent to their sample of trampolinists'. In the second study, Didymus and Fletcher [2] found that temporal uncertainty was the only property that was not influential in swimmers' appraisals of organizational stressors.

Transactional stress theory conceives appraising to be an evaluative process that is influenced by an individual's beliefs, values and or goals [cf. 8]. Three types of primary appraisal exist: *irrelevant*, *benign-positive* and *stressful* [8]. Under the rubric of stressful appraisals, there are three possible transactional alternatives: *harm/loss* appraisals, which arise when damage to the individual has already occurred; *threat* appraisals, which arise when there is a possibility of such damage occurring in the future; and *challenge* appraisals, which arise when the individual feels enthusiastic towards the struggle that will ensue [8]. Appraisals have been suggested to be the pivotal aspect of sport performers' organizational stress experiences [2] and are closely linked to coping [10].

From a transactional perspective, coping is defined as 'constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person' [8, p. 141]. One approach to classifying coping is to group strategies according to a single function in adaptation (e.g. problem- and emotion-focused coping) or a single topological distinction (e.g. appraisal-focused coping, approach and avoidance). However, recent research [11] has challenged these

groupings because, amongst other reasons [see, for a review, 12], they may not adequately represent the ways of coping within them. Skinner, Edge, Altman and Sherwood [12] developed a hierarchal system of action types, which allows lower-order coping categories to be grouped according to their (multiple) functions in adaptation and their (multiple) topological features. They suggested that such a system should be used to 'span the conceptual space between individual instances of coping . . . and meaningfully link them to coping as an adaptive process' (p. 248).

The classification system proposed by Skinner and colleagues [12] presents 12 families of coping. These coping families are: *problem-solving* (adjust thoughts and or actions to be effective), *information seeking* (find additional contingencies), *helplessness* (find the limits of one's actions), *escape* (escape the noncontingent environment), *self-reliance* (protect available social resources and attend to one's goals), *support seeking* (use available social resources), *delegation* (find the limits of one's resources), *social isolation* (withdraw from the unsupportive context), *accommodation* (flexibly adjust preferences or goals to the available options), *negotiation* (find new options or select new goals), *submission* (give up on preferences or goals) and *opposition* (remove perceived constraints). In the sport psychology literature, two studies [11,13] have used these coping families to deductively classify the ways that sport performers cope with stressful situations. The findings of these studies indicate that Skinner et al.'s [12] categorisation provides opportunities to construct new understanding of coping in sport.

Coping effectiveness is defined as the degree to which ways of coping are effective in alleviating negative responses to stressors [10]. This concept is not fully understood but, in sport, the most tested model of coping effectiveness is the goodness-of-fit model [e.g. 14], which proposes that effective coping depends on the fit between the objective situation, the appraisal of the situation and coping. Other research findings have provided support for the

choice of coping strategy model, which suggests that some ways of coping (e.g. positive self-talk) are inherently more effective than others (e.g. negative self-talk) and that an individual's choice of coping is linked to anxiety direction [e.g. 15]. Other models of coping effectiveness [see, for a review, 16] include the automaticity approach [17], the outcome model [e.g. 14] and the path analysis model of coping effectiveness, self-efficacy, control and performance [18].

Sport psychology researchers have recognised the need for studies that explore the relationships between the aforementioned components of organizational stress transactions [cf. 2,4,6,7,11]. Indeed, researchers are yet to fully examine organizational stress processes in sport performers and, importantly, the transactional pathways between the main components of these processes. Therefore, the purpose of this study was to investigate the transactional pathways between organizational stressors and their underlying situational properties, appraisals, coping, perceived coping effectiveness (PCE) and subjective performance satisfaction in athletes.

## Methodology and methods

### *Study design*

A collective case study [19] approach was adopted for this study. This approach is helpful when the aim is to construct new knowledge of a phenomenon [20] and is particularly beneficial when working with theory to understand participants' experiences. Further, a collective case study is advantageous when attempting to answer 'how' questions [20]. Thus, this approach was appropriate for the present study because the aim was to highlight the transactional pathways between components of stress transactions and, thus, illuminate how these components are linked in a specific sample of participants.

### *Participants*

Ten female field hockey players ($M_{age}$ = 21.20, *SD* = 1.99 years, $M_{experience}$ = 12.50,

144 *SD* = 2.95 years) who were members of the same field hockey team participated in this study.
145 Each participant was competing in the Investec Women's Hockey League, which features the
146 40 best women's field hockey teams in England, at the time of data collection. The sampled
147 players had a range of experience within and outside of the team that they were competing
148 with at the time of the study. For example, one of the participants had been with the team for
149 six years while another participant was new to the team but had extensive experience
150 competing in the Investec Women's Hockey League and had international playing
151 experience. Each member of the team engaged with the following team training sessions on a
152 weekly basis: two pitch based training sessions, two gym based strength and conditioning
153 sessions and one or two matches per week depending on the competitive calendar. The team
154 was situated inside the top 20 league teams (based on points earned) and consisted of the
155 players, one male head coach, one male strength and conditioning coach and numerous
156 support staff (e.g. a physiotherapist) that the players could access on request. The players
157 were purposefully sampled [21] because elite athletes appear to encounter more
158 organizational stressors than non-elite athletes [6]. A theory-based variation of purposeful
159 sampling [21] was used to recruit participants from whom the researchers could learn about
160 issues of central importance to the purpose of the study, while exploring manifestations and
161 variations of transactional stress theory [8].

162 *Procedure*

163 Following institutional ethical approval, contact was made with the coach of a hockey
164 team, the nature of the study was outlined and the researcher was granted permission to
165 approach the players (n = 15). Potential participants were informed of the purpose and nature
166 of the research and that participation or non-participation would not affect their position on
167 the team. Assurance was given that participation was voluntary and that pseudonyms would
168 be used during presentation of the results. Those participants (n = 10) who volunteered to

take part in the study read and signed an informed consent form, completed a demographic details sheet and returned both documents to the researcher.

*Data collection*

*Interview guide.* In line with the methodological framework for this study, an interview guide was developed to construct knowledge of participants' stress transactions. The guide facilitated the construction of new knowledge on a joint basis between the first named author and the participants [see 20] by including both structure and flexibility. Therefore, the guide allowed the researchers to gather information about the participants' experiences [22] that were most relevant to the purpose of the study. Previous organizational stress research in sport and the authors' reading about and discussions of the relationships between stress components were used during the development of the guide. The guide was piloted with three recently retired field hockey players to ensure that the questions and terminologies elicited information that addressed the aims of the study. Subsequently, minor refinements to the instructions and language were made. These refinements included substituting technical terms for more comprehensible terms (e.g. 'appraisals' was changed to 'evaluations').

The final guide[2] consisted of five sections. The first section contained introductory comments and instructions to the participants. The instructions asked each participant to answer the questions in a candid way, to take time to recall the events that were being discussed and to inform the interviewer if they could not recall the answers to any of the questions. In the second section of the interview, the participants were asked to list all of the organizational stressors that they could recall from the current field hockey season. A trustworthiness procedure [23] was employed at this stage to check that each participant understood the key terms (e.g. organizational stressors and coping) that represented the

[2] The interview guide can be obtained from the corresponding author.

conceptual underpinning of this study. At this point, the interviewer and the participant cross-referenced each recalled stressor with Fletcher et al.'s [4] definition to ensure that subsequent information was relevant to the purpose of the study. The third section of the interview involved a series of six questions that were asked in relation to each stressor that the participant had listed in the previous section. In this section, the interviewer asked one open question relating to the stressors experienced and three targeted questions [24] referring to the situational properties of the stressors, the athlete's appraisal and her ways of coping. Two closed questions were asked to gather information about PCE (rated on a five point Likert-type scale) and subjective performance satisfaction (recorded as dissatisfied, neutral, or satisfied). When each participant had answered the six questions in relation to each stressor recalled during the first section of the interview, the interviewer asked if there were any additional stressors that she had experienced but not previously mentioned. This represented the fourth section of the interview guide. In the instances (n = 5) that the participant reported additional stressors, the researcher conducted section three of the interview guide again, which involved asking the six questions in relation to each of the newly identified stressors. The fifth section of the interview guide involved a series of questions about the interview procedure (e.g. 'do you feel that you were able to tell your fully story?') to conclude the interview and generate feedback from the participants.

*Interview protocol.* Each interview was arranged at a convenient time for both the participant and the researcher. All of the interviews were conducted face-to-face to facilitate interviewer and interviewee interaction [25], were recorded using a digital recording device and lasted between 49 and 89 minutes ($M_{length}$ = 68, $SD$ = 13). Each interview was carried out during the last two weeks of the 2010-2011 competitive field hockey season to maintain a close proximity to the participants' transactions and to facilitate recall.

*Data analyses*

The interviews were transcribed verbatim and the transcripts were read and re-read to ensure familiarity with the content. The data relating to key components of stress transactions (i.e. organizational stressors, situational properties, appraisals and ways of coping) were analysed using directed content analysis [24]. When using a directed approach, existing theory or literature is used to focus the analysis procedure [24]. This was relevant for the current study because it allowed the data relating to components of stress transactions to be categorised according to previous literature while providing novel insight regarding transactional pathways between the components. The first stage of the analysis involved using elements of transactional stress theory [8] to highlight key concepts within the transcripts that could be used as initial coding categories [26]. During this phase of the analysis, a colour coding system was used whereby each component of each stress transaction was highlighted with the same colour to maintain the links between each participant experience. Once all of the text that represented a stressor, situational property, appraisal, or way of coping had been identified, operational definitions for each category were developed [24]. The categories were then iteratively and recursively compared to previous stress and coping research [e.g. 1,8,9,12] before being grouped into general dimensions. Mean PCE scores were calculated for each way of coping and data relating to subjective performance satisfaction were grouped as satisfied, dissatisfied, or neutral. Following the classification decisions, visual analytical diagrams were created that represented the codes and general dimensions that had been constructed. These diagrams were created to highlight pathways between stress components and, thus, address the purpose of the study. Each diagram illustrates a heuristic representation of one general stressor dimension.

*Research quality*

Researchers have identified a variety of criteria for evaluating the quality of qualitative inquiry [e.g. 27]. The authors of this study approach criteria from a relativist locus

and, therefore, see them as characterising values that influence judgments about research [28]. One such criterion deemed appropriate for the context of this research is confirmability [20], which was enhanced in this study by the authors' reflexive self-awareness. Specifically, the authors recognised researcher biases [21] by discussing the perspectives that were brought to the study and how these may have affected data collection, analysis and presentation [20]. Reflexivity and sincerity [29] were enhanced by a critical friend [30] who was not involved with the data collection or analysis but was present throughout the research process. This friend is an expert in qualitative data analysis and encouraged reflection on and exploration of alternative interpretations as they were constructed [30].

To engage in reflexive elaboration and provide opportunities for enhanced understanding [20] each participant's visual analytical diagram was sent to her with a de-briefing pack. This pack consisted of a cover letter, an overview of key terms that represented the conceptual underpinning of the study and a feedback sheet. Despite debate about the use of this method [see e.g. 20,31], it was deemed appropriate for the current study because it was important to explore the trustworthiness of the researchers' interpretations that were used to create the visual analytical diagrams. These diagrams are a novel and unusual way of representing qualitative data but were influential in allowing the researchers to 'show', rather than 'tell', the theory-focused findings and, thus, enhance the credibility of the results [29].

## Results

The data are presented in four subsections that each includes a visual analytical diagram (see Figures 1-4) representing one general dimension of stressors. Each subsection is accompanied by narrative that includes quotes relating to each general dimension. This approach allows detailed descriptions of co-constructed knowledge relating to transactional pathways to be reported.

### *Leadership and personnel issues*

The participants reported six stressors that were related to leadership and personnel issues (see Figure 1). Four situational properties underpinned these stressors. Some of the stressors in this general dimension were appraised in a similar way (e.g. spectators were appraised as a challenge), whereas others were appraised in different ways (e.g. performance feedback was appraised as a threat and a challenge on different occasions). Problem solving (n = 11) was the most commonly reported coping family when participants experienced leadership and personnel issues. Overall, the perceived most effective ways of coping with stressors in this general dimension were escape (PCE = 4.00), self-reliance (PCE = 4.00), and problem solving and information seeking (PCE = 4.00) (see Figure 1). There were similar frequencies of satisfaction (n = 17) and dissatisfaction (n = 18) with performance. The participants were most likely to be satisfied with their performance when they had appraised the stressor as a challenge and had employed ways of coping within the problem-solving family.

The following quote that was reported by one of the participants, Rhianna (pseudonym), demonstrates the transactional pathways during one of her stressful encounters. Rhianna described the stressor that she encountered (spectators), the underpinning situational property (novelty), her appraisal of the stressor (challenge), the ways that she coped (escape), her PCE (four) and how she perceived that this stressor influenced her performance:

> This was a real stand out event because it's not very often we get spectators. I think we weren't used to it, it was an event that hadn't occurred before . . . I quite often use them [the spectators] to spur me on and I like people watching and I use it as a positive way to my performance . . . Personally I try to not listen to what they're [the spectators] saying. I try to just, almost hear it as noise . . . I'd say they [my ways of coping] were effective. Four [out of five] . . . It [the spectators] had a positive influence on my performance.

*Cultural and team issues*

The participants reported five stressors that were related to cultural and team issues (see Figure 2). These stressors were underpinned by three situational properties. Some of the stressors in this general dimension were appraised in the same way by different athletes (e.g. team atmosphere and support was appraised as a threat) whereas interaction with teammates, for example, was appraised as a challenge by two participants, as a threat by another participant and with a sense of harm/loss by another. A combination of accommodation and problem solving (n = 4) coping was the most commonly reported way of coping when the participants experienced cultural and team issues. Overall, the perceived most effective ways of coping with stressors in this general dimension were problem solving (PCE = 4.00), and opposition and support seeking (PCE = 4.00) (see Figure 2). The participants most often experienced dissatisfaction with their performance (n = 5) when they encountered stressors relating to cultural and team issues. The participants were most likely to be satisfied with their performance when they had appraised the stressor as a challenge and had combined ways of coping within the accommodation and problem solving families.

The participant quote below is from Lucy (pseudonym) who described how the different components of one of her organizational stress experiences were related. Specifically, Lucy describes the stressor that she experienced (interaction with team mates), the situational property of that stressor (ambiguity), her appraisal (threat), her way of coping (escape), her PCE (three) and the perceived influence of the stressor on her performance:

> When [new players] came in they were quite cocky, quite arrogant and I was trying to get them to do it how *we* do it as a team. So in terms of what made it stressful, I wasn't quite sure what was going on . . . I was unsure about whether the new girls would gel with the rest of us and how things would work out . . . It was threatening 'cos your team cohesion is important and I want everyone to be committed to the

team and I thought they were self-centred so that's not good for anyone . . . I coped by escaping the situation, it's not my place to get too involved and I'd rate my coping as three outa five. Yeah, a three, not perfectly effective but not bad. [The stressor] definitely made me dissatisfied with my performance 'cos they [the new players] didn't help anything.

*Logistical and environmental issues*

The participants reported five stressors that were related to logistical and environmental issues (see Figure 3). Five situational properties underpinned these stressors. Some of the stressors in this general dimension were appraised in a similar way (e.g. travel was appraised as a threat) whereas others were appraised in different ways (e.g. selection was appraised as a challenge, a threat and with a sense of harm/loss on different occasions). Support seeking (n = 5) and problem solving (n = 5) were the most commonly reported coping families when participants experienced logistical and environmental issues. Overall, the perceived most effective ways of coping with stressors in this general dimension related to the accommodation (PCE = 4.00), support seeking (PCE = 4.00) and escape (PCE = 4.00) families of coping (see Figure 3). The participants most often experienced performance dissatisfaction (n = 12) when they encountered stressors relating to logistical and environmental issues. The participants were most likely to be satisfied with their performance when they had appraised the stressor as a challenge and had employed ways of coping within the support seeking family.

Below is a quote from one of the participants, Katherine (pseudonym), who described the transactional pathways during one of her stressful encounters. In this quote, Katherine outlines the stressor (selection), the underpinning situational property (timing in relation to life cycle), her appraisal of the stressor (challenge), the ways in which she coped (support seeking), her PCE (four) and how she perceived that this stressor influenced her performance:

> Yeah, selection is a big one. It's stressful because we find out late on Thursday night whether we will play and we play [matches] on Saturdays. So it's a timing thing, selection happens too close to matches. It is a challenge though for me, not a threat or harm or loss . . . Erm, well, coping wise I talk to my teammates and ring my mum and dad for support and that's quite effective, probably a four, yeah, effective so a four. When I think about this, how this stressor impacted upon my hockey, I was satisfied with my performance. If I'm selected then it spurs me on and helps me to play my best and that meant I'm satisfied with how I've played.

*Performance and personal issues*

The participants reported three stressors that were related to performance and personal issues (see Figure 4). These stressors were underpinned by five situational properties. All of the stressors within this general dimension were appraised in different ways on different occasions (e.g. position insecurity and transitions was appraised as a challenge and with a sense of harm/loss). Problem solving (n = 5) was the most commonly reported and perceived most effective (PCE = 4.20) family of coping when participants experienced performance and personal issues (see Figure 4). The participants most often experienced neutral performance satisfaction (n = 7) when they encountered stressors within this general dimension. The participants were most likely to be satisfied with their performance when they had appraised the stressor as a challenge and had either employed ways of coping within the support seeking family or had combined ways of coping from the problem solving and self-reliance families.

The participant quote below is from Sophie (pseudonym) who described how the different components of one of her organizational stress experiences were related. Sophie outlined the stressor that she encountered (position insecurity), the underlying property of the stressor (duration), the appraisal that she made (challenge), the coping strategy that she used

(support seeking), her PCE (four) and the perceived influence of this stressor on her performance:

> Just knowing this girl would come back at some point made me feel insecure. I knew she'd be back and my shirt would be on the line. I played the games up to Christmas and thought 'oh, is she going to come back after Christmas?' and then she didn't so the more you play the more you get comfortable. So yeah, it dragged on . . . Erm, it was a challenge because it challenged me to carry on and play well. And coping? Well y'know, I'd ring my Mum and say 'I don't know whether she's coming back' and she'd say 'well you've gotta carry on so just try and cope and be part of the team' and that was a four out of five in effectiveness . . . I'd say I was neither satisfied nor dissatisfied from a performance point of view and this particular situation.

**Discussion**

Using a semi-structured interview method, we explored the transactional pathways between organizational stressors and their underlying situational properties, appraisals, coping, PCE and subjective performance satisfaction in high-level athletes. This study is the first to suggest a link between components of organizational stress transactions (e.g. appraisals, coping, PCE) and satisfaction with performance. The findings highlight the complex nature of the organizational stress process in sport performers and help to develop a more complete understanding of stress transactions.

Data collected in this study support and extend previous research examining organizational stressors in sport and the situational properties of these demands. In line with previous research [e.g. 1], this study demonstrates a wide range of organizational stressors that high-level sport performers encounter. In addition, the findings support the results of Didymus and Fletcher [2] because there appears to be a link between the situational properties of stressors and sport performers' appraisals. This study extends previous research

by providing a more detailed examination of transactional stress theory [8] and the relationship between stressors, situational properties and appraisals. To illustrate, the findings show that the stressors (e.g. training structure) that were underpinned by more than one situational property were associated with more than one transactional alternative (e.g. threat, harm/loss), whereas the stressors (e.g. spectators) that were underpinned by one situational property were largely associated with one transactional alternative (e.g. challenge). Thus, it appears that different situational properties can underpin one stressor at the same or at different points in time and that these properties may be influential in determining the transactional alternatives that an athlete experiences. This observation may explain why individuals cognitively react to organizational stressors in different ways and why positive and negative appraisals are experienced in response to similar situations.

Five of the seven situational properties proposed by Lazarus and Folkman [8] were reported to be influential in participants' organizational stress experiences, the exceptions being temporal uncertainty and imminence. This finding partially supports the results of previous research [9], which demonstrated that all of the situational properties were relevant to sport performers. Didymus and Fletcher [2] found that imminence was associated with the greatest number of threat appraisals and, therefore, it is surprising that the participants in the present study did not perceive the imminence of an event to be influential in their stressful experiences. The performers studied in Didymus and Fletcher [2] operated within an individual sport, whereas the participants in the current study engaged in a team sport, and thus the context in which the performers were operating provides one possible explanation for these contrasting findings. Alternatively, the different personalities of the participants may have influenced the situational properties that were perceived to underpin the stressors experienced. Indeed, Lazarus [10] suggested that although appraisals are commonly based on subtle environmental cues, 'personality variables, such as goals, situational intentions, and

personal resources' (p. 81) are also influential in appraising.

Turning to the transactional alternatives experienced by the participants, in line with previous research [e.g. 2] some of the stressors (e.g. travel, relationship with the coach) reported in this study were associated with threat and harm/loss appraisals. However, this study extends previous research by suggesting that, while sport performers often appraise organizational stressors as a threat or with a sense of harm/loss, these stressors are also associated with challenge appraisals. While some of the stressors experienced were predominantly associated with one transactional alternative, the majority of the stressors (e.g. the coach and his coaching style, interaction with teammates, selection, diet and dehydration) were appraised in different ways. This finding highlights the complex nature of organizational stress transactions [cf. 4]. From a transactional stress perspective, a confluence of person (e.g. values) and situation (e.g. properties of stressors) factors results in individualised and convoluted appraisal processes [8]. Thus, the intricate nature of the transactional alternatives that were associated with organizational stressors in this study may be due to the environmental and personal factors that were present in each specific transaction.

With reference to the ways in which the participants coped, problem solving was the most commonly reported family of coping. This supports previous research that has highlighted problem solving as a commonly used strategy to manage organizational-related demands [3,11]. While the results suggest that problem solving was the most commonly used family of coping, it was associated with both performance satisfaction and dissatisfaction. This finding demonstrates that frequent use of problem solving was not necessarily helpful in managing the negative outcomes of stress. Thus, there may have been a misfit between the objective situation, the appraisal of the situation and the coping strategy employed [e.g. 14], which contributed to dissatisfaction with performance. The findings of this study extend

previous coping research [e.g. 32] by demonstrating the variety and complexity of coping strategies used both in isolation and in combination. Utilisation of Skinner et al.'s [12] more sensitive categorisation of coping allowed these coping complexities to be illuminated.

The findings of this study provide partial support for the choice of coping strategy model of coping effectiveness [15] because some ways of coping (e.g. escape) were, on average, perceived to be more effective than others. However, other ways of coping (e.g. problem solving) were not perceived to be inherently effective or ineffective. Thus, the results also suggest that the effectiveness of coping may depend on either the fit between the objective situation, the appraisal of the situation and coping [e.g. 14]; the automaticity of coping [17]; or the belief that an individual has in his or her ability to execute specific ways of coping [18]. Some of the current findings that relate to coping with organizational stressors are inconsistent with previous research. For example, while other researchers [e.g. 3] have suggested that support seeking is beneficial for coping with organizational stressors, our results suggest that support seeking is associated with both performance satisfaction and dissatisfaction. Thus, the current findings indicate that support-seeking is a 'double-edged sword' [cf. 33] and are in line with Beehr and McGrath [34] who proposed that support seeking can exacerbate stressful encounters by either failing to provide helpful resources or by creating conditions that facilitate feelings of stress.

The participants were most often dissatisfied with their performance when they encountered stressors relating to logistical and environmental issues. Specifically, selection was one of the stressors in this general dimension that was commonly associated with performance dissatisfaction. This stressor is likely to hold high importance for the athletes in this study because the outcome of selection can shape their short- and long-term hockey careers. Importance is a key component of primary appraisals [35] and high levels of task importance have been shown to be significantly related to high levels of anxiety [36]. Further,

it has been suggested that heightened anxiety leads to maladaptive coping, which can in turn lead to reduced performance [37]. Thus, the associations between the importance of the stressor experienced, anxiety intensity, coping and performance may explain why selection, for example, often led to dissatisfaction with performance. Consistent with sport psychology researchers who have used objective measures of performance [e.g. 38], the results of this study illustrate that challenge appraisals were consistently associated with performance satisfaction. Thus, subjective performance satisfaction appears to be a useful measurement when objective measures of performance are unobtainable [cf. 39].

In terms of the praxis of this study, three important implications are evident. First, the results suggest that some organizational stressors (e.g. relationship with the coach, team atmosphere and support, travel) were typically appraised as a threat or with a sense of harm/loss and that these transactional alternatives were most often associated with performance dissatisfaction. Thus, practitioners should aim to minimise the frequency of these stressors by developing optimal coach-athlete relationships, training environments and competition situations. Notwithstanding, since previous research has suggested that some organizational-related demands are an inevitable part of high-level sport performance [2,4], consultants should also develop sport performers' abilities to appraise stressors as a challenge by using techniques such as cognitive restructuring. Second, consultants and coaches should emphasise the link between challenge appraisals and performance satisfaction to develop athletes' understanding of the link between positive appraisals and subjective performance. Third, high PCE was not necessarily related to performance satisfaction and thus, further to focusing on the ways of coping that are effective in alleviating the negative outcomes of stress, practitioners should encourage performers to understand the ways of coping that are effective in contributing to performance satisfaction.

A notable strength of this study relates to the focus on transactional pathways, which,

as noted, has important applied implications. Another strength is the minimal time delay that occurred between performers' stressful experiences and their recall of those experiences. The aim here was to facilitate accurate and complete recall. Nonetheless, the findings should be considered in light of some potential limitations. For example, while the visual analytical diagrams used in this study provide the reader with useful information regarding transactional pathways between components of organizational stress transactions, the diagrams portray linear processes that simplify the transactional nature of stress. In addition, the performance satisfaction data should be interpreted with caution because of the limitations of retrospective recall, the influence of outcome-dependent recollection and the multiple other potential factors that can shape athletes' satisfaction with their performance.

This study has advanced understanding of potential transactional pathways between key components of the organizational stress process. The results support previous research that highlights appraising as the pivotal aspect of stress transactions [2]. Thus, research exploring appraisal-focused interventions is required if the aim is to better understand how to optimise appraisals and facilitate performance satisfaction. Secondary level stress management interventions that include cognitive-behavioural based techniques may represent one such research avenue. Researchers may consider using the cognitive-motivational-relational theory of emotions [10] as a theoretical framework to underpin future research on the dynamics of transactionalism. This would allow further differentiation within appraisal data (e.g. threat, challenge, harm, benefit) and would provide opportunities for emotions to be explored as an integral part of stress transactions. One further opportunity for future research relates to examinations of the bidirectional pathways between key components of organizational stress transactions.

## Conclusion

This study is the first to illuminate potential transactional pathways between

518 organizational stressors and their underlying situational properties, appraisals, coping, PCE
519 and subjective performance satisfaction. The findings emphasise the complex nature of
520 performers' organizational stress transactions and add to the theoretical and practical
521 knowledge bases by facilitating a more complete understanding of these transactions.
522 Appraising appears to be the pivotal element in organizational stress transactions that seems
523 to influence whether an athlete will be satisfied or dissatisfied with her performance. Indeed,
524 performance satisfaction was most likely when the stressors were appraised as a challenge
525 and therefore, practitioners should encourage athletes to make positive appraisals of the
526 demands encountered. An advanced battery of stress management techniques and ways of
527 coping is required to optimise athletes' appraisals and alleviate the negative outcomes of
528 organizational stress.

## References


1. Arnold R and Fletcher D. A research synthesis and taxonomic classification of the organizational stressors encountered by sport performers. *J Sport Exerc Psychol* 2012; 34: 397–429.
2. Didymus FF and Fletcher D. Getting to the heart of the matter: A diary study of swimmers' appraisals of organisational stressors. *J Sports Sci* 2012; 30: 1375–1385.
3. Kristiansen E, Murphy D and Roberts GC. Organizational stress and coping in U.S. professional soccer. *J Appl Sport Psychol* 2012; 24: 207–223.
4. Fletcher D, Hanton S and Mellalieu SD. An organizational stress review: Conceptual and theoretical issues in competitive sport. In: Hanton S and Mellalieu SD (eds) *Literature reviews in sport psychology*. Hauppauge: Nova Science, 2006, pp.321–374.
5. Hanton S, Fletcher D and Coughlan G. Stress in elite sport performers: A comparative study of competitive and organizational stressors. *J Sports Sci* 2005; 23: 1129–1141.
6. Fletcher D, Hanton S, Mellalieu SD, et al. A conceptual framework of organizational stressors in sport performers. *Scand J Med Sci Sports* 2012; 22: 545–557.
7. Tabei Y, Fletcher D and Goodger K. The relationship between organizational stressors and athlete burnout in soccer players. *J Clin Sport Psychol* 2012; 6: 146–165.
8. Lazarus RS and Folkman S. *Stress, appraisal, and coping*. New York: Springer, 1984.
9. Thatcher J and Day MC. Re-appraising stress appraisals: The underlying properties of stress in sport. *Psychol Sport Exerc* 2008; 9: 318–335.
10. Lazarus RS. *Stress and emotion: A new synthesis*. New York: Springer, 1999.
11. Didymus FF and Fletcher D. Swimmers' experiences of organizational stress: Exploring the role of cognitive appraisal and coping strategies. *J Clin Sport Psychol* 2014; 8: 159–183.
12. Skinner EA, Edge K, Altman J, et al. Searching for the structure of coping: A review

and critique of category systems for classifying ways of coping. *Psychol Bull* 2003; 129: 216–269.

13. Tamminen KA and Holt NL. A meta-study of qualitative research examining stressor appraisals and coping among adolescents in sport. *J Sports Sci* 2010; 28: 1563–1580.
14. Folkman S. Making the case for coping. In: Carpenter BN (ed) *Personal coping: Theory, research and application*. Westport: Praeger, 1992, pp.31–46.
15. Eubank M and Collins D. Coping with pre- and in-event fluctuations in competitive state anxiety: A longitudinal approach. *J Sports Sci* 2000; 18: 121–131.
16. Nicholls AR. Effective versus ineffective coping in sport. In: Nicholls AR (ed) *Coping in sport: theory, methods, and related constructs*, Hauppauge: Nova Science, 2010, pp.263–276.
17. Gould D, Eklund RC and Jackson SA. Coping strategies used by US Olympic wrestlers. *Res Q Exerc Sport* 1993; 64: 83–93.
18. Haney CJ and Long BC. Coping effectiveness: A path analysis of self-efficacy, control, coping and performance in sport competitions. *J Appl Soc Psychol* 1995; 25: 1726–1746.
19. Stake R. Qualitative case studies. In: Denzin N and Lincoln Y (eds) *Handbook of qualitative research*. 3rd ed. London: Sage, 2005, pp.443–466.
20. Sparkes AC and Smith B. *Qualitative research methods in sport, exercise, and health: From process to product*. London: Routledge, 2014.
21. Patton MQ. *Qualitative research and evaluation methods*. 3rd ed. Thousand Oaks: Sage, 2002.
22. Holloway I. *Basic concepts for qualitative research*. Oxford: Blackwell Science, 1997.
23. Rolfe G. Validity, trustworthiness and rigour: Quality and the idea of qualitative research. *J Adv Nurs* 2006; 53: 304–310.

24. Hsieh HF and Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res* 2005; 15: 1277–1288.
25. Merriam SB and Tisdell EJ. *Qualitative research: A guide to design and implementation*. 4th ed. Thousand Oaks: Jossey–Bass, 2016.
26. Potter WJ and Levine-Donnerstein D. Rethinking validity and reliability in content analysis. *J Appl Commun Res* 1999; 27: 258–284.
27. Sparkes AC and Smith B. Judging the quality of qualitative inquiry: Criteriology and relativism in action. *Psychol Sport Exerc* 2009; 10: 491–497.
28. Smith J and Deemer D. The problem of criteria in the age of relativism. In: Denzin N and Lincoln Y (eds) *Handbook of qualitative research*. 3rd ed. London: Sage, 2005, pp.877–896.
29. Tracy S. Qualitative quality: Eight 'big tent' criteria for excellent qualitative research. *Qual Inq* 2010; 16: 837–851.
30. Sparkes AC and Partington S. Narrative practice and its potential contribution to sport psychology: The example of flow. *Sport Psychol* 2003; 17: 292–317.
31. Day S. A reflexive lens: Exploring dilemmas of qualitative methodology through the concept of reflexivity. *Qual Soc Rev* 2012; 8: 60–85.
32. Holt NL and Hogg JM. Perceptions of stress and coping during preparations for the 1999 women's soccer world cup finals. *Sport Psychol* 2002; 16: 251–271.
33. Kirkcaldy BD and Furnham A. Coping, seeking social support and stress among German police officers. *Eur Rev Appl Psychol* 1995; 45: 121–125.
34. Beehr TA and McGrath JE. The methodology of research on coping: Conceptual, strategic, and operational-level issues. In: Zeidner M and Endler NS (eds) *Handbook of coping*. New York: Wiley, 1996, pp.65–82.
35. Schneider TR. Evaluations of stressful transactions: What's in an appraisal?

*Stress Health* 2008; 24: 151–158.

36. Nie Y, Lau S and Liau AK. Role of academic self-efficacy in moderating the relation between task importance and test anxiety. *Learn Individ Differ* 2011; 21: 736–741.

37. Giacobbi PR and Weinberg RS. An examination of coping in sport: Individual trait anxiety differences and situational consistency. *Sport Psychol* 2000; 14: 42–62.

38. Moore LJ, Vine SJ, Wilson MR, et al. The effect of challenge and threat states on performance: An examination of potential mechanisms. *Psychophys* 2012; 49: 1417–1425.

39. Blecharz J, Luszczynska A, Scholz U, et al. Predicting performance and performance satisfaction: Mindfulness and beliefs about the ability to deal with social barriers in sport. *Anxiety Stress Coping* 2014; 27: 270–287.

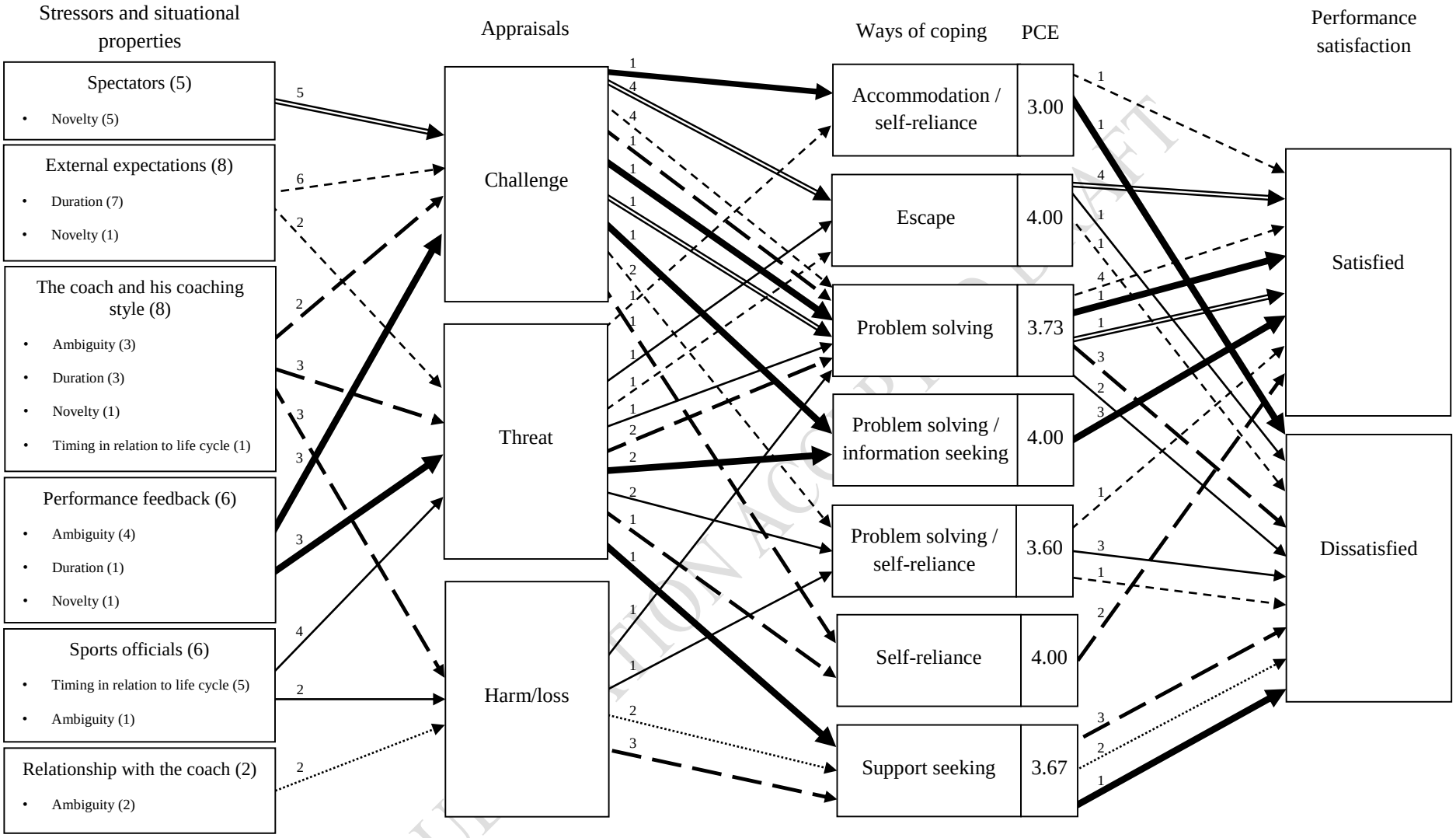


**Figure 1.** Visual analytical diagram relating to leadership and personnel issues. Numbers above each line demonstrate the frequency analysis for each component of the stress transactions. The format of the arrows allows the transactional pathways between stressors, appraisals, ways of coping, and subjective performance satisfaction to be followed. The same frequency and formatting procedures have been applied to each figure within the manuscript. *Note.* PCE = perceived coping effectiveness.

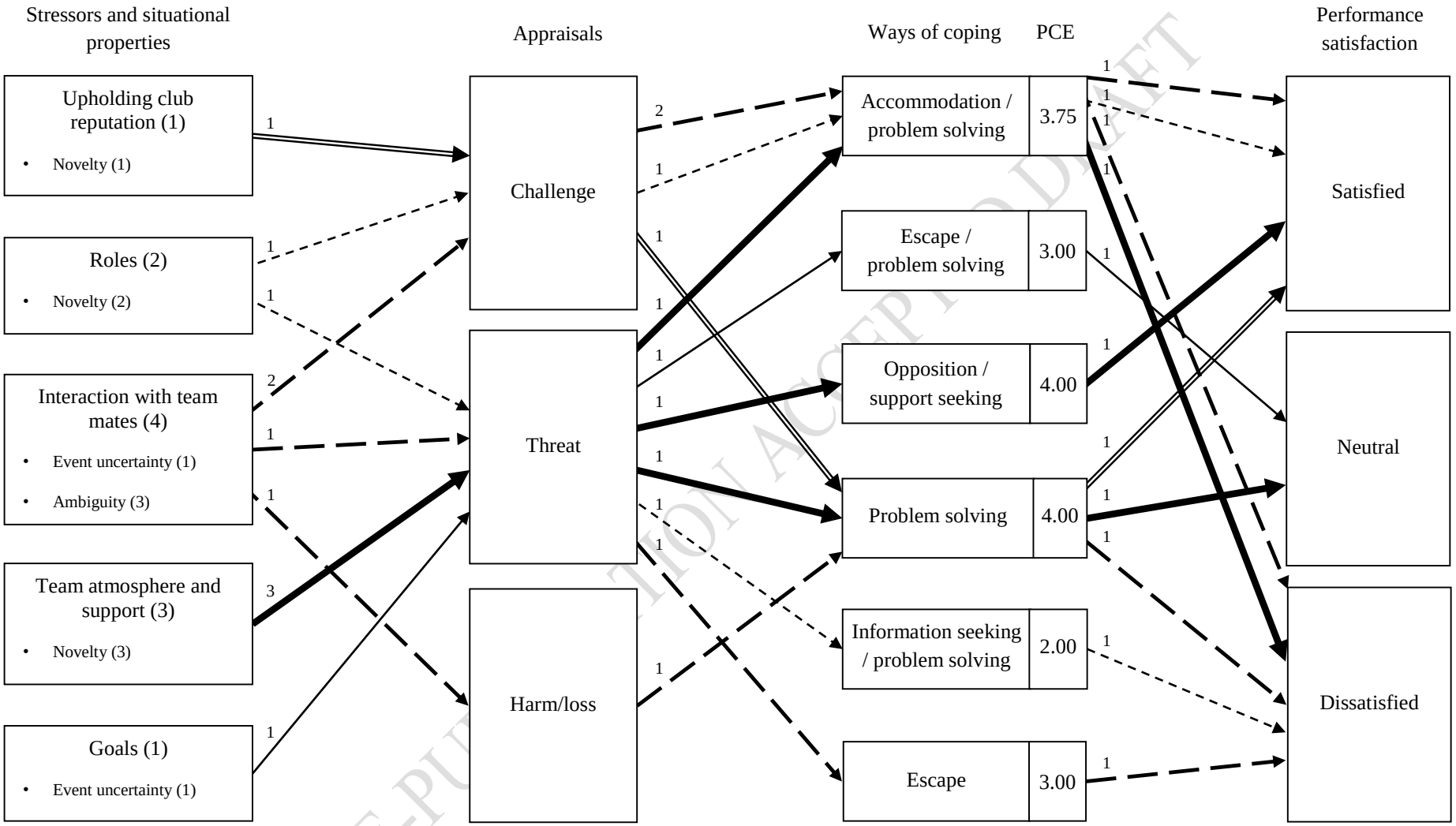


**Figure 2.** Visual analytical diagram relating to cultural and team issues.

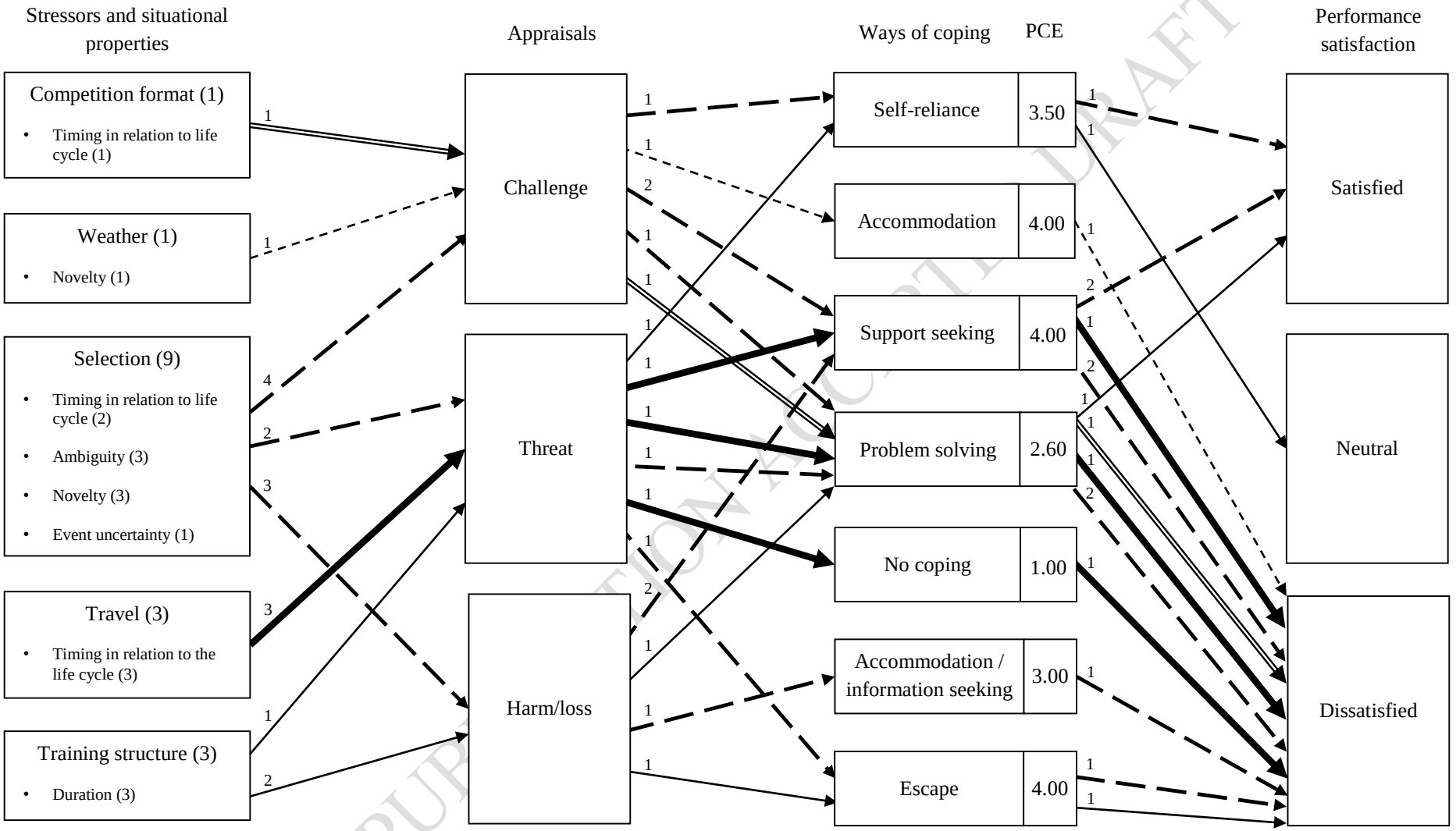


**Figure 3.** Visual analytical diagram relating to logistical and environmental issues.

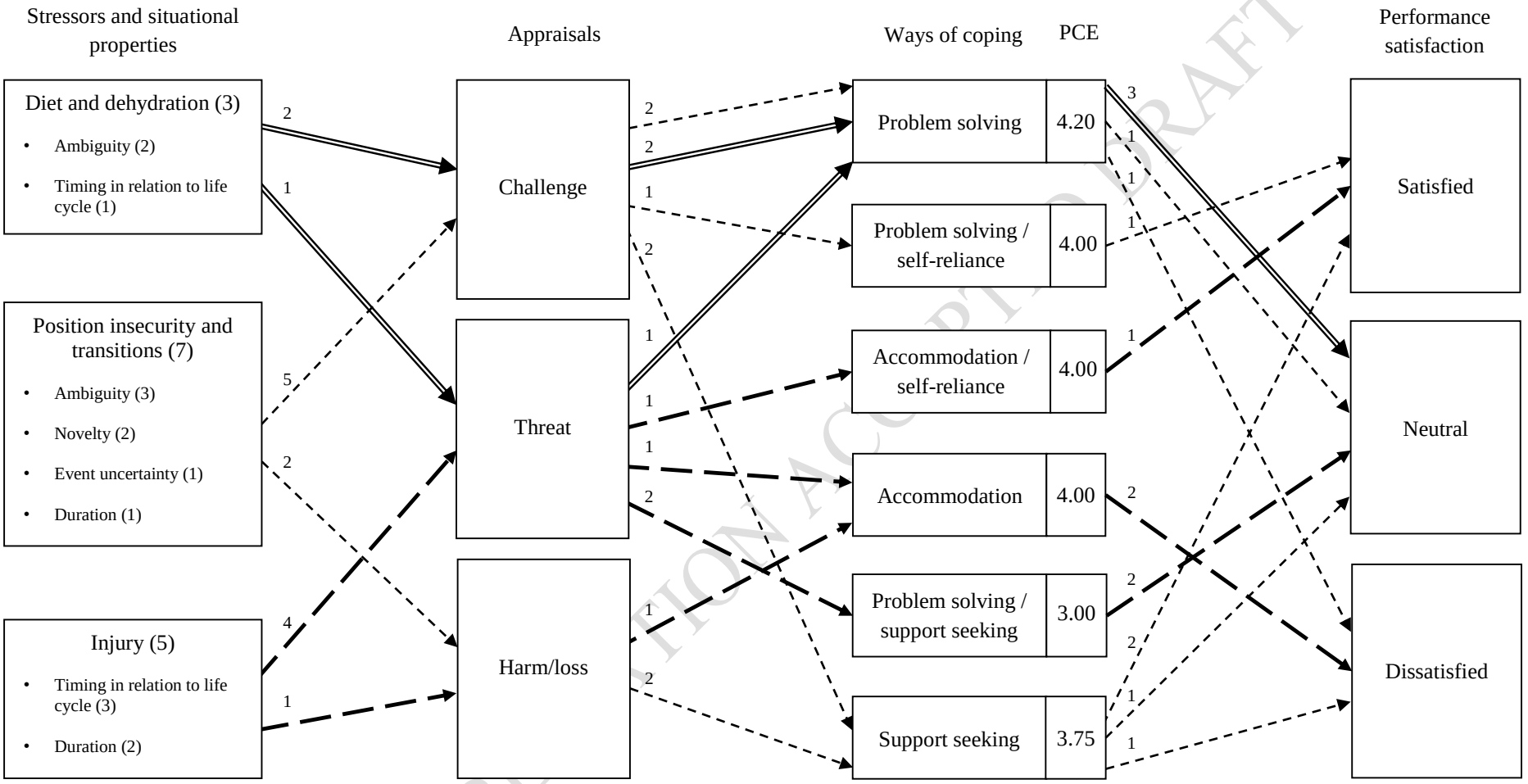


**Figure 4.** Visual analytical diagram relating to performance and personal issues.