The coach and the athlete: an attributional analysis

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The coach and the athlete: an attributional analysis

by

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ABSTRACT

Within competitive sport, the coach-performer relationship is of central importance to the performance enhancement process. Such relationships may develop over many years, with effective communication and mutual understanding core components.

Despite the obvious importance of the coach-performer relationship, very little is known about coach-performer compatibility, especially from a cognitive perspective. Attribution theory has been shown to be useful in explaining behaviour, cognitions and affect, both in achievement and social settings. A key feature of this approach has been the emergence of what has been termed ‘actor-observer differences’; this has been little examined within sport psychology. Where attribution theory has been applied in sport, it has tended to focus exclusively on the performer.

The aim of this research, therefore, is to explore coaches’ and their performers’ attributions, and specifically to examine the presence or otherwise of coach-performer attribution differences.

In the first study coaches’ attributions and emotions following significant successful and less successful events involving their performers were recorded. Analyses revealed a large number of attribution-emotion associations, especially for ‘less satisfied’ and ‘more surprised’ coaches. For example, ‘effort’ and ‘personality’ attributions are each highly associated with five emotions, with ‘personality’ attributions having strong associations with affect across satisfaction groups. These findings are contrasted with previous studies exploring performers’ attribution-affect relationships.

A subsequent longitudinal study required coaches and their performers to keep a log of significant training and competition events, including their goals, degree of attainment and subsequent attributions. Coach and performer log entries were then contrasted. In addition, each member of the eight coach-performer dyads was interviewed on a four-weekly basis to explore further the significant sports
events logged. Transcripts of these interviews were coded using the Leeds Attributional Coding System. Log and interview data were then contrasted.

In relation to log data, group analyses revealed that the locus of causality dimension in particular might be critical when considering coach-performer compatibility. Findings suggest both successful and important events result in less compatibility on this dimension. Regarding individual dyads, results were more equivocal. Coaches and performers seem to agree more consistently on stability and controllability dimensions, suggesting greater agreement on the likelihood of outcomes reoccurring and the extent to which they have some control over them.

From the interview data it appears that whilst some coach-performer differences exist, they are less prevalent than in previous actor-observer research. Furthermore, individual dyads appear to function despite the presence of differences in some dimension scores.

The results are discussed in relation to Rejeski's (1979) model of coach-performer conflict and the methods adopted in these studies. It is concluded that the coach-performer relationship and attributional compatibility in particular are aspects of sport psychology requiring further investigation.
ACKNOWLEDGEMENTS

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Thanks are offered also to SportscoachUK (formally the National Coaching Foundation) and to Staffordshire University for their support in the early stages of this research, and latterly to the University of Huddersfield for its support in recent years.

Special gratitude must also be given to friends and family who have endured and supported me throughout this work, and especially to my Mum, Dad and Sister for their love and encouragement: this project is dedicated to them.
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Chapter 1. Introduction

Sport psychology has grown out of a recognition of the need to study the psychological determinants of sports participation and performance, and the application of psychological techniques available to render the sports performer better equipped to cope with the demands of sport. Within this multi-dimensional field, research has tended to focus on the performer and his or her interaction with the sports task (e.g., examining the effects of anxiety on performance). Despite the call by Larning in the first volume of the Journal of Sport Psychology for attention to be paid to the coach-performer relationship, relatively little attention to this has been paid in the research literature.

“One of the critical psychological considerations is the interaction of the personality of the coach ... and the athlete. Athletic performance can be enhanced or hindered by giving attention to the personality compatibility between the athletes and coaches” (Larning, 1979, p.267).

Whilst this personality compatibility may manifest itself in a number of important ways, of particular interest here are the causal explanations given by coaches and performers for sports outcomes and the influence the process of making them has on significant aspects of the coaching process, e.g., decision-making, goal-setting, coach and performer motivation.

Coaching has been defined by a number of researchers and practitioners (e.g., Fairs, 1987; Cross & Lyle, 1999), but most agree that coaching is a multi-dimensional process which is both dynamic and interpersonal and centred on improving performance toward some end competition. Opportunities for coaching as a career are growing and there are now approximately 10500 coaches registered with the SportscoachUK (formally the National Coaching Foundation) and, undoubtedly, many more that are not. Coach education has become an integral part of sports development over the last 15-20 years.

Despite this growth, it is only relatively recently that the coaching process itself has come under academic scrutiny (e.g., Cross & Lyle, 1999). A variety of theories and methods have been developed or adapted to examine group dynamics within sport. Within this broad area the coach-performer relationship has received
some, if limited, attention. Whilst there has been this "general lack of attention to coaching behaviour in sports performance research" (Cross & Lyle, 1999, p.viii), a review of sport psychology by Hardy and Jones (1992) identified a number of important relationships within sport in need of further study, one of which was that between the coach and performer. Outlining the approaches taken in the research literature, Hardy and Jones identify a number that are relevant here.

For example, Chelladurai's (1984) multi-dimensional model of leadership in sport has received a great deal of attention in sport psychology. Within this model the personal characteristics of the leader (considered here to be the coach), the performers' and coach's needs and desires, and the situational demands are considered. Congruence between the behaviour displayed by the leader (coach), the leader behaviour preferred by the performers, and the leader behaviour required by the circumstances in which they are exhibited are seen in this model as central to determining performance and satisfaction. Also relevant here, the personal characteristics of the leader and performers, in addition to situational characteristics, are seen as influencing leadership behaviour. Chelladurai and Saleh (1980) developed the Leadership Scale for Sports (LSS) to measure coaches' leadership behaviour and research using this device has generally supported the model. Although not the focus of this research, findings using this measure are seen as relevant to understanding the coach-performer dyad. Results obtained in studies using this approach have suggested that performers tend to prefer coaching that emphasises training and instruction and positive feedback, although the experience level of performers may mediate this finding; experienced performers tend to prefer more social support than inexperienced performers. Furthermore, males tend to prefer more social support than females (Chelladurai & Carron, 1983), although potential differences between same and cross-gender coach-performer relationships require further study (Hardy & Jones, 1992). However, this model may represent an oversimplification of the interactions between situation, coach and performer attributes, underplaying the role of perception and the influences on it. For example, it can be argued that the coach's actual behaviour is influenced by perceptions of the circumstances he or she is in and the perceived needs of the performers; these perceptions are themselves potentially distorted by a variety of cognitive, emotional and
motivational factors. Furthermore, no relative weighting is given to the antecedents of prescribed, preferred and actual behaviour: under what circumstances might each of the three antecedents of behaviour carry most influence? Another important question is to what degree are performers' preferences conveyed and understood by the coach?

Based on research in organisational psychology, Chelladurai and Haggerty (1978) proposed a number of important variables in need of consideration when examining dyadic decision-making processes in sport. Seven situational variables were identified as influential: time pressure, quality requirements, coach's relative information, problem complexity, acceptance requirements, coach's power and group integration. These variables were considered in relation to three decision-making styles: autocratic, participative and delegative. These can be seen to be relevant in the attribution process and may mediate the information processing undertaken. Findings using this approach have included participants' apparent preference for and the effectiveness of the autocratic style when under external stress (Rosenbaum & Rosenbaum, 1971), greater preference expressed by males over females for more autocratic decision-making (Chelladurai & Saleh, 1978), and experienced performers' preference for more autocratic decision-making than less experienced performers (Chelladurai & Carron, 1983). Also of interest here is the finding by Chelladurai, Haggerty, and Baxter (1989) that situational factors accounted for approximately three times more variance in performers' preferred decision-making style than did individual difference variables. This is seen to be consistent with findings in attribution research (e.g., Jones & Nisbett, 1972) that actors (those engaged in an act or behaviour) attribute their actions more to situational factors than internal factors, in contrast to observers for whom the opposite pattern is true (the so-called actor-observer effect). However, Hardy and Jones (1992) call for future research to focus on the specific situation-performer interaction across situations that occur rather than the global performer preferences and coaches' leadership behaviour evidenced in these studies.

The preoccupation with the sports performer is perhaps not surprising. As will be detailed later in the evaluation of the actor-observer effect, observers of behaviour tend to focus attention on the immediacy of the act and the actor and not the
surrounding spatial or temporal environment: perhaps sports scientists, too, have
tended to focus to too greater degree on the sports performer and not the factors
influential in the sport environment.

An approach to interpersonal compatibility which has received some attention in
the sports psychology literature, and seen as pertinent here, is Schutz’s (1966)
model of Fundamental Interpersonal Relations Orientation (FIRO). Schutz
developed a measuring device, the so-called Fundamental Interpersonal Relations
Orientation - Behaviour (FIRO-B) questionnaire. Initially for use in industrial
settings, it allows the researcher to measure individuals’ interpersonal styles in
terms of their need for three areas of behaviour: inclusion, control and affection,
both from the perspective of behaviour expressed toward others and that wanted
from others. The general principle is that interacting dyads are most compatible
when each individual’s need to give and receive behaviour in these three domains
is complementary to that of the dyadic partner (that is, each satisfies the other’s
behavioural preferences). For Schutz, group or dyadic performance is partially
dependent upon this compatibility.

Amongst the limited research in sport psychology using this approach some
interesting findings have been reported. For example, Pease, Locke and
Burlingame (1971) found that player-coach incompatibility, as measured with the
FIRO-B, was a factor in the player’s decision to leave the squad, although it
should be noted that this study was set within a school athletics programme and
may have included a number of confounding variables from outside sport.

Carron and Bennett (1977) studied effective interpersonal interactions between
coaches and performers in a number of sports. They found that inclusion
compatibility was most significant in distinguishing extreme compatible and
incompatible dyads, with the latter being characterised by detached, withdrawn
and isolated behaviour on the part of both the coach and the performer. Carron
and Garvie (1978) found that levels of withdrawn from and communication with

---

1 It should be noted that some studies found that incompatibility lead to greater performance
effectiveness; the degree of face-to-face (Hill, 1975) contact and the nature of the task (Landers &
Luschen, 1974) were seen as important mediating factors.
the coach (indicating inclusion behaviour) were significantly related to subjectively measured performance.

However, in a subsequent study, Home and Carron (1985) found that none of the FIRO-B variables discriminated compatible and incompatible dyads but, rather, discrepancy between preferred and perceived reward behaviour (measured using the LSS) was the most accurate indicator of compatibility.

This approach may be of particular relevance when two attributors work interactively together; it has, however, less application for self-attributions. Schutz’ need areas may act to bias or confound the type of information selected and used in the attribution process.

From the above it can be seen that a number of approaches have been adopted when examining the coach-performer relationship.

Since the 1950s an approach which has received considerable attention in various areas of general psychology (e.g., educational, clinical, interpersonal) is attribution theory, itself a collection of related theoretical and empirical contributions by numerous authors (Fiske & Taylor, 1991). Attributions are the causes individuals ascribe to their own or others’ actions or the outcomes of people’s behaviour. A number of theories are reported in the next chapter, but common to these approaches is the belief that people search for causes for observed or experienced events in their lives in order to predict and, hence, maintain some degree of control over them; that is, there is a basic need to answer the question why? (Hewstone, 1989). A distinction should be made here between attribution theory and attributional theories. The former is concerned with how perceivers use information to arrive at a causal explanation; the focus is on the antecedents of causal ascriptions and research is primarily concerned with testing theoretically-derived hypotheses (Hewstone, 1989). The latter attempts to predict, using the tenets of attribution theory, how people will respond to events in a particular domain (e.g., achievement settings, social situations), that is the consequences of attributions (Fiske & Taylor, 1991).
These approaches in social-cognitive psychology have been used to study aspects of human behaviour in a variety of contexts as disparate as helping behaviour, depression, family dysfunction, corporate market research and motivation in sport. The diversity of its use points to its robustness; however, within sport psychology it has been employed in a rather limited fashion focussing primarily on performers’ attributions and subsequent affect (Biddle, Hanrahan, & Sellars, 2001). Given its widespread use in interpersonal settings (Weiner, 1992), it is surprising that it has not been utilised to study interpersonal relations in sport, especially given the highly outcome-oriented nature of competitive sport and the often public quest for explanations for successes and failures. It could be argued that this is, in part, due to the lack of sensitivity of the measuring devices available and the difficulty of measuring attributions in their natural settings, issues addressed in the current research.

“Sports coaching is a normative activity. As such, it is underpinned by values, philosophies and ideologies” (Cross & Lyle, 1999, p.viii). From this position it can be seen that the process of coaching, including the interaction with the performer (and others), is ripe for attribution research: for example, how do these values and philosophies affect the attribution process? Since attribution (and attributional) theory suggests causal ascription affects future behaviour, decisions and motivation (Biddle, 1993), and can be the basis for interpersonal conflict (Rejeski, 1979), it seems a highly appropriate medium through which to explore the coach-performer relationship.

Previous attribution studies in sport psychology have tended to be quantitative, looking for patterns of attributions or differences between situations, experimental conditions, or groups of individuals. Developments within other sub-disciplines of psychology have created new measuring tools, allowing qualitative and quantitative methods to be combined where appropriate. A preparedness to utilise an eclectic approach to research has been called for by a number of applied sports scientists and researchers (e.g., Hardy & Jones, 1992). It is the intention of this research project to combine qualitative and quantitative approaches to further reveal sports coaches’ and performers’ causal beliefs and evaluate their potential impact on compatibility and conflict.
In the next chapter an overview will be given of the major attribution theories, followed by an examination of key research findings pertinent to the current study.
Chapter 2. Review of Literature

Introduction

This review of literature will consider first the major models in attribution theory that have underpinned most of the research in the area; in doing so, this will provide a historical overview of the field. It will also form the basis from which to demonstrate how attribution research has moved from a narrow application of attribution theory in intra-personal settings to more diverse applications at a variety of social levels.

This will be followed by an examination of the most commonly used methods of attribution measurement. Where pertinent, specific application to sports settings will be reviewed. In order to place attributions in context, and to consider the major facets of Rejeski’s (1979) model of attributional conflict which underpins the current research, antecedent conditions affecting causal ascription and the consequences of making attributions will then be considered. Therefore:

• the initial part of the review will reflect the largely intra-personal focus of attribution research in sport;
• in order to evaluate the potential for attributional conflict, inter-personal considerations will then be reviewed, including the methods available to assess attributions in interpersonal settings and the significance of verbal communication on attribution processes;
• the review will conclude by considering recent advances in the assessment of attributions in discourse and making the case for such an approach to the study of coach-performer compatibility and potential conflict.

What are attributions and why are they important?

Attributions are statements made by people about the causes ascribed to their own or others’ actions or behaviour. This expression of causal belief is also labelled *causal explanation* (Munton, Silvester, Stratton, & Hanks, 1999). People search for causes for observed or experienced events in their lives in order to predict and hence maintain some degree of control over future events (Hewstone, 1989). Heider (1944, 1958) is credited with bringing to the attention of social scientists the significance of attributions as an area worthy of explicit study; his model of
naive psychology is outlined below. However, before the early theoretical models are presented, some points of clarification are required. The distinction has been made between four levels of explanation in social psychology (Doise, 1986): levels I and II refer to intra-personal and inter-personal explanation and have been the primary focus of most attribution research. Levels III (inter-group) and IV (societal) have received much less attention in the research literature. In relation to attribution research, Hewstone (1989) considers all four levels to be social in the sense that attributions are based on social information as a result of social interaction, attributions are the causes of people's actions, and attributions are social in that groups or societies may share explanations due to socialisation and common experience.

There is some debate in the literature concerning the distinction between causes and reasons (Munton et al., 1999). Whilst this may seem an issue of semantics, it is worth clarifying the position here. A cause may be considered to be "that which brings about a change", whereas a reason is "that for which change is brought about" (Buss, 1978, p.1311), although others have argued that a reason is merely a specialised type of cause (Kruglanski, 1975). Fiske and Taylor (1991) suggest the need to distinguish the more commonly asked what brought about an outcome (cause) and why did it occur (reason).

This distinction aside, the study of attributions has been conducted in a range of social, health, clinical and achievement settings (Biddle et al., 2001) and has received attention in the sport psychology literature since the 1970s, although this has declined through the 1990s.

Historical overview of the major attribution theories
The early attribution theories are presented here, although many of the associated propositions have since been modified or received qualification. However, as stated by Hewstone (1989, p.29), they "ushered in the halcyon days of attribution theory... (and) have all been paid the tribute of unrelenting criticism".

In his original work, Heider (1944) considers the significance of unit formation as central to the attribution process. For Heider, the causes (or origins) and their
subsequent effects, the actor and the act, make up a causal unit and by studying the relationship between cause and effect, inferences about the event can be made. For Heider (1944), attributions to the person were more likely than situational attributions since the act and the actor become inextricably linked and, therefore, persons are seen as the "prototype of origins" (Heider, 1944, p.359). For Heider, this often led to an underestimation of situational factors, especially when an act was considered intentional; this phenomenon he referred to as the fundamental attributional error.

Heider's subsequent work, 'The Psychology of Interpersonal Relations' (1958), focussed on naïve (or common sense) psychology, where common sense was seen to guide behaviour. Here, the intention of actors to commit an act was seen as significant in inferring dispositional causes. For Heider, actions are more likely to be seen as intended if they are goal-directed (he termed equifinality), if the person is seen as the agent of the action, rather than environmental conditions (local causality), and where the person exerts effort to achieve the outcome (exertion).

Associated with this approach are some fundamental assumptions. Firstly, one must understand how people perceive and describe their social world in order to explain behaviour. Secondly, humans have a basic desire to control and make predictable their environment through explanations of their own and others' behaviour. Thirdly, the process of perceiving social actions is similar to that of perceiving objects; therefore, to understand behaviour, people tend to look for dispositional qualities of the actor (Biddle et al., 2001). Fiske and Taylor (1991) suggest that Heider's common-sense psychology can best be understood studying "the natural language that people employ to describe their experience" (p.24). However, this has often been ignored in attribution research.

Heider's works were the catalyst for many subsequent theories and models of causal attribution, some of which follow here.

Jones and Davis' (1965) theory of correspondent inferences focuses on other person attributions rather than self-attributions and is, therefore, of significance
here. For Jones and Davis, attributors attempt to infer that behaviour and the intention that caused it correspond to some stable trait of the actor (Hewstone, 1989). Therefore, in this model the attribution of intention must precede a dispositional inference. To do this the perceiver must consider that the actor knew the potential consequences of the act and had the choice to act differently. Since some dispositions are clearly not intended, e.g., shyness, this approach is only relevant for actions which have some degree of choice and not involuntary occurrences (Hewstone, 1989). However, as Hewstone (1989, p.16) notes, "perceived freedom of choice" is perhaps of most relevance for inferring intention. Jones and Davis suggest that the perceiver contrasts the consequences of chosen and non-chosen actions, using the non-common effects principle. That is, a correspondent inference is made when the consequences of an act are relatively unique or distinctive and by considering the social desirability of the act: the less socially desirable an act, the stronger the correspondent inference.

This assessment of others’ dispositional qualities is subject to at least two biases. If the actions of another affect a perceiver’s interests, that is they have hedonic relevance, then the likelihood of making a correspondent inference and, hence, a dispositional ascription, increases (Fiske & Taylor, 1991). It would seem likely that in a coach-performer relationship hedonic relevance would be relatively high. The coach’s training programme for the athlete is highly likely to be perceived as fundamental to the athlete’s preparation for competition and the athlete’s performances are highly influential on the coach’s reputation.

In addition to hedonic relevance, the perceiver may perceive that the actor intended to bring about the outcomes experienced. This association between the actor’s intention and the subsequent behaviour/outcome is referred to as personalism. When operating, the perceiver is more likely to infer disposition and experience associated heightened affect (positive or negative depending on the behaviour or outcome).

Other potential limitations to this approach include research findings which indicate that perceivers often attend to occurrences, and not non-occurrences which Jones and Davis posit as a significant part of their theory (Nisbett & Ross,
1980). Furthermore, expectancy-confirming information may be of greater value to the perceiver than this theory would suggest (Crittenden, 1983). One further limitation stated by Hewstone (1989) is the erroneous assumption sometimes made that dispositional and causal attribution processes are necessarily similar. Some researchers (e.g., Hamilton, 1988) have found that dispositional attributions are made more spontaneously and involve less cognitive effort than causal attributions (i.e., explanations).

Kelley’s (1967, 1972) focus within attribution research centres on the type of information that is processed in order to reach a causal attribution. He suggested two possible processes, one for when multiple sources of information are available from which to infer covariation of causes and effects, the other for when the attributor has only a single observation from which to infer causality from the configuration of factors that are plausible causes. Kelley (1967) developed his theory of covariation using an approach analogous to the statistical method of analysis of variance (ANOVA), which examines changes in a dependent variable (the outcome or event) following manipulation of the independent variable (the conditions or cause). For Kelley, attributors process information regarding the extent to which circumstances co-vary with the observed behaviour or events.

Various types of information help lay attributors arrive at a causal decision. The degree to which one person’s behaviour is similar to that of others in similar circumstances provides consensus information. Consistency information relates to the degree to which a person’s behaviour is constant over time when under the same circumstances. Finally, distinctiveness information refers to the extent to which a person’s behaviour differs between conditions or situations. Whilst support for this model was forthcoming (e.g., McArthur, 1972), Hewstone (1989) reminds us that there are various limitations to be borne in mind. For example, correlation cannot be used to infer causation, merely association. Perhaps of greater significance is the question of the degree to which perceivers actually seek out these three covariation information sources and, when they do, how skilled are they in using them? Some researchers (e.g., Alloy & Tabachnik, 1984) have suggested that perceivers often lack these skills. Finally, even when the
principles of the ANOVA appear to be adhered to, the actual information processing mechanisms may be very different.

Kelley developed a second model, the *configuration theory*, for when such covariation information is not present. Where data are incomplete, or the perceiver lacks the motivation to assess them, attributions can be made using *causal schemata*. Built up from past experiences of cause-effect relationships, these schemata guide the attribution process. Kelley outlines two schemata, the *multiple sufficient cause* (MSC) schema, where any one of a number of possible causes can by itself bring about the specified effect and is, therefore, most likely in commonly occurring events, and the more complex *multiple necessary cause* (MNC) schema, where a number of causes must all be present together to bring about the effect and, thus, most appropriate for atypical events (Weiner, 1992). The advantage of these and other schemata proposed by Kelley is that they allow perceivers to make attributions in the absence of complete information by providing a form of *causal shorthand* (Fiske & Taylor, 1984). Despite the appeal of such a model, Fiedler (1982), amongst others, has criticised this approach for lacking empirical support. Furthermore, it could be argued that causal schemata may be a rather complex model for a *common-sense* attribution process (Hewstone, 1989).

People with substantial domain experience may adopt more complex principles (Fiske & Taylor, 1991). The principles of the ANOVA model provide generalisations; however, sometimes attributions are based not on typical cases but on more extreme examples of behaviour (Kelley & Michela, 1980). Therefore, in addition to the covariation rule, other information-processing rules may operate, such as *similarity, temporal contiguity* and the *salience effect* (Fiske & Taylor, 1991).

Furthermore, people do not necessarily employ content-free attributional principles. The influence of communication on causal explanation has received some attention (e.g., Antaki, 1985) and is considered further below (see pages 60-64). However, the broader role of interaction in the attributing process has received attention only recently. Clearly, when faced with disappointment or
unexpected outcomes, many people turn to others for explanations and help. In
the sport context, the extent to which coach and athlete may look to each other for
a causal explanation has not been investigated. The social processes surrounding
the making of attributions has led some (e.g., Stratton, Munton, Hanks, Hard, &
Davidson, 1986; Sousa & Leyens, 1987) to call for methods to enable causal
explanations to be elicited from natural discourse.

Integration of the three preceding models has proved difficult; indeed the
products of such attempts (e.g., an integrated framework produced by Jones &
McGillis, 1976) have received little research focus. However, some
commonalities are evident:
• All three models consider how the perceiver mediates between an event
(stimulus) and causal inference (response).
• All models consider the perceiver as a layperson, attempting to explain the
surrounding world.
• All models seek to explain what and how information is used to reach an
• Each approach tends to focus on specific circumstances and attempts to model
the types of information used by the perceiver and the processes through
which this information passes, attempting to develop the rules of causal
ascription.

Although each has received critical comment, subsequent research foci have
drawn heavily on these early works. However, these classic theories have tended
not to be adopted in their original form in sports attribution research.

Of particular interest to those studying attributions in sport has been the work in
Weiner was instrumental in creating a taxonomy of causes. He suggests that
causes can be classified along a number of causal dimensions; arguably the first
was Heider's personal-environmental distinction which was subsequently
progressed by Rotter (1966) in his development of the internal-external
personality classification. Weiner proposes these dimensions are significant in determining subsequent psychological and behavioural consequences.

Weiner identified three causal dimensions: *locus of causality* (is the cause internal or external to the actor?), *stability* (does the cause vary over time or is it constant?), and *controllability* (can the actor exert volitional influence over the cause?). This classification enables any cause to be located within a 2x2x2 matrix of causal dimensions (see Table 1). For example, 'temporary effort' can be located as internal, unstable and controllable. This was a particularly important development as it allowed any cause to be classified according to these dimensions and enabled researchers to move away from designs in which subjects had to select from a limited number of previously identified, albeit salient, causes. This allowed the criticism that only a limited number of causes were presented to respondents to be addressed. For example, Roberts and Pascuzzi (1979) found that ability, effort, task difficulty and luck (the causes most commonly employed by those narrowly adopting the causal elements in Weiner's model) were used to explain only 45% of sporting outcomes.

**Table 1: Possible causes of achievement outcomes (Fiske and Taylor, 1991, p.51).**

<table>
<thead>
<tr>
<th>Internal</th>
<th>External</th>
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</thead>
<tbody>
<tr>
<td>Stable</td>
<td>Stable</td>
</tr>
<tr>
<td>Unstable</td>
<td>Unstable</td>
</tr>
<tr>
<td><strong>Controllable</strong></td>
<td>Some forms of teacher bias</td>
</tr>
<tr>
<td>Typical effort exerted</td>
<td>Temporary effort exerted</td>
</tr>
<tr>
<td>Aptitude</td>
<td>Task difficulty</td>
</tr>
<tr>
<td>Mood</td>
<td>Luck</td>
</tr>
</tbody>
</table>

These dimensions have endured in research across a range of contexts and the three-dimensional matrix has received factor-analytic support (Meyer, 1980). It will be seen later that additional dimensions have been added in some models and research designs, such as intentionality (Weiner, 1979), globality (Abramson, Seligman, & Teasdale, 1978), and excusability (de Jong, Kooman, &
Mellengergh, 1988), although Weiner (1986) has argued that these dimensions have failed to receive sufficient theoretical and empirical support.

Despite this criticism, there appears a need to look beyond the rather narrow dimensional focus adopted so far in sport psychology, which has tended to utilise Weiner's three-dimension approach.

**Attributions in sport research**

Sport attribution research relied initially on assessment inventories developed in other areas of psychology. Early studies adopted a checklist approach, where attributions were analysed individually (e.g., Biddle & Hill, 1988) or coded by dimension, allowing only limited interpretation of the findings. In the case of dimension coding there is also the danger of committing the *fundamental attribution research error*, whereby the researcher gives attributions dimensional qualities which are not consistent with the attributor's meaning.

The development of the Causal Dimension Scale (CDS; Russell, 1982) allowed respondents to rate their own attributions along a range of causal dimensions. This development spawned a variety of sport attribution research, although the dimension scales and the items within them are not without their critics. For example, Biddle (1988) has questioned whether intentionality and responsibility are conceptually related to controllability and whether evidence exists for separating these constructs. Furthermore, the CDS includes statements for intentionality and controllability which are potentially confounding (Biddle et al., 2001).

The successor to the CDS, the CSDII (McAuley, Duncan, & Russell, 1992), was developed in part through studies in the physical domain; therefore its use in sport can be made with some confidence. Since some researchers (e.g., Vlachopoulos, Biddle, & Fox, 1996) have reported children's difficulty in using the CSDII, a modified CSDII for use in the physical domain with children (CDSII-C; Vlachopoulos et al., 1996) has been developed, although this needs further psychometric testing (Biddle et al., 2001).
Sport attribution research will be considered in the following sections and relevant findings reviewed as appropriate. To do this, it is useful to consider the processes associated with causal analysis and ascription along a path of antecedents, causal attribution and consequences, in relation to social, cognitive and affective parameters. The following sections consider the antecedents and consequences of attribution-making.

Attributions: antecedents and consequences

Attribution antecedents
Given attributors' need to understand and control their social world, a major question in attribution research is, Why do people make the attributions they do? The early theories presented so far (those of Heider, Jones and Davis, Kelley) suggest attributors as logical, causal analysts. However, a number of researchers have made qualifications to these earlier attribution models. These suggest that information may be selectively coded, stored, recalled and used, and that this information processing is subject to various potential distortions (e.g., motivational and perceptual biases). Therefore, whilst the processing of information available at the time may follow aspects of the rules presented so far, this process is likely to be influenced by pre-existing beliefs already held by the attributor (Kelley & Michela, 1980). Furthermore, individuals may have particular predispositions to certain attributional styles because of their perceptual position, the hedonic relevance of the act, gender, level of maturation, previous experience and cultural heritage. Such differences may help to explain why two people disagree about the causes of an outcome and, hence, contribute to the potential for conflict. In the following sections, a number of biases and other factors influential to the attribution process and pertinent to coach-performer attribution research are reviewed.

One of the most commonly cited biases shown to exist in the attribution-making process is the fundamental attributional error (FAE). Ross (1977) defines the FAE as, "the tendency for attributers to underestimate the impact of situational factors and to overestimate the role of dispositional factors in controlling behaviour" (p.183). This bias has been shown in numerous studies (e.g., Nisbett
& Ross, 1980; Ross & Anderson, 1982), although it is not without its critics (see Funder, 1987).

This error has been explained in various ways. For example, it has been argued that the FAE is due to a perceptual bias; the actor's behaviour is more salient to an observer than the surrounding environment (Heider's, 1944, unit formation). Alternatively, other researchers (e.g., Peterson, 1980) have shown that memory over the passage of time tends to favour dispositional recall for self-attributions, although this tendency may be mediated by the focus of post-event information processing (Funder, 1982). Some researchers have found societal differences in the tendency to focus on dispositional versus situational causal factors. For example, Western societies tend to emphasise individual agency to a greater degree than Eastern cultures (e.g., Ybarra & Stephan, 1999). Furthermore, transient factors such as mood (Forgas, 1998) have been shown to influence the likelihood of committing the FAE.

Self-serving bias

"The tendency to take credit for success and deny responsibility for failure is known as the self-serving attributional bias" (Fiske & Taylor, 1991, p.78). This tendency has been shown to operate in a variety of settings, including sport (Biddle et al., 2001), and appears to intensify over time from event (Burger, 1986). The tendency to self-enhance by taking credit for success appears stronger than the tendency to self-protect by denying responsibility for failure (Millar & Ross, 1975). Responses to negative events would seem to be more susceptible to mediation by states, such as self-esteem (Campbell, 1986), whereby high self-esteem individuals attribute negative events more to external and unstable factors, with low self-esteem individuals tending to attribute internally.

Support for both cognitive (e.g., Millar & Ross, 1975) and motivational (e.g., Reiss & Taylor, 1984) explanations for these effects has been found in the literature and Fiske and Taylor (1991) suggest that it is likely that cognitive and motivational factors co-contribute to these effects. However, it should be noted that the reported differences on the locus of causality dimension might reflect
degrees of internality rather than real internal-external group differences (Biddle et al., 2001).

Santamaria and Furst (1994) explored the explanations given by elite student long-distance runners for their self-selected most and least successful races using the revised CDS-II. Results revealed significant differences between the most successful and least successful races on both the locus of causality and controllability (personal control, but not external control) dimensions, but no significant difference on the stability dimension. Specifically, for successful outcomes, explanations were more internal and controllable. There is, therefore, some support for the operation of a self-serving bias. The authors argue that the lack of significant difference findings for the stability and control-external dimensions might be due to the time-scale over which athletes had to recall outcomes, in some cases over 10 years, which it was argued would more severely affect these dimensions.

Egocentric bias
The phenomenon of taking more responsibility (as opposed to taking credit for success and denial of it for failure as in the self-serving bias) for a joint venture than would be ascribed by others is known as the egocentric bias. This bias may occur for a variety of reasons. It may be due to a motivation to take more credit than is due, i.e., a motivational bias, or alternatively, because a person can recall more readily the contribution made to a joint endeavour, an example of a cognitive or, more precisely, a memory bias. Researchers have put forward a number of possible explanations for such disparities in responsibility-taking: selective encoding and storage; differential retrieval; informational disparities; and motivational influences (Ross & Sicoly, 1979).

To illustrate the phenomenon, Ross and Sicoly's (1979) series of experiments looked at responsibility claimed for joint activity by married couples. They found that subjects provided more examples of their own input than of their spouse's and the greater the tendency to recall self-relevant behaviours, the greater was the overestimation of responsibility. This suggests that biases in attributions of responsibility are mediated by biases in availability.
Considering a more natural setting (explaining the turning point in a previously played basketball game), Ross and Sicoly (1979) found that greater availability for outcomes and responsibility for outcomes was given to team-mates than to opponents, suggesting a group-level effect, a so-called group egocentrism; this effect was regardless of the outcome. It was suggested that as this team played together and would continue to do so, this may have encouraged players to attribute to factors over which they could maintain some control. Subsequent experiments where subjects’ attention was manipulated led these authors to reconsider the findings from the basketball experiment, as players were asked to respond to ‘Our team won/lost our last game because ...’, focusing attention on their, and not the opposing, team. In examining these results collectively, it appears that encoding and storage, information disparities and motivational influences are not necessary determinants of the egocentric bias and that these biases may well be multi-determined (Ross & Sicoly, 1979). The two biases (availability and attributions of responsibility) appear significantly correlated, although causation cannot be inferred.

These biases may have implications for the coach-performer relationship. Differential taking or denying responsibility and/or credit for a performer’s outcomes could result in either positive consequences, e.g., the coach supporting the performer by accepting some responsibility following a poor performance, or the potential for conflict, e.g., disproportionately recalling one’s own contributions following successes.

Adding to the cognitive versus motivational bias debate, Cates-Zientek and Breakwell (1991) consider attributions at various stages of the attribution-making process: pre-, during, and post-game. Previous studies have tended to focus on retrospective attributions: those made after the result or outcome is known. Kelley (1967) has previously argued that attributors use causal schemata when developing attributions. Furthermore, Brawley (1984) has suggested that egocentric biases affect the information used in making causal ascriptions, citing cases of men's doubles tennis teams and coach-performer pairs who more easily remember their own input to team effort than their partners’. Others have found
the egocentric bias operating, internal attributions being made regardless of the outcome or perceived success (e.g., McAuley, 1985; Robinson & Howe, 1987).

Cates-Zientek and Breakwell propose that different information regarding the score, i.e., total uncertainty pre-game, partial uncertainty during the game and total certainty post-game, is available at each stage in the game. Furthermore, if the factors believed pre-game to be likely to influence the result are still considered so post-game, these expectations may influence the post-game attributions. Thus, if a particular quality is associated with an outcome (e.g., hard work with sporting success), such a belief may result in specific attributions of hard work for successful outcomes. The issue of this investigation was, therefore, whether these beliefs (or stereotypes) would be retained as outcome information became available.

Despite the limitation of only considering the contributions of ability, effort, luck and ease and difficulty of the game, data supported the notions of a self-serving bias and of the existence a schema operating. Winners' and losers' attributions changed over time: effort was considered less important at half-time and task-ease considered less important as the game progressed. Winners and losers differed only in external attributions, with losers' attributions to luck and task-ease/difficulty growing over time, the opposite being true for winners. These authors conclude that these findings support the self-serving bias in that the emphasis on external factors varies between the two groups over time. Ability and effort were also more credited for personal success across the three time measurements; again, only the external factor, ease of task, varied between winners and losers. Collectively, these results support a motivational bias rather than an informational one. They also indicate that causal schemata may exist in the form of pre-outcome expectations which, in this study, is suggested as probably a function of playing experience.

Of great significance to the present study is consideration of the need of coaches to understand the expectations and explanations given by their athletes for the future and past performances, in addition to their own. Cates-Zientek and
Breakwell call for athletes to undergo attribution training as part of the preparation for competition. This topic will be returned to later (see page 53).

**Biases in interpersonal settings**

Of particular interest in the present study is the impact of cognitive and motivational biases which may operate in close relationships. Brawley (1984) questioned whether such biases were present in an interpersonal relationship where mutual understanding and joint endeavour are paramount, such as the coach-performer relationship, i.e., Does each give credit where it is due? One in a series of Brawley’s studies aimed to determine if the availability bias occurred in the recall of both coaches and performers in on-going relationships in track athletics or swimming and whether the egocentric bias in allocations of responsibility occurred in these relationships. Employing a questionnaire design using bi-polar scales, results revealed that there are egocentric biases in both the recall of events and the making of responsibility attributions by coaches and performers. Both coaches and performers recalled more of their own personal inputs to their joint interactions and made more responsibility attributions than to their dyadic partner. Results of this study may be explained best by “differences in each person’s knowledge” of his or her separate input to joint interactions (Brawley, 1984, p.275). This study does show that egocentric biases may occur not only in competitive outcome settings but in a variety of sport settings. As Brawley suggests, this raises interesting questions for the study of actor-observer differences in long-standing interpersonal relationships. For example, memory bias may impact on coach-performer compatibility. When considering these effects in relation to close others, the term *ethnocentric* or *group-serving bias* is used (Hewstone, 1989).

**Group settings**

Taylor, Doria and Tyler (1983) were interested to see if the self-serving biases reported elsewhere were apparent in group task situations, where making self-serving attributions might be at the expense of group-serving interests, an issue clearly pertinent in team sports and coach-performer situations. Using a research design which allowed members of an established, *naturally-formed* group to attribute responsibility to any of the following: the self (internal); other members
of one's own group (external within group); forces that lay outside of the self and group (external), Taylor and Doria (1981) had found the existence of both self- and group-serving biases where the operation of one did not conflict with the other. Specifically, group members shared responsibility for successes and took disproportionately more personal responsibility for failures.

Taylor et al. (1983) explored the attributions made by ice-hockey team members for successes and failures over the duration of a season. Despite continual and cumulative failure (in terms of win-losses), they found team cohesion remained high throughout the season. Players consistently attributed more responsibility for failure to in-subgroups (the sub-groups in which the subject was a member, e.g., offense) and that they consistently assumed more personal blame whilst avoiding blaming others. It was suggested that such biases in a long-term group that worked together daily fostered positive interpersonal relationships. Furthermore, if all players adopted a similar group-serving bias, all players were in this way self-protecting (Taylor et al., 1983).

Bird, Foster, and Maruyama (1980) were interested in the consistency between self- and team-attributions for teams which varied in team cohesion. They used a 4-element and 2-dimension model (Weiner, 1974) of attributions, percentage win-loss as the measure of success and individual choice of success/failure questions as the measure of perceived success, to assess attributions both mid- and post-season. Mid-season results revealed no relation between either attribution dimension and cohesion. Post-season, stability, but not locus of causality, was related to cohesion, such that players perceiving their team to be cohesive showed more similar team- and self-attributions than did players perceiving lower cohesion. Further analyses revealed low team cohesion players made greater task attributions for their teams than for themselves and greater luck attributions for themselves than for the team. For players viewing their teams as high on cohesion, there was little difference in team- and self-attributions either for task or luck. No significant differences were found for either ability or effort attributions.
When considering team and individual attributions in relation to both perceived outcome and cohesion, results showed that high cohesion-success players made more internal attributions for their own successes than did low cohesion-success players. High cohesion-failure players made fewer internal attributions than did low cohesion-failure subjects. These results indicate self-attributions of high cohesion players remain high and do not become less egocentric. Overall, these findings point to the probability of cohesion affecting individual as well as team-oriented motivation.

In a study examining self-serving attributions in a competitive sport setting, Kimiecik and Duda (1985) identify four key considerations when assessing attributions made by young sport participants: subjective and objective meanings of success and failure; the importance of considering perceptions of competence when assessing sport attributions; the need to go beyond the four causal elements previously identified in the literature; and the influence of the method of assessing causal attributions on the major findings in attribution research.

Kimiecik and Duda's (1985) study considers the relationship between objective outcome, subjective outcome and the attribution process in children (boys, aged 9-12 years). Additionally, perceptions of competence were considered, since this additional factor was significant in interpreting the findings of earlier work (e.g., Spink & Roberts, 1980). Views of players' own competence and that of an opponent mediated attributions for objective outcomes and were necessary to distinguish between self-serving and information-processing attributions. Furthermore, the restriction of causal elements to the four categories suggested by Weiner, Frieze, Kukla, Reed, Rest, and Rosema (1971) has hindered previous research (see findings of Roberts & Pascuzzi, 1979). The process of recording of attributions may also be significant. For example, Elig and Frieze (1979) found that different methods of recording attributions (open-ended, structured and ipsative) yielded quite different responses.

Kimiecik and Duda compared open-ended and forced-choice methods. Results showed 75.9% of open-ended attributions could be classified as one of Weiner's four elements. Winners and losers did not significantly differ in terms of the
internal-external dimension. Ability was the most cited cause (43.2%) of a sports outcome. Interestingly, a relationship was found between game outcome and forced attribution which was not found in the open-ended format. The authors suggest that the method may alter the balance of the causes offered: in the forced format, clear self-enhancing and self-protecting biases were found for winners and losers respectively. However, when considering the perceived competency data, which showed that winners perceived their demonstrated competence higher than did losers, whereas losers rated the perceived demonstrated competency of opponents higher than did the winners, the authors suggest these biases can be re-interpreted as due to information processing.

Clearly there is a need for more research into self- and other-serving biases in naturalistic settings. The primary, although not exclusive, focus reported so far is on the locus of causality dimension. From previous studies it is clear that this dimension, more than others, seems to play the lead role in distinguishing groups of self and social perceivers.

Of interest in the present research, therefore, is the extent to which the preceding biases may occur in the attributions made by coaches and performers and the potential effects of these on coach-performer attributional compatibility.

**Individual differences**

In addition to situational and interpersonal factors that might affect the attribution-making process, researchers such as Rotter (1966) are interested in identifying individual differences in the propensity to make certain types of attributions. Rotter distinguished between the extremes of a continuum referred to as *locus of control*. At one extreme lay *internals*, people who believe in their ability to control the occurrence of life events; at the other extreme, *externals* consider factors beyond their control (e.g., luck, the behaviour of others) to be the causes of significant outcomes. Whilst Rotter recognised this propensity may not operate equally across all situations, he did regard it as a general, relatively stable individual characteristic. Rotter developed a locus of control scale which has been used in a number of domains (e.g., examining beliefs in political, achievement, health and learning domains; Fiske & Taylor, 1991). Despite
criticisms regarding validity (e.g., Weiner, 1986, who subsequently separated the aspects of locus of causality from control to form two distinct dimensions) and appropriateness for cross-cultural use (Strickland, 1988), locus of control has been used extensively in attribution research designs.

**Attributional style**

A question central to attribution research is whether individuals have a tendency to make certain types of attributions; in other words, Do people possess an attributional style? Attributional style is “a tendency to make particular kinds of causal inferences, rather than others, across different situations and across time” (Metalsky & Abramson, 1981, p.38). If such styles exist they could be considered significant in identifying potential interpersonal conflict in coach-performer relationships.

This question has been focal in attempts to develop an attributional model of depression. For example, it has been hypothesised by Abramson et al. (1978) that a particular attributional style mediates between negative events and subsequent depression. This may have application within a sports context where, for example, it would be helpful for coaches to know whether their sports performers have a tendency to attribute perceived failure as due to factors lying within or without their control.

Despite a number of researchers’ attempts to find an attributional style trait, results have been equivocal. For example, Peterson and colleagues, in an attempt to measure attributional style, developed the Attributional Style Questionnaire (ASQ; Peterson, Semmel, vonBaeyer, Abramson, Metalsky, & Seligman, 1982; Seligman, Abramson, Semmel, & von Baeyer, 1979). However, its use by Cutrona and co-workers failed to predict convincingly attributions for negative outcomes and, using confirmatory factor analysis, found only modest cross-situational consistency of attributional style (Cutrona, Russell, & Jones, 1985). These results lead Cutrona and colleagues to make a speculative suggestion that even domains might be conceptually too wide within which to consider consistency in attributions and suggest more narrow attributional equivalence classes (e.g., performances in major events as opposed to performance per se).
One of the reasons for the inconsistent findings might be the means used to collect attributional style data: the ASQ asks for the one major cause of each outcome, which tend to be hypothetical scenarios across a range of settings. Despite the benefits of such an approach, more meaningful, real life events might prompt causal analysis which differs from that produced in hypothetical settings, with explanations entailing a number of causal elements; the challenge then is to develop measures which can be used in such settings. Validity aside, if attributional style exists, the processes by which it exerts its influence need further exploration.

**Attributional style in sport**

In order to measure attributional style specifically within the domain of sport, Tenenbaum and colleagues developed the Wingate Sport Achievement Responsibility Scale (WSARS; Tenenbaum, Furst, & Weingarten, 1984). This measure does allow for attributions of causality to be assessed separately for team and individual sports. However, it only assesses the degree of responsibility taken for an outcome in sport measured on the locus of causality dimension and, therefore, has limited use.

Probably the most comprehensive sport-specific measurement of attributional style is the Sport Attribution Style Scale (SASS; Hanrahan, Grove, & Hattie, 1989). The development of this questionnaire was in response to previous studies’ failure to measure attributional style along all of the dimensions considered in the literature to be important. Its development also reflects the concern that researchers may not be able to locate accurately attributions according to their dimensional qualities (Hanrahan et al., 1989). The questionnaire rates causal responses to positive and negative events on five dimension scales: locus of causality, stability, controllability, globality and intentionality. General support for the scale’s, and a subsequent short version’s, factor structure, reliability and construct validity is provided by Hanrahan and colleagues (e.g., Hanrahan & Grove, 1990a; Hanrahan & Grove, 1990b).

However, this inventory, short and long versions alike, suffers from asking for the one main cause for a series of hypothetical scenarios, an approach which has been
challenged in recent attribution psychology literature (e.g., Munton et al., 1999). Can it be inferred with any certainty that an attributional style found using such a measure reflects a similar style for real life events and the potentially complex causal explanation offered to account for them? Some researchers have argued that hypothetical events may be better for identifying attributional style (e.g., Metalsky & Abramson, 1981) and Hanrahan and Grove (1990a) have demonstrated its internal consistency with real sportspeople. However, this researcher concurs with Hanrahan et al. (1989) who suggest that this issue needs further investigation.

Prapavessis and Carron (1988) identify a previous lack of support in the sport domain for the learned-helplessness model of depression proposed by Abramson et al. (1978), despite sport's obvious potential as an achievement setting. Prapavessis and Carron propose that maladaptive achievement patterns associated with learned helplessness would be found amongst sports performers and that, for those displaying this pattern, the characteristic attributional style would be evident. Following the completion of an Attributional Questionnaire (based on an attributional style questionnaire developed by Peterson et al., 1982) and their own Maladaptive Achievement Pattern Questionnaire, nationally or internationally ranked tennis players were classified as demonstrating maladaptive or adaptive achievement patterns. The results revealed that maladaptive achievement patterns associated with learned helplessness were present. When attribution dimension styles in failure situations were analysed, it was found that the helpless group gave ratings that were internal, persistent and recurrent; that is, those displaying the maladaptive achievement pattern also displayed an attributional style associated with learned helplessness. No differences were found based on gender or skill level, suggesting highly competitive male and female players, skilled and lesser skilled players alike do not differ in their attributional tendencies.

One suggested implication for coaches and sports psychologists is the potential value of attribution training in developing a more adaptive achievement pattern (see page 53).
In addition to individual differences, within North American populations boys have been shown to display a tendency to attribute successful outcomes to personal ability and failures to luck or lack of effort more than girls (Dweck & Goetz, 1978). Whilst Nicholls (1980) reports this general trend in New Zealand with few ethnicity effects, primarily for classroom tasks, his studies exploring sex differences in attributions revealed that certain variables may mediate the normally found sex differences in achievement orientation. Nicholls reports that, at certain ages, girls appear less logical in making causal attributions than do boys. However, this was explained by looking at the conceptions of success and achievement used in these studies, which had been primarily masculine. This general sex difference is explained by a number of processes, including teacher feedback patterns, and in particular negative feedback, which Dweck, Davidson, Nelson, and Enna (1978) found differed markedly for males and females. There may be implications here for coach feedback to boys and girls and its impact on performer attribution-making.

**Attributional complexity**

Considered by some (e.g., Hewstone, 1989) an individual difference, the complexity of an attributor's causal ascription may also impact on interpersonal compatibility. A manifestation of this difference is how far back in time attributors look for explanations for events in their lives. In relation to coach-performer compatibility, one dyadic member's relatively simple explanation for a performance may be potentially in conflict with the other's complex explanation. For example, the training implications of these differing explanations may be quite disparate. The issue of attributional complexity is, therefore, considered germane to the current research.

Some theorists suggest that people are lazy thinkers or "cognitive misers" (Fletcher, Danilovics, Fernandez, Peterson, & Reeder, 1986, p.875), whose attributional thinking is governed by simple heuristics and influenced by a variety of biases (Fiske & Taylor, 1984). Alternatively, in real life situations, where outcomes can have significant life consequences, people often produce complex explanations (Fletcher, 1983). Temporal factors may also influence the causal schemata operating (Fletcher, 1983; Kelley, 1983). Furthermore, which factors
determine the depth of attributional search? Some have argued that situational antecedents are the significant influence (e.g., Tetlock, 1983), whilst others claim it to be a personality trait (Fletcher et al., 1986). Early attribution theorists suggest people are most likely to combine internal and external attributions when explaining extreme events (Cunningham & Kelley, 1975), when needing attributional accuracy (Kassin & Hochreich, 1977) or when explaining complex interpersonal events (Bradbury & Fincham, 1990).

Fletcher et al. (1986), in taking the position that attributional complexity is a domain-specific trait, developed the Attributional Complexity Scale (ACS), suggesting attributional complexity to be dependent upon the degree of knowledge of the domain and level of interest in it. If so, one would expect active sports people of some experience to be capable of relatively complex causal explanations, if motivated to do so. Fletcher and colleagues (1986) have suggested that attributionally simple individuals may use the internal-external dimension in a more hydraulic fashion than those who are attributionally complex, who tend to adopt a more interactionist explanation. The latter, it is suggested are, therefore, less prone to the fundamental attributional error.

The notion of attributional complexity has received little attention in the sport attribution literature and indeed no published research findings in sport psychology journals concerning it exist to date. However, the use of the ACS within sport and exercise settings has been called for by Biddle and Hanrahan (1998). The number of causes elicited to explain events and the causal chains they create will be addressed in the current research.

Other antecedent factors
Susskind, Thakkar, Hamilton, Maurer, and Sherman (1999) were interested in whether the processes associated with forming impressions of individuals differed from impression forming for groups, since information processing studies have suggested such a difference (e.g., Hamilton & Sherman, 1996). This is relevant in sporting contexts in relation to coaches’ impressions of teams and the individuals within them and potential differences in information processing between team and individual sport coaches.
The individual may be considered a coherent psychological unit with a stable personality and, thus, stable behaviours over time and situations (Hirt, Erikson, & McDonald, 1993). Susskind et al. (1999) suggest that knowledge of specific events and behaviours are then integrated into the expectancies about the individual’s behaviour and efforts are made to resolve any inconsistencies by searching for causes which least damage the initial impression and expectations. This assumption of unity afforded individuals is believed not to hold for group targets and, furthermore, as such it is believed that the impression formation process is affected (Hamilton & Sherman, 1996).

Susskind et al. (1999) undertook two experiments to test these assumptions, the second of which looked specifically at differences in attributional reasoning. Based on the premise that perceivers expect less consistency in a group target, Susskind et al. propose that they are likely to be less sensitive to group inconsistencies and, therefore, devote less effort to generating causal attributions. Responding to written scenarios for individual or group targets which provided either target-consistent or target-inconsistent information, 133 undergraduates were asked to continue a descriptive sentence with a short phrase which offered a plausible extension to the initial description. These continuations were subsequently coded and analysed.

Despite a general finding that non-causal extensions were more common than attributions when the target was an individual, consistent behaviours yielded more non-causal statements than causal statements, with the opposite pattern when the behaviour was inconsistent. However, this interaction between congruency and continuation type was not apparent for the group target responses. Group participants generally wrote non-causal extensions more often than causal attributions. It was apparent that, for individual targets, incongruency triggered causal explanation, which was not the case for group targets. However, when attributions were generated, no differences between individual and group targets, in terms of locus of causality, were found. Reversals, where the meaning of the stimulus description itself is altered, were rare but more likely when participants had a negative expectancy, rather than a positive one, and more likely when behaviour was inconsistent with expectancy rather than consistent. This
pattern was further exaggerated when under a condition of a negatively valenced expectancy.

Although the emphasis in the current research is on individual sport dyads, these findings may have implications for future studies considering attributions made by coaches working in team or squad situations. It appears coaches' inclination to explain, and the nature of these explanations, may be affected by the constitution of the target (i.e., individual or group).

A variety of cognitive and motivational factors have been shown to affect the selection of outcome attributions. However, most related research has tended to consider the perceived outcome as either success or failure. In experiments by Milech and Nesdale (1984) perceived outcome was assessed on a 5-point percentage gradation (10, 30, 50, 70, 90%). Milech and Nesdale assessed the perceived outcome-affect and outcome-attribution relationships in order to examine the affect-attribution relationship. In the first of two experiments the perceived outcome on a concept identification problem was manipulated so that participants achieved at one of the five success levels. Subjects assessed the degree to which each of a limited number of causal factors (those suggested by Heider, 1958, to be important: luck, ability, effort, task difficulty) had affected the result and whether the outcome was due to personal or situational factors, assessed on a bi-polar, 5-point scale. They also indicated how happy they were with the outcome.

Findings revealed that affect was linearly related to perceived outcome level. However, across the five levels of perceived success, only attributions made for successful outcomes (70 and 90% success) were discriminatory, with the most important discriminator being ability, followed by task difficulty and person-v-situational differences. In the 10-50% range attributions did not discriminate success levels.

A subsequent study examining the 10-50% success range generally supported the findings for the same success range from the previous study, with differences only for the mean ratings for degree of person-v-situation, with attributions in the
second study significantly influenced by outcome. It was suggested by Milech and Nesdale that perhaps answers to more global questions (e.g., person vs situation) are more unstable than those of specific questions.

These two studies, suggest Milech and Nesdale, show that whilst the relationship between outcome and positive and negative affect appears linear, the relationship between performance and attribution is non-linear and that discrimination appears greater between higher levels of relative success than for relative failure. The results also suggest a direct relationship between attribution and affect for positive outcomes but not negative ones. This study did, however, only consider one emotion, happiness.

A further antecedent which may influence the attribution process is the context within which attributions are sought. McGill (1989) suggests that the selection of a causal explanation from a number of potential options may be dependent upon the context, as well as the perspective of the attributor. McGill offers three experiments that look to explain three common features of attribution research by examining the role of the causal background: actor-observer differences, the role of consensus and distinctiveness information in reaching a causal conclusion and the tendency to commit the fundamental attributional error. For McGill, the to-be-examined event is the difference between the target event, i.e., what has happened, and some contrasting background. It is this deviance that triggers the attributional search process (Weiner, 1985), that is, expectation is critical. Therefore, one must identify the key features of the context in which events occur. A significant question is, What governs the selection of causal backgrounds against which the target episode is compared? Of interest in an interpersonal setting such as the coach-performer relationship is the question of whether co-actors with their differing experiences select similar or different causal backgrounds for use in causal analysis.

Such factors as recency, frequency, intensity, area and duration and higher-order attributes such as meaningfulness, familiarity and ego-involvement (McGill, 1989) can be used to account for the divergent perspectives of actor and observer who, as a result of their distinct roles, may select a different set of causal
backgrounds. McGill (1989) suggests that where the causal background is unambiguous, e.g., where a questioner directs the selection of the causal background, the actor-observer difference may not be evidenced. McGill reports support for this notion in the findings of her study (1989, Experiment 1). The preference for person and stimulus attributions varied according to the focus of the causal question; where the causal question was ambiguous the actor-observer effect was evident.

Kelley's (1967) ANOVA model, where attributors use consensus, distinctiveness and consistency information to select attributions from a range of options, is challenged by McGill (1989). Specifically, McGill asks what happens when the attributor selects one type of information to the exclusion of the others. For example, the coach might focus on differences in responses to training between athletes in his group rather than differences across time or situations. McGill argues that lay attributors are unlikely to rely on covariation information when the causal question is not ambiguous. Therefore, where the context suggests the use of a particular type of information, this may be used rather than covariation information. Once again, results of McGill's second study (1989, Experiment 2) support this claim. Consensus and distinctiveness information were used to select the causal background when no other cues were provided, but when such cues were available, subjects did not rely on such information.

Finally, McGill examined the phenomenon of taking credit and laying blame (Weiner, 1971). Previously thought to reflect a self-serving bias, McGill argued that those expecting to succeed might differentially select particular causal backgrounds quite different to those selected by subjects expecting to fail. McGill offered more speculative support for this hypothesis, concluding that

"attributions for success and failure may reflect more about how subjects interpret ambiguous causal questions than about how they view factors responsible for positive and negative performance." (p.197).

Clearly central to the current research is consideration of the methods used to collect attributions. Tenenbaum and Furst (1986) note that attribution research in the sport domain may not equivocally support findings in other settings. Drawing on the work of Roberts and colleagues (e.g., Roberts & Duda, 1984), they stress
that perceived ability, expected success and subjective perception of goal attainment need to be considered in addition, and perhaps in place of, objective win/loss. Tenenbaum and Furst suggest inconsistencies in previous research findings may reflect the nature of attribution collection, e.g., the varied use of forced- and free-response formats, real and hypothetical scenarios and the over-emphasis on analyses of the first attribution offered.

Tenenbaum and Furst, therefore, conducted a study to consider consistency when multiple attributions, up to three in their study, are analysed. Team and individual sport participants were divided by gender, outcome, relative outcome, group and individual setting, perceived ability and outcome expectations. Results from this study showed a clear difference between males and females on the first attribution on locus of causality, stability and controllability dimensions which persisted across all conditions except for the locus of causality dimension for the third cause. With regard to winners and losers, the egocentric bias tended to disappear when more than one attribution was offered, especially for locus of causality and control dimensions. This pattern was repeated for the relative performance analyses. Individual sportspeople tended to give more internal attributions than team sport performers but control and stability across sport type showed some inconsistencies; differences apparent for the first attribution disappeared for the subsequent attributions. High ability performers gave all three attributions as internal, stable and controllable, but each successive cause was more stable. The low and moderate perceived ability performers tended to offer less stable causes. These results indicate the benefits to researchers of considering more than the first attribution.

In addition to the considerations above, one of the most commonly researched and reported phenomena in attribution research is the influence of one's position as actor or observer in the attribution process. Of central importance in this study, it is considered in detail below.

**Actor-observer differences**

The actor-observer (A-O) difference bias is the tendency to explain others' behaviour in terms of dispositional factors and one's own in terms of situational
or unstable factors. The reasons for this consistently found difference may be perceptual: what is perceptually salient for the actor is situational features whereas, for the observer, the fundamental attributional error may operate to extenuate the salient focus on the actor’s dispositions. Ross (1977), in interpreting the divergent perspectives model, suggests that the observer is more likely to observe behaviour in the actor that differs from his or her own, that is uncommon or deviant and, thus, is more prone than is the actor to attribute these behaviours to dispositional factors.

Alternatively, the information available to actors and observers may be different: actors have available information regarding personal feelings and intentions, usually not available to the observer. Additionally, the actor will probably have personal history information not held by the observer. There is empirical support for both of these explanations (see Fiske & Taylor, 1991). Actors also see their behaviour as less stable and predictable.

In considering the actor-observer effect, Monson and Snyder (1977) critique the notion of the dispositional-situational dichotomy. They suggest that this is not truly a dichotomy. Most situational attributions depend in part on certain dispositions complementing the situation and vice-versa. They argue that the apparent distinction may be one of language rather than cognition. An inherent problem with this assumption is that it assumes we believe we take actions in response to our changing environment but that, observing others, they behave due to dispositional constraints. Monson and Snyder report bodies of research findings both in support and refuting the hypothesis.

These authors go on to discuss the potential differences in the attributional processes of involved actors and uninvolved observers. However, utilising such a strict distinction is to ignore the potential for the involved observer, i.e., someone who has worked with and helped shape the behaviour of the performer, and indeed may continue to be a significant influence during the action, e.g., the team-mate, coach, or other support worker. Such a distinction is compounded if one is to assume categorical differences inherent in these two positions, in terms of degree of knowledge of inner states, personal history and the foci of attention.
(Monson & Snyder, 1977). Whilst there is clearly a perceptual difference between the touchline coach and the performer engaged in the activity, many years of active involvement in the sport, as performer and coach, and the use of new technology, e.g., multi-perspective video, may allow diverse attentional and perceptual foci. Additionally, in a long-standing relationship, knowledge of the performer’s personal history may be shared. To what extent the active observer is less able to assess covariation (Kelley, 1972) may, therefore, be called into question. However, it should be noted that other factors, such as emotion during the event and hedonic relevance of the outcome, might need to be considered.

Also in existence are motivational biases that may influence the likelihood of the A-O difference. For example, Monson and Snyder (1977) consider actors as likely to use a variety of situational and dispositional cues in order to maintain their sense of behavioural freedom and self-determination. However, it is suggested that actors may alter their perceptions of causality to enhance self-esteem, attributing desirable outcomes to dispositional factors and less desired outcomes to situational constraints. It follows that the propensity for both these actions is greater for the actor than for the observer. Monson and Snyder report numerous studies to support these propositions, although Kelley and Michella (1980) suggest that support for the influence of these motivational biases is limited to competitive experimental games designs.

In part to address criticisms by Rejeski and Brawley (1983) concerning the narrow focus on athletes’ self-attributions, Luginbuhl and Bell (1989) considered the attributions made by track and field athletes for events occurring to other athletes, either from their own event or another. Of specific interest was the locus of causality dimension. Note was made of studies (e.g., Taylor & Fiske, 1975) showing that altering the focus of attention can change the tendency previously reported in the literature (e.g., Jones & Nisbett, 1972; Watson, 1982) for the actor-observer effect. They also considered the effect of empathy instructions on attribution-making; that is, observers given empathy instructions tend to make attributions similar to actors (Gould & Sigall, 1977). They hypothesised that observers who have previously performed the task that is under observation are more likely to make actor-like attributions than observers who have not.
In order to test these assumptions in a sport setting, male university athletes were offered four vignettes in which an athlete (either from their event or another) performed poorly in three, one of which was his own event, and well in one. Athletes noted in a free-response format up to three factors that influenced the outcome, in order of importance. Locus of causality ascription was made based on the way the attribution was termed by the attributor, as this was seen as the essence of testing the hypothesis under investigation. Where athletes made attributions for outcomes in their own event, the attributor was classified as ego-involved.

Results revealed that there was a tendency for non ego-involved athletes to make more dispositional attributions than ego-involved athletes across all three specialisms and this was significant in two of the three, jumping and throwing. Additionally, athletes in all three specialisms tended to make more dispositional than situational attributions when in the non ego-involved role than in the ego-involved role. This supports the suggestion that prior experience in a role affects attributions for others’ outcomes in the same role, especially unexpected negative ones. There is a tendency for the attributor to make more dispositional attributions when never having been in the actors’ role. When attributing for another’s outcome in their own speciality, they attributed more as though they were actors, argued here as due to ego-involvement and ability to empathise. Differences between events were explained in terms of the peculiar determinants of performance in those events, e.g., environmental factors being influential in the javelin. This may have implications for coach-performer relationships, where coaches’ prior experience may alter the actor-observer attributional pattern found in other settings. Chen, Yates, and McGinnies (1988) also found that personal involvement with the actor’s plight similarly reverses the A-O effect.

Ross and Sicoly (1979) considered of central importance the degree to which “the observer departs from a passive role and interacts with the actor” (p.335). The suggestion is that, whilst passive observers focus on the actions of others, more engaged observers may be cognitively focussed on their own contribution to the interactive processes in the joint activity. This seems particularly pertinent in relation to studying the attributions made by coaches.
Brawley (1984) draws on Ross and Sicoly's (1979) suggestion of four possible mechanisms by which this availability bias may occur. The need for social approval and a focus on personal competency could lead to personal information being preferentially stored. Furthermore, past experiences, values and expectations may result in personal information being retained more effectively than that pertaining to others. This focus on the self may result in personal information about performance being retrieved, even when information about team-mates or opponents has been coded and stored. These three potential biases, in addition to performers having more information about their own role over those of others, and their own team over opponents, and therefore more personal awareness, may result in this egocentric tendency. Ross and Sicoly's (1979) study of members of a basketball team found support for these notions.

Brawley (1984) considered the attributions made by members of 12 men's doubles tennis teams and 32 coach-athlete dyads in order to explore biases in a) the available information used to make attributions and, b) the attributions of responsibility for events. A number of studies have shown support for the operation of the self-serving bias in sport (e.g., basketball: Bird & Brane, 1978; hockey: Brawley, 1980). However, here Brawley suggests the need to consider both functional and cognitive interpretations of this tendency, suggesting that, in addition to the potential need to protect one's own self-esteem, there may be an egocentric bias in the availability of information in memory, resulting in greater responsibility for the outcome being accorded to the attributor. In other words, the egocentric bias may, in part at least, be unintentional.

Brawley (1984) asked whether sport dyads are any different from other types of dyads. Results of the tennis doubles teams study revealed egocentric biases in availability and in the responsibility ascriptions of winning and losing tennis dyads; players recalled their own contributions over those of their partner. Players also offered more own team attributions of responsibility for the team outcome than other team attributions, regardless of the outcome. Brawley suggests that the results of this experiment may best be explained in terms of selectivity and motivation: that is, selective encoding and retrieval of relevant event information and a possible motivation to search for causes of their outcomes in order to
improve personal control over future events. Thus, support for Ross and Sicoly's findings were found.

It should be noted that the experimenter asked for the recall of "one important turning point" and "a single event or play that sticks out in your mind" (p.268). One should not infer that players' recall of the game per se is necessarily similarly biased. Clearly, self and other biases may operate for performance outcomes. However, research concerned with close working relationships may benefit from considering outcomes that may be of an interpersonal, as well as a performance, nature.

Hewstone (1989) identifies a number of methodological and theoretical problems in association with the testing of Jones and Nisbett's (1972) actor-observer hypothesis. Of particular interest here is the distinction made by Watson (1982) between the common-rater procedural paradigm, where the researcher compares the self-attributions of subjects with their perceptions of others, and the common-target paradigm, where self-attributions of subjects are compared to those of outside observers. Watson distinguishes these approaches as self-other and actor-observer and Hewstone supports Watson's view that true actor-observer interaction is not usually present in social interaction settings.

A more fundamental criticism is that if researchers are truly to understand the formation and nature of attributions in interpersonal setting, the motivational forces of social desirability and interpersonal attitude, in addition to cognitive and perceptual factors, must be taken into account. Regan, Strauss, and Fazio (1974) have suggested that attributors tend to arrive at attributions which are relatively consistent with prior knowledge of the target's dispositions: prosocial behaviour tends to be attributed to internal causes where the person is liked by the attributor; where the person is disliked by the attributor, attributions for prosocial behaviour are made to external factors.

In relation to the current thesis, an important question is that of whether one can consider the coach as an observer. Miller and Norman (1975) have considered the attributions of the active observer, that is, someone simultaneously interacting
with the actor. These authors suggest that the active observer is even more likely than the passive observer to attribute an actor’s behaviour to dispositional factors, citing the need to predict and control the situation. However, as Fiske and Taylor (1991) note, this is not likely to occur if the outcome is neutral and is also less likely to occur if the active observer empathises with the actor, quite likely in a close coach-performer relationship in a sport such as track and field athletics.

The majority of research conducted to explore the A-O phenomenon has been conducted in laboratory setting. Blass and Kaplowitz (1990) question the ecological validity of such an approach, both on the grounds of the short timescale of these studies and the artificial setting in which they are conducted. These authors conducted a longitudinal study covering 3.5 weeks and 4 assessment times per week. They offered 200 descriptive adjectives from which the respondents used 5 each to describe the self and another across the four days. It was contended that homogeneity of descriptors would suggest a trait-like disposition and heterogeneity reflect the diversity of situations. It was expected that A-O differences would be reflected in greater trait variability in descriptions of the self than for the other.

Results revealed individual differences in the propensity for the A-O difference. Further examination suggested that self-esteem was a mediating variable, with those low in self-esteem conforming more to the effect. These authors suggest that the occurrence of the A-O difference may be an artefact of the methods used to measure it. They conclude that the A-O difference appears not to be present in on-going relationships studied longitudinally in natural settings and that the term “pervasive tendency” (Blass & Kaplowitz 1990, p.263) in relation to the A-O effect, may be too strong.

Osberg and Shrauger (1986) note that research has tended to explore the A-O effect by studying retrospective attributional analyses and question whether this tendency can be extended to people’s predictive judgements about factors that will influence future behaviour. These authors report conflicting results of two previous studies that had considered temporal distance from the event. Moore, Sherrod, Liu, and Underwood (1979) found that attributions became more
dispositional over time, namely a three-week delay period; and, Miller and Porter (1980), who considered observer subjects, and who found that attributions to situational factors increased over time in one study and showed no-effect in another. Whilst the former focussed on memorial factors, the latter concentrated on potential motivational processes.

Osberg and Shrauger's (1986) study explored the spontaneous judgements about the factors affecting future behaviour and examined whether actor-observer and self-serving biases extend to explanations for future events. It was suggested that the motivation to perceive control will be greater for future events than for those already passed, hence, greater dispositional attributions should be made for future events.

Subjects were assigned to one of four groups: actor-past, actor-future, observer-past or observer-future. Subjects imagined their own or another's behaviour in three situations: a social setting, an academic situation and a job situation. They employed three 10-point scales to assess degree of performance in each setting and two scales to assess the degree to which subjects ascribed behaviour to situational (qualities of the situation) and dispositional (personal qualities) factors. The results showed future judgements to be more dispositional than past performances. However, the authors note that this main effect was qualified by a significant Role x Type of situation x Time perspective interaction, such that future events were more dispositional except for the actor-social and observer-academic data. Osberg and Shrauger conclude that one must take account of the nature of the behaviour and the time perspective in order to evaluate the actor-observer difference.

The authors also found correlational support for the self-serving bias in actors, although a non-significant finding for observers. This bias was present for future, as well as past, events. In line with previous findings, Osberg and Shrauger conclude that uncertainty about future events can lead to dispositional attributing in order to maintain some level of perceived control.
Despite the tendency for research to find little support for subject sex differences, there is support (e.g., Unger, 1979) for stimulus sex differences. Jones and McGillis (1976) make the point that behavioural expectancies will have a significant effect on attributions, in that perceivers develop a modal behavioral expectancy (Jones & McGillis, 1976) based on category membership, such as sex grouping, and assess behaviour against this blueprint.

As a result of a series of experiments looking at the role played by subject sex, actor sex and sex-linked behaviour in attribution making, Hansen and O'Leary (1983) demonstrate that attributors of both sexes rely more heavily on personal factors when explaining women's behaviour and more heavily on situational factors when explaining the same behaviour of men across a range of behavioural action. Behavioural expectancies based on sexual grouping were also shown to be operating, such that actors behaving in an act of low prior probability based on sex-related behavioural expectancy were associated with an attributional shift from environmental to personal causes.

An issue, therefore, for coach-performer research is the extent to which the sex of the target is a mediating factor in the attribution-making process. Furthermore, is there a coach-performer sex interaction (same/other sex)?

Burger and Rodman (1983) considered the effect of time-lag between outcomes, in this case a cross-word puzzle, and elicited explanations for them. Using an immediate attribution and three-day delay attribution repeated measures design, the results revealed that more credit was given to the dyadic partner than was taken themselves immediately after the outcome. However, when subjects gave their attributions three days later, the egocentric bias was evident: dyad members collectively gave more credit to themselves than to their partner more often than they gave more credit to their partners than to themselves. The argument is made by Burger and Rodman (1983) that the salience of the partner's contribution dissipates more rapidly than does the salience of one's own actions.
Summary of antecedent influences
The present study aims to consider the extent to which coaches and performers offer explanations for mutually-relevant outcomes which are compatible or potentially in conflict. A number of biases have been shown to operate which may contribute to this potential. However, it also appears likely that the context in which attributions are made and the methods used to elicit these attributions may influence the propensity for these bias effects. Furthermore, it seems likely that these biases may interact or even reverse previously found attribution patterns.

Consequences
The implications of attribution theory have led to a range of applications in various domains, e.g., education, clinical and counselling therapy, interpersonal relations counselling and environmental psychology (Kelley & Michela, 1980). Within sport psychology, early interest in attributions made for winning and losing and the effects on performers’ emotions and cognitions were initially concerned with self-attributions. Researchers subsequently considered attributions made for others, e.g., team-mates, opposition. The following sections will consider the cognitive, emotional and behavioural consequences for the attributor of making attributions and the potential benefits that can be gained from making certain attributions. Such a consideration may be particularly significant when considering close interpersonal settings where the cognitions, emotions and behaviours of one individual may act as antecedents for others’ attribution-making.

Affect
Research by Weiner and colleagues (e.g., Weiner, Russell, & Lerman, 1978) in success/failure situations has shown that two types of affective reactions exist: outcome dependent reactions, where the emotional response is determined by the outcome, and attribution dependent affect, where it is not the outcome per se that causes the affective response but the attribution made for it. Weiner et al. (1978) considered the emotional consequences of attributions to luck (e.g., surprise), ability (e.g., changes in confidence), effort (e.g., guilt) and actions of others (e.g., thankfulness). Weiner (1979) also showed that not only do attributions affect emotional responses, but so, too, do the attributional dimensions they
(characterise, naming locus of causality, stability and controllability as particularly important.

Extending the significance of attribution dimensions, Weiner (1985, 1986) developed a specific model of the attribution-emotion relationship that is shown in Figure 1.

**Figure 1:** Weiner's (1986) model of attributions and emotions (adapted from Fiske & Taylor, 1991, p.50).

![Diagram showing Weiner's model of attributions and emotions](image-url)
From this model it can be seen that an outcome, such as a perceived sporting success or failure, produces an initial attribution-independent emotion and, that under certain conditions, such as unexpectedness, failure, or where the event is particularly important, this is followed by a cognitive search for causation. The causes identified can be classified according to their dimensional qualities which influence psychological and affective responses, such as expectancy for future outcomes and attribution-dependant emotions. These resultant effects may then influence subsequent behaviours in the domain, such as continuing to participate or not.

There have been criticisms of Weiner's model. For example, there has been only limited support for the contribution made by the controllability dimension (de Jong et al., 1988). Furthermore, the contribution made by causal attributions to expectation change and performance may be less influential than in Weiner's model (Covington & Omelich, 1979). Finally, initial emotional responses to a perceived outcome may be more influenced by attributions than originally thought (McFarland & Ross, 1982). Although alternative models have been presented in the literature (e.g., Vallerand, 1987), Weiner's attribution-emotion model remains a useful framework within which to predict affective responses to specific events, stipulating, as it does, associations between particular causal dimensions and emotions.

Following subsequent support for these propositions (e.g., McMillan & Spratt, 1983; Forsyth & McMillan, 1981), Russell and McAuley (1986) hypothesise a number of models to explain the attribution-emotion relationship; these are shown in Figure 2.
Figure 2: Alternative models of the relation between attribution processes and affective reactions (Russell & McAuley, 1986).

a) Attribution-affect script model

![Attribution-affect script model diagram]

b) Causal dimension mediation model

![Causal dimension mediation model diagram]

c) Causal-dimension additive model

![Causal-dimension additive model diagram]

In an attempt to test which of the above models best explains the attribution-emotion relationship following success and failure, Russell and McAuley (1986) conducted two studies, the first experimental, the second involving a naturally occurring achievement outcome.

In Russell and McAuley's first study, using situation descriptors and affect rating scales, factor analyses revealed three affect factors for successes (competence, gratitude and positive affect) and four for failures (anger, guilt, surprise, negative affect). For successes, ability and effort attributions were found to elicit feelings of competence, whereas luck elicited lower feelings of competence. Gratitude
was maximised by attributions to actions of others or luck and minimised by attributions to ability or stable effort. Greater positive affect was produced by ability and effort attributions, with positive affect reduced by luck attributions.

For failures, attributions to the actions of others led to feelings of anger which were reduced by attributions to ability or stable effort. Guilt was increased by a lack of effort attribution and minimised by attributions to others. Failure due to luck or task difficulty resulted in surprise which was minimised by attributions to lack of effort. Only stable effort was associated with negative affect. From these results it can be seen that some specific attributions increase certain affective reactions, whereas the presence of others suppresses the likelihood of certain emotions.

In relation to causal dimensions, the greatest predictor of affect, here competency feelings, following success was found to be a combination of the three dimensions; internal, stable and controllable causes maximised feelings of competency. This combination accounted for 52.9% of the affect variance. Positive affect was predicted (28.5% variance) by internal and controllable causes. Weaker predictions were found for other affective reactions and for those following failures. The locus of causality dimension was consistently found to be the strongest predictor of affect.

Examining the joint and independent effects of causal attributions and causal dimensions on affect, it was found that the largest effects involve variance jointly accounted for by individual attributions and causal dimensions. However, it appears that attributions exert an independent influence on success and failure affect (up to an additional 12.9% of the variance above that of causal dimensions) and causal dimensions exert an independent influence on some, but not all, of the success and failure affects. These findings appear to discount the attribution-affect script and causal dimension mediation models.

Attempting to replicate these findings using the outcome of a midterm examination, it was suggested by Russell and McAuley (1986) that, in real life settings, attribution processes may play a less influential role in determining
emotional reactions. Following similar data collection and analysis procedures to those in Study 1, only task difficulty attributions were found to predict affective reactions following failure, such that anger was maximised and guilt minimised by attributions to task difficulty. No other attributions predicted affects and, thus, findings from Study 1 were not supported.

The causal dimension-affective reactions relationships were found to be weaker in the real-life setting than in the first study. Although the analysis of the data for testing the three models did not produce consistent findings to Study 1, causal attributions and causal dimensions were found to make independent contributions to affect. However, it should be noted that, in this second study, attributions were gathered a week after the examination and only the first attribution given for the examination performance was entered into the analyses. Furthermore, in the second study very few of the students used the attributions provided by the researchers. This highlights the problem of offering prescribed attributions from which participants must select.

In summarising these findings the authors note that it is still unclear by what processes and in what sequence attributions, attributional dimensions and affective reactions are related.

In an attempt to explore the consequences of attributions in sport, Biddle and Hill (1992a) draw on the attribution models of Weiner (1986) and Vallerand (1987). Their study examines the predictors of emotions from objective outcome and subjective performance appraisal, the importance of winning and playing well, and the subjective appraisal of performance (performance satisfaction) in regional squash league players.

Subjective appraisal of performance clearly predicted positive self-esteem and relaxation emotion for winners. For losers, relaxation was best predicted from unstable attributions and ratings of importance. For winners, variance in positive self-esteem was primarily accounted for by performance satisfaction which also accounted for variance in feelings of relaxation, such that high satisfaction resulted in lower feelings of relaxation. No gender differences were found.
However, in line with Kerr’s (1997) comments in relation to reversal theory, it is important to appreciate the subjective experience associated with affect labels. For example, low relaxation could be experienced as a positive or negative factor.

Thus, for winners, subjective performance appraisal, and not attributions, was the only predictor of emotion. Unstable attributions made for losing may help the player relax because such attributions offer no expectation for future failure. Additionally, the importance of the outcome and performance added significantly to the prediction of relaxation, such that low ratings of importance of winning and high ratings of importance of playing well aided feelings of relaxation. With regard to performance satisfaction, only positive self-esteem was predicted by the unstable attribution factor (mood) for satisfied players, suggesting that players relied upon on-the-day factors for feelings of self-esteem (Biddle & Hill, 1992a). For dissatisfied players, positive self-esteem could be maintained by attributing performance to features of the opponent. Opponent attributions also predicted feelings of surprised incompetence. These findings are consistent with Weiner’s (1985, 1986) contention that unexpected or negative outcomes trigger greater attributional search and Vallerand’s (1987) intuitive-reflective model of affect formation.

Other studies have found some support for relationships between certain causal dimensions, such as those in the CDS (Russell, 1982), and emotions. For example, McAuley, Russell, & Gross (1983) found that, while success emotions were related to controllable attributions, failure emotions were not significantly related to any attribution dimensions. The association between attribution dimensions and emotions has been found to be strongest when the outcome does not conform to expectation (McAuley & Duncan, 1989).

Biddle and Hill (1992b) employed a laboratory-based one-vs-one simulated fencing contest to test the influence of outcome importance on attribution-emotion associations. Results revealed that, whilst winners’ positive self-esteem was best predicted by performance satisfaction, also positively related to positive self-esteem were mood, ability, motivation and form attributions and inversely related to luck. The importance of winning also added to predictability.
Attributions to bad luck best predicted feelings of depression-frustration, although personality and opponent's personality were also related to this affect. Drawing on Weiner's (1986) and Vallerand's (1987) models of the relationship between attributions in emotion, Biddle and Hill suggest that, when winning, there is a greater intuitive appraisal and less reliance on attributional search. For losers, only positive self-esteem was predicted from attributions (to being in the wrong mood).

A number of methodological weaknesses are identified by the authors, such as lack of task realism and the novice status of participants. Although outcome importance was assessed, the emotional and psychological investment in the task is questionable. Furthermore, the 12 attributions and 28 adjectives (to reflect mood) were provided by the experimenters, a practice that has been criticised elsewhere (Munton et al., 1999).

Where sport psychology has examined attribution-affect relationships, the emphasis has been on sports performers. It would be valuable to explore also this association for others involved in sport, such as officials, spectators and, as in the present research, coaches.

**Predicting future behaviours**

When people engage in causal analysis, it is argued that they utilise implicit causal theories to help interpret the behaviours of others. Ybarra and Stephan (1999) further suggest that a sense of control over the social environment can be enhanced by the use of attributions employed in the past as the basis for predicting future behaviours. The effect of making attributions about the behaviours of others on one's expectations of them in the future has received little attention. Of particular significance here is the role of locus of causality. Attributing behaviour to personal dispositions will result in different expectations for the future than following situational attributions. Furthermore, negative behaviour, or behaviour contrary to social norms and conventions, is more likely to lead to dispositional attributions (Rothbart & Park, 1986). It has been shown that, when learning of someone's positive behaviours, people are more sensitive to situational determinants and are, hence, more likely to infer situational causes
(Vonk & Van Knippenberg, 1994, Study 1). Evidence exists that once trait impressions are formed, they are resistant to change, even in the face of contradictory evidence that is often marginalised as situation-dependant (Hewstone, 1989).

The proposal that people primed to think of dispositional causes should be more likely to expect the target person to behave negatively than those primed to think of situational causes was supported in studies by Ybarra and Stephan (1999). These authors suggest that this attribution-prediction bias illustrates that people possess implicit causal theories about the causes of negative and positive behaviour (i.e., that the former is more likely to be due to dispositional factors and the latter to situational causes).

The mechanisms by which such a bias may operate clearly need further research. However, Ybarra and Stephan's (1999, Study 4) study showed that negative behaviours were remembered to a greater degree when cued by dispositional trait cues and that positive behaviours were better remembered when cued by situational cues. That is, the context affects recall. The authors conclude that behaviours with causes fitting perceivers' implicit causal theories tend to be better remembered than those that do not.

What effect might prior expectations have on attributions? For example, if an outcome is considered to be fair, in the sense of being deserved, will causal attributions differ from similar outcomes felt unfair? It has been proposed elsewhere (e.g., Walster, Walster, & Berscheid, 1978) that witnessing unfairness causes distress and efforts to restore equity, e.g., helping action. Witnessing injustice may trigger intense efforts to understand the causes of the unfairness in the hope of reducing this distress. Bies (1987) refers to the quest for understanding why an injustice occurred as that of the intuitive juror. It is suggested that causal ascription is a central part of this process.

Lerner (1980) suggests that there are individual differences in the strategy that people employ when responding to injustice and that one significant psychological characteristic which may affect this response is the belief in a just
world (Lupfer, Doan, & Houston, 1998). People having such a belief (that people get what they deserve) experience most distress in cases of perceived injustice and, hence, are most likely to search for causes.

Lupfer and colleagues examined whether all attributions are equally therapeutic. These authors found that attributional analysis reduced the distress experienced by strong believers in a just world for both fair and unfair outcomes. This suggests that those with a strong belief in a just world might have less tolerance to unexplained events and/or a greater motivation to explain them. Potentially reflecting an attributional style, these results suggest those with a strong belief in a just world suffer more distress than weak believers when not able to analyse outcomes (fair or unfair), but receive greater relief from their distress when clearly fair or unfair outcomes can be causally analysed (Lupfer et al., 1998). Furthermore, they found little evidence of any specific attribution dimension or individual attribution having a greater therapeutic benefit than others, suggesting attribution research should focus on the functions of causal analysis rather than the attributions derived from it (Lupfer et al., 1998).

Attribution training
Psychologists have attempted to harness the psychological and affective benefits of making certain attributions. This has lead to research into the use of attribution therapy and the potential of attribution training. The present studies are an attempt to identify the underlying causal beliefs of coaches and performers working in dyads. Where attributional divergence is apparent, attribution training may prove a valuable means of enhancing or protecting the functionality of these relationships, especially where such divergence is perceived as dysfunctional (Försterling, 1985).

For example, in one of only a few studies that have considered attribution interventions in sport, Orbach, Singer, and Murphey (1997) found that recreational basketball players previously attributing failure on a basketball dribbling task to uncontrollable and stable causes (considered in Weiner’s 1986, 1992 model to be dysfunctional) could, as a result of attribution training, alter their attributions to be more controllable and unstable. The participants receiving
training that focussed on making controllable and unstable attributions made more functional attributions, e.g., effort, than the other two intervention groups. Furthermore, this group was the only group to improve performance times significantly on the dribbling task over the four trials and perform significantly better in the fourth trail than the group trained to focus on uncontrollable and stable factors, e.g., innate ability.

Sinnott and Biddle (1998) also found a variety of benefits to attribution training: the 11-12 year old children who underwent attribution training not only altered their attributions but also showed improvement in perceived task success and enhanced levels of intrinsic motivation.

However, as Orbach, Singer and Price (1999) note, the Orbach et al. (1997) study (and also the Sinnott & Biddle study) used only a short-term intervention consisting of one attribution training session and changes in attributions and performance were measured only once, shortly after the intervention. Therefore, the durability of these positive changes cannot be inferred.

As a result of this shortfall, Orbach et al. (1999) conducted an attribution training study exploring the durability of this effect and testing how a number of dependent variables (i.e., attributions, performance expectation, affect) were influenced by attribution training. They also considered the extent to which any effect might transfer to other tennis tasks. Results suggest not only that attributions can be changed, but that these and the accompanying changes in affect and expectation last after the intervention period has ended (in this study the test-retest time lapse was three weeks). Furthermore, the effects transferred to a secondary tennis task. The authors suggest that knowledge of these results may be important for coaches who may be able to alter dysfunctional attributions across time and tasks and, hence, influence accompanying affect and behaviour.

The design of these two studies allowed the primary cause only to be considered; more complex, multi-cause explanations were not assessed. Whilst this may be appropriate in a laboratory-controlled study where task importance is likely to be
relatively low, in real-life settings opportunities to offer multiple causes may be required to assess natural attributional processes more accurately.

**Interpersonal attributions and attributional divergence**

The focus in early attribution research was primarily at the intra-personal level (Hewstone, 1989). More recent work in clinical and therapeutic settings has considered the role of attributions in interpersonal and group situations. In particular, the call for conversational approaches to attribution research has been heeded (e.g., Antaki & Naji, 1987; Hammer & Ruscher, 1997). As will be demonstrated below, attribution-making and communication are inextricably linked and, therefore, the study of conversation is an important source of attribution information (Burleson, 1986).

The following sections will consider a framework and a potential method for examining on-going, close interpersonal relationships.

*Rejeski's model of attributional divergence*

In order to examine the relationship between coach and performer, Rejeski suggests using a model of attributional compatibility developed from models of attribution divergence in dyadic situations. Rejeski’s (1979) so-called model of attributional conflict in sport is, therefore, considered here. This model provides a framework within which potential interpersonal conflict can be explored. A brief review of this model is therefore provided (see also Figure 3). Implicit in Rejeski’s model is the view that the coach-performer relationship is complex and offers the potential for conflict. Competitive sport is built upon the occurrence of frequent achievement outcomes and often, especially in the case of elite sport, very public causal ascriptions.

As previously stated, differences in attributions made by actors and observers have been studied in a variety of settings, mostly based on the initial studies of Jones and Nesbitt (1972). The major theoretical premise for supporting a model for attributional conflict is that actors tend to attribute externally, i.e., outcomes as a result of situational influences, whereas observers tend to attribute to factors
associated with the actor, i.e., behaviour. A consideration not made clear within the literature is the possible gradation of the potentially multi-faceted role of observer. For example, the coach in some sports, in addition to passive observation, may play an active part in team performance through such actions as team substitutions, changes to tactics and the giving of technical instructions during performance. It may be, therefore, appropriate to consider the extent to which the coach is passive or active in the performance.

Progressing from Monson and Snyder’s (1977) informational interpretation of this phenomenon and drawing on the earlier work of Bem (1972), Rejeski considered the potential for attributional conflict the result of three potentially coexisting processes. The first is that of the insider-outsider difference: the notion here being that self-perceivers have access to perceptual information not available to observers, e.g., perceived exertion which, for the coach, can only be inferred from observable cues. The second is the notion that actors have access to personal history, e.g., regarding previous performances, not available to the observer. This intimate-stranger difference may not be as exaggerated for the established coach-performer relationship where the coach may have a high level of information relating to the performer’s previous performances. Thirdly, the self-other difference relates to the attributor’s need to maintain self-esteem, i.e., a motivational bias. The suggestion here is that a self-attributor may attribute a negative outcome to factors outside his/her control in order to protect self-esteem and deflect potential blame. It is noted from the preceding sections, however, that more recent research has considered group-serving biases that may operate in the reverse direction to self-serving biases.

Collectively, these processes can be seen to have a potential impact on the distinctiveness, consensus and consistency information considered by Kelley (1967) to be central to the process of attributing and may, therefore, lead to

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1 It is noted here that Watson (1982) preferred the terms self and other, which may be more appropriate in the coach-performer situation.

2 According to Monson and Snyder's interpretation, based on perceptual differences, the athlete's attributions are more veridical, whilst Rejeski introduced the potentially confounding additional motivational biases highlighted by Bem.

3 The basis for this hedonic bias has been the subject of much research in psychology (e.g., Brawley, 1984, suggests it may be a function of memory).
potential attributional conflict. Where cognitive and/or motivational differences exist between coach and performer, these are likely to be brought into greater focus, and therefore be more influential, when the outcome is negative, surprising or especially relevant to the perceiver. The argument is deductive rather than explicit, in that attributional activity is believed to be increased by negative/important/surprising outcomes, and therefore where the above processes are evident (as they may be in the actor-observer, coach-performer situation), the effects of these will be exaggerated by such attribution-generating outcomes. For example, a coach and performer each motivated to protect their own self-esteem following a surprisingly poor performance by the athlete in an important competition may engage in greater attributional activity (than previously) and subsequently attribute to more polarised causes (for example, the athlete to poor planning by the coach and the coach to an inappropriate training attitude by the athlete). In contrast, a moderate performance in a less significant event may result in less attributional activity by both dyad members and hence any attributions made are likely to be less strongly felt and less polarised (as the motivation to protect their respective self-esteem is less).
Figure 3: Rejeski's (1979) model for attributional conflict.
Examining the key features of this model, Rejeski highlights consensus and distinctiveness information as the two aspects most likely to contribute to attributional conflict. As Rejeski notes, consensus information is widely available to coaches and performers. However, Rejeski’s view that performers are necessarily in a superior position to utilise distinctiveness information is, perhaps, dependent on the sport being studied and the closeness of the coach-performer relationship in question.

Rejeski notes that conflict will not occur in every situation. Of interest, then, is under what circumstances does attributional conflict occur and in what form is conflict apparent? Previous research suggests that greater attributional processing occurs following a negative outcome or non-achievement of a goal, when the outcome is important to the attributor, when the outcome is unexpected (Weiner, 1985) or when the attributor is affected by the consequences of the actor’s behaviour. Conflict in the coach-performer dyad is more likely to occur, according to Rejeski, when important events have negative outcomes and where the coach feels personally affected by the consequences.

Considering the antecedent variables, the following questions can be considered: to what degree do coach and athlete agree on non-achievement in a given situation? With the potential range of individual and, in the case of team sports, team goals, it may not be obvious to the researcher the degree to which an outcome is important to the attributor. Furthermore, one needs to consider the significance of the outcome both in a short-term sense and within, for example, a long-term training and competition strategy: the relevant weighting given by coach and performer may differ. Rejeski discusses hedonic relevance in relation to team situations, suggesting that negative behaviours on the part of the performer are likely to be harshly judged because of the potential damage to the team; but what of the coach-performer relationship in individual sports?

Rejeski notes that in addition to these attribution-making trends, individual differences are also significant. For example, achievement orientation may influence the tendency to make certain patterns of self-attributions. Rejeski notes
the earlier work of Weiner et al. (1971), who suggest that low-achievers assume personal responsibility for failures, whereas high-achievers tend to take personal credit for success. Furthermore, differences in achievement motivation may result in differing behavioural styles (Rejeski, 1979). Rejeski also refers to Snyder’s (1974) work which suggests that some individuals are more likely to be situationally-guided, with others prone to being inward-looking. Rejeski suggests that high self-monitors, i.e., those who tend to look at environmental cues, including interpersonal behaviour, are likely to be more coachable.

Rejeski discusses a range of potential effects of attributional conflict, from evaluative effects, where conflict leads to the formation of negative impressions which in turn bias future attributions, and motivational effects, such as denial of responsibility, to behavioural reaction, where athletes may wish to contribute to decision-making in order to help control a situation and be denied by the coach.

Rejeski also discusses what he calls aftereffects. As an example, he considers the potential to develop self-fulfilling prophecies; that is, negative evaluations of performers by coaches leading to the development of the very behaviours in performers which are unwanted.

Rejeski stresses the importance of the feedback system, from consequences to antecedents, and which makes the potential for attributional conflict a dynamic process.4

A natural discourse approach to studying spontaneous attributions

From the preceding review, it can be seen that the original theories of Heider, Jones and Davis, and Kelley suggest that people are naive scientists, processing information in a systematic way in an attempt to achieve some degree of understanding, prediction and control. Subsequently, various theorists have contended that these attributional processes are either more simple or more complex than originally proposed (Ross & Fletcher, 1985). It appears that the

4 Rejeski notes that from an empirical perspective consideration of this model as a dynamic process is problematic. It is clear that researchers must consider any cause-outcome unit within its wider causal context.
context in which attributions are sought, the types of events which are explained and the spatial and temporal position from which one attributes all potentially affect the process of causal ascription. However, also important is the process of communicating attributions, especially in interpersonal settings, where one person's attributions may impact on the causal beliefs of others.

The question of whether people make spontaneous attributions, i.e., causal thought that is unprompted (Biddle & Hanrahan, 1998) in their everyday lives underpins many of the criticisms of attribution research methods. Most research designs require participants to respond to real or hypothetical situations either with their own attributional ascriptions or by selecting from those provided. In an attempt to determine whether people do make spontaneous attributions, Weiner (1986) examined 20 published attribution studies. He found clear evidence of spontaneous attributions being made in three categories of material: archival, verbalisations and indirect indexes, e.g., helping behaviour (Biddle & Hanrahan, 1998).

The power and significance of conversation is also clearly stated by Hilton (in press, MS p.1, cited in Hewstone, 1989, p.117).

"Causal explanation is first and foremost a form of social interaction.... The verb 'to explain' is a three-part predicate: Someone explains something to someone. Causal explanation takes the form of a conversation, and is thus subject to the rules of conversation."

Indeed, within the sport domain there are numerous specific situations which could benefit from qualitative analyses: for example, Biddle et al. (2001) suggest content analysing raw attributions given by officials in specific situations to help coaches better understand decisions.

Hewstone (1989) highlights the significance of a conversational approach to interpersonal attribution research whilst, at the same time, recognising the limited quantity in social psychology. Laljee (1981), drawing on concepts from discourse analysis, ethnomethodology and speech act theory, suggests four general principles that might influence the giving of a particular explanation in an
interpersonal setting. Firstly, assumptions concerning the knowledge of the other; secondly, the relationship between the interactors; thirdly, topic and activity implications; and fourthly, interpersonal consequences. In relation to an interview situation, i.e., between coach or performer and interviewer, such considerations seem pertinent. When considering naturally occurring dialogue in sport, e.g., between coach and performer, the antecedent conditions suggested by Lalljee can, perhaps, be more easily assessed. For example, you would expect those in a well-established coach-performer dyad to appreciate each other's knowledge of the sport and to have a clearly defined working relationship. The consequences of the conversation, and the attributions made within it, can be far reaching, in terms of future training and competition plans, motivation and their interpersonal relationship.

Johnson and Biddle (1988) used a method previously adopted by Diener and Dweck (1978) in asking participants in a balancing act to think aloud. During these trials, in which feedback of success was manipulated, verbalisations were recorded and analysed. Participants who persisted at the task despite negative feedback were found to make more strategy-related comments, whereas those classified as low persisters were more likely to make free-response attributions and negative self-statements. Of the attributions made, task-difficulty and lack of ability were cited significantly more by low persisters than high persisters. However, as Biddle and Hanrahan (1998) rightly note, this approach cannot claim to elicit truly spontaneous attributions; sport psychology research has yet to assess truly spontaneous attributions.

Another approach to measuring spontaneous attributions used by Harvey, Yarkin, Lightner, and Town (1980) involved showing subjects videotaped episodes of activities likely to elicit attributional search (unexpected, negatively valenced behaviours) and asking them to write down any thoughts or feelings experienced during the footage. Although it could be argued that there is still a degree of coercion here, causal attributions were not asked for explicitly. Harvey et al. reported unsolicited attributional activity especially where there was a degree of empathy for the behaviour, where outcomes were perceived as serious and where future interaction was anticipated.
Interest in the attributional statements made in natural conversation was the focus of a study by Antaki and Naji (1987). Antaki and Naji report the dearth of studies considering this topic. In the one relevant study found, of lower socioeconomic senior citizens at a picnic, causal statements made up 15% of all utterances (Nisbett, Harvey, & Wilson, 1979, in Nisbett & Ross, 1980). In this study the authors focus on those statements containing the causal connective ‘because’. This is rather limited and may have missed attributions where the cause and outcome are spatially distanced within the sentence construction. However, they offer a system for categorising those topics which people choose to explain in ordinary conversation, making the distinction between actions and other related outcomes which might prompt explanation: emotions (Lalljee, Watson, & White, 1983), occurrences (Zuckerman & Evans, 1984), unexpected failure or success (Wong & Weiner, 1981) and untoward events in general (Lalljee, Watson, & White, 1982).

Using the categories derived from their pilot study for the main analysis and making the distinction between those statements in which the speaker or speaker’s group is the protagonist and those where the protagonist is someone other than the speaker, Antaki and Naji (1987) found the following: The most common category was general states of affair (33.8%), followed by the set of events involving the speaker, i.e., speaker’s actions, policy, state of affairs, beliefs or state of mind (28.8%), and the set of events involving other people (17.9%). This is contrary to expectation of what triggers attributional processing (single person actions, the actions of others). It is suggested that this may be because states of affairs serve a number of heuristic purposes, such as summarising previous discussions. However, it should be noted that these findings are for British-speaking, professional middle-class people and may differ from findings for other cultural or socio-economic groups.

Summary
It can be seen from the preceding sections that after the initial use of a narrow range of methods to assess attributions in sport, a number of approaches, both from within sport psychology but more notably from other areas of psychology, have been explored. After an initial examination of the ‘classic’ attribution
Review of Literature

Many of the approaches reviewed here hold some potential for future sport attribution research. Many questions pertinent to attribution research in sport remain unanswered. The present research aims to begin addressing some of these.

**Specific proposal and research questions**

Rejeski draws on the actor-observer literature to provide a model for examining potential attributional conflict between coach and performer in sport. In order to explore the attributions made by coaches and performers for real life outcomes to shared events, there is a clear need to assess causal ascriptions in their natural context and through the medium of verbal speech. However, as suggested by Biddle and Hanrahan (1998), there is a clear gap in the research literature; few studies in sport psychology have used interview approaches to explore attributions, this despite their use in many other sub-disciplines in psychology.

The purpose of this research, therefore, is to explore the attributions made by coaches and performers for significant shared events. In discussing these findings, reference will be made to both antecedent determinants and the affective, cognitive and behavioural consequences of causal ascription. Both questionnaire and interview methods will be used to determine whether the attributions made by coaches and performers immediately and some time after events do indeed offer the potential for conflict, as suggested by Rejeski's model. Specific hypotheses will be included in each study chapter.
Chapter 3.
Study I: The Attribution-emotion Relationship in Coaches

Introduction
Attributions are believed to influence a number of cognitive, behavioural and affective processes (Weiner, 1992). Performance-level sport often produces high emotions, especially in its immediate aftermath. This is the level at which the coach-performer relationship is likely to be relatively intense and of greater significance than at recreational (participation) level. Various models from a variety of theoretical perspectives have been developed to explain emotions in sport (Kerr, 1997). Within sport attribution research, investigators considering the attribution-emotion relationship have produced a number of models, e.g., that of Weiner (1985, 1986, 1992) and Vallerand (1987). The similarities and differences in these models are worth some reiteration here. For Weiner (1986), outcomes may generate a range of emotions independent of the attributions that may follow. The search for explanation is strongest following negative, unexpected and/or important outcomes and, depending on the causal dimension qualities of the attributions made, attribution-dependent emotions may also follow. In this model, Weiner considered three dimensions: locus of causality, stability, controllability and their relationships with various cognitive and affective consequences are shown in Figure 1. A number of researchers in sport have considered the emotional consequences of attributions (e.g., McAuley & Duncan, 1989), although usually in laboratory settings.

An alternative, although similar, framework, the intuitive-reflective appraisal model has been proposed by Vallerand (1987; Vallerand & Blanchard, 2000). For Vallerand, an initial and relatively immediate intuitive appraisal of the outcome takes place, producing affect similar to Weiner's attribution-independent emotions. A reflective appraisal may then follow, generating attributions for the outcome.

Given the potential identified by Rejeski (1979) for coaches and performers to make different attributions for the same outcome, based on differences in a number of antecedent conditions and the potential biases which may operate, it
could be expected that differences in emotions may well follow these shared outcomes. Yet, as Biddle et al. (2001) have noted, most attribution research, including those studies considering post-event affect, have focussed almost exclusively on the performer. The current study considers the attributions and emotions of sports coaches for outcomes achieved by their performers.

As a field study building on previously published investigations of athletes\(^\text{1}\) by Biddle and Hill (1988, 1992a), the design of the current study is unable to exert the same level of control as laboratory-based designs (Cates-Zientek & Breakwell, 1991). However, the outcomes focussed upon are naturally occurring and hence meaningful to the coach and, as such, this approach incorporates some advantages over more controlled studies, especially in relation to emotions.

It was hypothesised that the attributions made by coaches would be related to a number of emotions and that these relationships would be stronger following less satisfying, unexpected and/or important outcomes (Weiner, 1985).

**Method**

*Participants*

Participants were eighteen coaches (Male n=16, Female n=2; Age: 20-30 years n=2, 31-40 years n=7, 41-50 years n=8, 51-60 years n=1) from a variety of team (n=8) and individual (n=10) sports who attended one of the National Coaching Foundation's (N.C.F.’s) Level 3 coach education courses for experienced coaches.

*Procedures*

Either before or immediately after the N.C.F. course, coaches were asked to participate in a study examining coaches’ attitudes in sport. It was made clear that the study was not related to the N.C.F. course. A *Sports Coach Questionnaire* (see Appendix 1), based on an attribution-emotion measure used by Biddle and Hill (1992 a&b), was distributed to those willing to participate. Coaches were asked to complete the questionnaire immediately following a competition or, if

\(^{1}\) The term 'athlete' is used here and in subsequent chapters in the generic sense, referring to any sport performer.
not possible, a significant training event (i.e., a session perceived by the coach to be key in a training cycle) involving one of the coaches’ performers. Forms were returned to the author the following week. Each questionnaire contained clear instructions and information concerning confidentiality.

Instrument
After descriptive details (age, sex, nature of sport), coaches rated the ‘importance of winning’ and the ‘importance of performing well’ (for the chosen event) on two separate 7-point scales, ranging from ‘Very important’ (1) to ‘Not at all important’ (7). In relation to their athlete’s performance, they then made ratings on thirteen 5-point bipolar emotion scales: pleased-displeased, satisfied-dissatisfied, happy-unhappy, contented-discontented, competent-incompetent, good-bad, confident-unconfident, proud-shameful, relaxed-tense, unconcerned-concerned, elated-depressed, sense of achievement-frustrated, and calm-angry, based on Biddle and Hill’s (1992 a&b) studies. High scores indicate the positive end of the continuum (i.e., the first word in the pairs above). In addition, the coach’s degree of satisfaction with ‘your performer’s standard of performance’ was measured on a 6-point bipolar scale (Satisfied=1, Dissatisfied=6). Unipolar 5-point scales measured coaches’ current ratings of surprise (which can be equated to degree of unexpectedness), disappointment and guilt, where 1=‘Not at all’, 5=‘Very much’.

Nine attributions commonly used in sport (Biddle & Hill, 1988, 1992a; Roberts & Pascuzzi, 1979) were presented. Coaches rated each attribution on two 5-point scales: the first concerning the extent to which the outcome was due to each factor; the second the degree the performance was due to each factor. Eight coaches responded in relation to significant training sessions, and so ‘performance importance’ and ‘performance satisfaction’ were considered for subsequent analyses (rather than ‘outcome importance/satisfaction’).

The median performance satisfaction score was used to split the attribution and emotion scores given by coaches into two sub-groups (highly satisfied=1-2; less satisfied=3-6). Data from these sub-groups were then analysed separately. Scores
were also split at the median according to level of surprise (low surprise=1-2; high surprise=3-5) and similar analyses conducted.

Results
Descriptive data are shown in Table 2. These reveal that both sub-groups of coaches, based on satisfaction scores, felt that ‘performing well’ was considered important and that they were generally not dissatisfied with the performances of their athletes.

Table 2: Performance importance and performance satisfaction data.

<table>
<thead>
<tr>
<th></th>
<th>Performance importance</th>
<th>Performance satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>All coaches (n=18)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfied (n=9)</td>
<td>2.28</td>
<td>1.32</td>
</tr>
<tr>
<td>Dissatisfied (n=9)</td>
<td>2.33</td>
<td>1.41</td>
</tr>
<tr>
<td></td>
<td>1=very important</td>
<td>7=not important</td>
</tr>
</tbody>
</table>

Attributions for performance
Attributions for performance made by ‘highly satisfied’ (HS) and ‘less satisfied’ (LS) and ‘highly surprised’ (HSu) and ‘less surprised’ (LSu) coaches are presented in Table 3.

Table 3: Mean attribution scores as measured on a 5-point scale (5=high) made coaches who were highly satisfied or less satisfied and highly surprised or less surprised with performance (attributions’ relative ranking is shown in brackets).

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Coaches’ performance appraisal</th>
<th>Coaches’ degree of surprise</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HS (n=9)</td>
<td>LS (n=9)</td>
</tr>
<tr>
<td>Luck</td>
<td>1.63 (9)</td>
<td>1.50 (9)</td>
</tr>
<tr>
<td>Ability</td>
<td>4.11 (1)</td>
<td>3.38 (4)</td>
</tr>
<tr>
<td>Effort</td>
<td>4.00 (2=)</td>
<td>4.00 (1)</td>
</tr>
<tr>
<td>Mood</td>
<td>3.56 (7)</td>
<td>3.75 (3)</td>
</tr>
<tr>
<td>Fitness</td>
<td>3.78 (4=)</td>
<td>2.75 (7)</td>
</tr>
<tr>
<td>Previous experience</td>
<td>3.67 (6)</td>
<td>3.00 (6)</td>
</tr>
<tr>
<td>Motivation</td>
<td>4.00 (2=)</td>
<td>3.88 (2)</td>
</tr>
<tr>
<td>Personality</td>
<td>3.78 (4=)</td>
<td>3.25 (5)</td>
</tr>
<tr>
<td>Form</td>
<td>3.22 (8)</td>
<td>2.43 (8)</td>
</tr>
</tbody>
</table>
For each coach group, the three most highly scored attributions are highlighted. From Table 3 it can be seen that 'highly satisfied' coaches attribute performance most to 'ability', 'effort' and 'motivation'. 'Less satisfied' coaches also attribute most to 'effort' and 'motivation', presumably a lack of these qualities, but also 'mood'. For both groups of coaches, 'luck' is least identified as the performance cause. The largest difference between group mean scores is for 'fitness'. Despite similar patterns of attributions scores for both groups, scores are generally highest, across all but two scales, for the 'highly satisfied' coach group.

In all except two of the attribution scales ('previous experience', 'personality'), scores for 'surprised' coaches are lower than for 'less surprised' coaches. 'Motivation', 'effort' and 'ability' are attributions most highly rated by less surprised coaches, whereas 'effort', 'personality' and 'mood'/previous experience' are causes rated highest by the more surprised coach group. 'Luck' is least employed by all groups. The largest difference between group mean scores is for 'motivation'.

*Ratings of emotional feelings*

Highly satisfied and less satisfied, and highly surprised and less surprised coaches' emotional ratings are provided in Table 4. The figure in brackets represents the score minus the mid-scale score of 3 (which represents a neutral state in a bi-polar scale). Those most strongly felt emotions are highlighted. Those marked with the * were rated on unipolar scales.
Table 4: Mean emotion scores as measured on 5-point bipolar scales (5=strong feeling as labelled in the table) and *5-point unipolar scales (5='very much').

<table>
<thead>
<tr>
<th>Emotions</th>
<th>Coaches’ performance appraisal</th>
<th>Coaches’ degree of surprise</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HS (n=9)</td>
<td>LS (n=9)</td>
</tr>
<tr>
<td></td>
<td>Actual (-MP) score</td>
<td>Actual (-MP) score</td>
</tr>
<tr>
<td>Pleased</td>
<td>4.67 (1.67)</td>
<td>3.33 (0.33)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>4.22 (1.22)</td>
<td>3.44 (0.44)</td>
</tr>
<tr>
<td>Happy</td>
<td>4.22 (1.22)</td>
<td>3.11 (0.11)</td>
</tr>
<tr>
<td>Content</td>
<td>3.67 (0.67)</td>
<td>3.00 (0.00)</td>
</tr>
<tr>
<td>Competent</td>
<td>4.22 (1.22)</td>
<td>3.78 (0.78)</td>
</tr>
<tr>
<td>Good</td>
<td>4.44 (1.44)</td>
<td>3.56 (0.56)</td>
</tr>
<tr>
<td>Confident</td>
<td>4.56 (1.56)</td>
<td>4.11 (1.11)</td>
</tr>
<tr>
<td>Proud</td>
<td>4.22 (1.22)</td>
<td>3.22 (0.22)</td>
</tr>
<tr>
<td>Relaxed</td>
<td>4.44 (1.44)</td>
<td>3.22 (0.22)</td>
</tr>
<tr>
<td>Unconcerned</td>
<td>2.89 (-0.11)</td>
<td>2.89 (-0.11)</td>
</tr>
<tr>
<td>Elated</td>
<td>3.89 (0.89)</td>
<td>3.11 (0.11)</td>
</tr>
<tr>
<td>Sense of achievement</td>
<td>4.33 (1.33)</td>
<td>3.22 (0.22)</td>
</tr>
<tr>
<td>Calm</td>
<td>4.00 (1.00)</td>
<td><strong>3.89 (0.89)</strong></td>
</tr>
<tr>
<td>Surprised*</td>
<td>2.56</td>
<td>2.11</td>
</tr>
<tr>
<td>Disappointed*</td>
<td>1.33</td>
<td>2.78</td>
</tr>
<tr>
<td>Guilty*</td>
<td>1.11</td>
<td>2.11</td>
</tr>
</tbody>
</table>

For all except the ‘unconcerned’ scale, emotion scores (on bipolar scales) for all coach sub-groups are above the mid-point, reflecting at least a mild expression of the emotions listed in the table. Satisfied coaches tend to report stronger feeling than less satisfied coaches on all but one bipolar scale. Mean scores on the unipolar scales are all lower than the mid-point, suggesting these emotions were not greatly experienced. Less satisfied coaches appear to experience more disappointment and guilt.

The pattern between sub-groups divided by degree of surprise is less clear. Both highly- and less-surprised groups report positive emotions and similar mean scores on most emotions.

Relationship between attributions and emotional ratings

Zero-order correlations between attribution scores and the top 8 bipolar and all unipolar emotional ratings for HS and LS coach groups with correlation coefficients greater than or equal to 0.6 are shown in Table 5. This value was
selected as a medium to large correlation rather than showing significance levels that, due to the small sample size, are less meaningful.

Table 5: Attribution-emotion correlations for HS and LS coaches.

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<tr>
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<tr>
<td>LS coaches (n=9)</td>
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<td></td>
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<tr>
<td>Effort</td>
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<td>0.87</td>
<td>0.72</td>
<td></td>
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<tr>
<td>Mood</td>
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<td>Previous exp.</td>
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<tr>
<td>Personality</td>
<td>0.62</td>
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</tbody>
</table>

Most notable results from Table 5 include satisfied coaches’ feelings of ‘disappointment’, ‘surprise’ and ‘guilt’ all being inversely related to attributions of ‘ability’ and ‘form’, ‘disappointment’ and ‘guilt’ being inversely related to ‘previous experience’, and ‘confidence’ being strongly inversely related to ‘luck’.

For less satisfied coaches there are more attribution-emotion relationships than for highly satisfied coaches. However, there are fewer relationships between attributions and the feelings of ‘surprise’, ‘disappointment’ and ‘guilt’. Attributions to ‘effort’ and ‘personality’ are each related to five emotions. However, with the exception of feeling ‘competent’ being positively associated with attributions to ‘ability’ and ‘effort’ and negatively related to ‘mood’, no other single emotion is associated with such a range of attributions. ‘Personality’ attributions have strong associations with affect across both high and less satisfied coaches.
Zero-order correlations between attributions scores and the top 8 bipolar and all unipolar emotional ratings for LSu and HSu coach groups with correlation coefficients greater than or equal to 0.6 are shown in Table 6.

Table 6: Attribution-emotion correlations for LSu and HSu coaches.

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<tbody>
<tr>
<td><strong>Less Surprised coaches (n=11)</strong></td>
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<tr>
<td>Ability</td>
<td>-0.77</td>
<td>0.77</td>
<td></td>
<td></td>
<td></td>
<td>0.63</td>
<td>-0.71</td>
<td>0.67</td>
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</tr>
<tr>
<td>Effort</td>
<td>-0.61</td>
<td>0.78</td>
<td>0.80</td>
<td></td>
<td></td>
<td>0.75</td>
<td>-0.62</td>
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</tr>
<tr>
<td>Fitness</td>
<td></td>
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<td></td>
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<td></td>
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<td>Motivation</td>
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<td>0.62</td>
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<td></td>
<td>0.69</td>
<td>-0.64</td>
<td>-0.82</td>
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<td>Form</td>
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<tr>
<td><strong>High Surprised coaches (n=7)</strong></td>
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<tr>
<td>Luck</td>
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<td>Ability</td>
<td>-0.77</td>
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<td>-0.63</td>
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<tr>
<td>Mood</td>
<td>-0.69</td>
<td>-0.71</td>
<td>-0.71</td>
<td></td>
<td></td>
<td>-0.75</td>
<td>-0.64</td>
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<td>Previous exp.</td>
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<td></td>
<td></td>
<td></td>
<td>-0.75</td>
<td>-0.64</td>
<td></td>
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<tr>
<td>Motivation</td>
<td>-0.65</td>
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<td></td>
<td>-0.76</td>
<td>-0.72</td>
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<tr>
<td>Personality</td>
<td>-0.63</td>
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<td>-0.72</td>
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<td>Form</td>
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<td>-0.87</td>
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</tbody>
</table>

Where the coach is less surprised by the performance, it appears that ‘effort’ and ‘ability’ are attributions strongly related to a number of emotions, five each. Furthermore, a feeling of ‘guilt’ is negatively related to four attributions: ‘ability’, ‘effort’, ‘fitness’ and ‘form’.

For those coaches who are most surprised by performance there is a wider spread of attribution/emotion relationships. Feelings of ‘satisfaction’ seem to be most related to attributions, being negatively related to five.

Collectively, across to the two coach sub-groups, feelings of satisfaction and guilt seem to be most related to attributions.
Discussion

In this study coaches rated both attributions for their athletes' performances and the emotions they felt themselves following these outcomes. Both Weiner (1986) and Vallerand (1987) suggest that attributions affect emotional reactions following an outcome. However, there are no published studies investigating the links between coaches' emotions and the attributions they give for the performances of their athletes. It was hypothesised that the attributions made by coaches would be related to a number of emotions and that these relationships would be stronger following less satisfying, unexpected and/or important outcomes (Weiner, 1985). Since all events were viewed as relatively important, the focus is on levels of satisfaction and expectation.

Attributions

The present findings suggest an emphasis by both satisfied and less satisfied coaches on transient aspects of the performer's behaviour as the causes of performance, such as 'effort', 'mood' and 'motivation'; 'ability' is also highly rated, although this is, perhaps, more stable. These attributions are internal to the performer and, with the exception of effort, arguably uncontrollable by the performer, although the coach may feel able to influence them. Such an emphasis may allow coaches to perceive more potential change in, and control over, performances than if more stable factors were seen as causal. 'Form', which is internal to the performer, relatively unstable and, arguably, uncontrollable by coach or performer, and 'luck', external, unstable and uncontrollable, are the least rated causes offered by both satisfied and least satisfied coach groups.

It should be noted, however, that due to the number of recorded events relating to training performances, as opposed to competition performances, this study offers attributions which tend to stress factors internal to the performer (although not necessarily dispositional); from the attributions offered, only 'luck' can be seen as external to the performer. Factors relating to opponents (as included in Biddle and Hill's, 1992, studies) were not considered in the final analyses because in many cases no opponents were present.
Highly satisfied coaches tend to make stronger attributions than do less satisfied coaches across the range of attributions offered; exceptions being ‘effort’ and ‘mood’. Assuming that high satisfaction is associated with a level of performance above expectation, and bearing in mind that even the low satisfaction group had a moderate mean satisfaction score, these findings may offer some support for claims by Susskind et al. (1999) that attributors may make fairly immediate causal ascriptions and only search for further causes if the outcome is unexpected or otherwise unusual. It is possible that coaches who are highly satisfied with the athlete’s performance search more deeply for a cause or causes, implicating a larger number of causal elements with stronger conviction. However, further research is needed to substantiate this claim and, in doing so, there is a need to distinguish positive and negative ‘unexpectedness’.

When examining the data grouped by level of surprise, which can be seen as a measure of unexpectedness, those coaches least surprised by the performance tend to offer stronger attributions than those more surprised. Even taking account of the small sample size, these findings are difficult to reconcile with the preceding suggestions. Susskind et al. (1999) have argued that outcomes that confirm prior expectations are more likely to be explained by existing causal beliefs and, hence, less attributional search, whereas more surprising outcomes require greater search and, thus, it can be argued, potentially a greater number of strongly evoked causes offered. However, this is not suggested by the data in the present study. It is possible that those coaches with expectations which are subsequently fulfilled and, hence, experience less surprise, may have considered a large number of contributory factors on which to base their expectation and, when asked for, are then offered. Certainly, it has been suggested that expectancy-confirming information may be of greater value to the perceiver than Jones and Davis’ theory suggests (Crittenden, 1983). It is also possible that both highly satisfied and lowly satisfied coaches are surprised, in the sense that performance may either exceed or fall below expectation and, hence, attributional search is triggered in both situations.

‘Motivation’, ‘effort’ and ‘ability’ are attributed most by less surprised coaches, whereas ‘effort’, ‘personality’ and ‘mood’/‘previous experience’ are causes most
given for the more surprised coaches group. One might expect a coach in a long-term ongoing relationship with a performer to be able to predict the performer's 'motivation' and 'ability', which are both internal to the performer and relatively stable, whereas 'mood', internal, but potentially less stable and less controllable, and 'personality' effects, again, internal and relatively stable, but uncontrollable, might be harder to take account of and are, therefore, potentially more likely to be offered following an unexpected performance. Whilst 'effort' appears as an attribution made by both groups, it may be that effort co-acts with other causal factors; for example, effort may be given when motivated, but not given when in an inappropriate mood. This suggests the need to study levels and complexity of causal ascription and the potential interaction of causal elements.

**Emotions**

The emotions most strongly felt by 'highly satisfied' coaches are feeling 'pleased', 'confident', 'good', 'relaxed' and 'a sense of achievement'. Interestingly, the emotions most highly rated by 'less satisfied' coaches also include 'confident' and 'feeling good', as well as feeling 'calm', 'competent' and 'satisfied', although these are all felt less strongly than by the 'highly satisfied' coaches. This perhaps reflects the generally satisfied nature of the entire sample of coach responses.

The lowest emotion score given by all coach sub-groups, and the only emotion score below the mid-point, is for 'unconcerned-concerned'. However, this scale is difficult to interpret as even if the score indicated more extreme 'being concerned', this is not necessarily a negative feature; it is not surprising that a coach is concerned about performance, although it appears here no more so for less satisfying than satisfying performances.

Less surprised coaches report most feeling 'confident', 'good', 'competent', 'calm' and 'pleased'. The most strongly evoked emotions for the more surprised coaches are feeling 'pleased', 'satisfied', 'confident' and 'relaxed'. However, the emotion scores of these two groups do not appear to be clearly distinguished by degree of surprise.
Relationships between attributions and emotions

A larger number of attribution-emotion correlations with coefficients greater or equal to 0.6 are evident for 'less satisfied' coaches than for 'highly satisfied' coaches. This is surprising in the light of findings by Milech and Nesdale (1984), who found direct relationships between attributions and the emotion of 'happiness' for positive outcomes, but not negative outcomes. From the current data, one possibility is that the lack of satisfaction felt by the coach may trigger attributional search and subsequent emotional reactions are associated with the causes therein derived. In line with Weiner's (1986) attribution-emotion model, emotions felt after a satisfying performance may be more independent of the attributions given, hence, the occurrence of fewer attribution-emotion relationships.

For less satisfied coaches attributions to 'effort' and 'personality' are each related to five emotions. However, with the exception of feeling 'competent' being positively associated with attributions to 'ability' and 'effort', and negatively related to 'mood', no other single emotion is associated with such a range of attributions.

'Personality' attributions seem to have strong associations with affect across both highly and less satisfied coach groups. With training for sport, and especially those such as running events, swimming and cycling, being largely repetitive and both physically and mentally demanding, the coach may place great emphasis on strength of character type attributes.

It seems that the attributions made by coaches are related to a range of emotions for both highly surprised and less surprised groups. One possible explanation is that for surprising performances, either better or worse than expected, attributional search results in emotions that are attribution-dependent, whereas, when outcomes match expectation, the emotions felt are related to attributions pre-conceived as likely to influence future outcomes (Osberg & Shrauger, 1986).

Performer 'effort', which is external to the coach, unstable and controllable mainly by the performer, in particular seems to be related to a number of
emotions, being negatively correlated with feeling 'satisfied' and of 'guilt', and positively related to feelings of 'confidence', 'competence' and a 'sense of achievement'. Without an appreciation of how the coach is interpreting the emotion (e.g., is the coach considering satisfaction with the performer or the self?), these findings are difficult to interpret. For example, one might expect a coach attributing an expected poor performance to a lack of performer effort to be less satisfied, but an expected good performance similarly attributed to (high) effort to be more satisfying. These findings highlight the importance of differentiating between positive and negative interpretations of the attributions offered, e.g., motivation is presumably seen as a positive contributory factor when coaches are satisfied with performance, but where elicited for less satisfying performances, is seen as lacking, i.e., a negative contributory factor. Such an awareness and understanding is central to other models of motivation, such as Kerr’s (1997) application of reversal theory (Apter, 1982) of motivation and emotions to sport.

It might be expected that emotions would be more strongly felt following competitive events. Furthermore, it has been suggested that actions perceived to have greater hedonic relevance, in this case for the coach, are more likely to result in a more extreme judgement of the actor, here, the performer (Biddle, 1993). Therefore, future research needs to focus on real-life competitions and the hedonic relevance of the athletes’ performances experienced by the coach. In interpreting these findings in relation to evidence in the existing literature, notice should be taken of the distinction between the passive and active observer made by Monson and Snyder (1977). It seems plausible to argue that the coach, at least in training situations and arguably in some competitive situations, is active in the process of performance.

Osberg and Shrauger (1986) have suggested that researchers recording attributions must take account of time-from-event when considering the actor-observer effect. For example, Moore et al. (1979) have shown that attributions become more dispositional over time. In the present study it is not known how soon after the performance coaches completed the questionnaire. It is possible
that this may have been done up to a week after the event, in which case there may have been a greater tendency to make attributions to personal factors.

Summary
This preliminary study aimed to explore the attributions made and emotions experienced by sports coaches. Eighteen coaches from a range of sports completed an attribution and emotion questionnaire soon after a competition or training event involving one their performers. It was hypothesised that coaches’ attributions would be related to a number of emotions and these relationships would be strongest following less satisfying or unexpected outcomes. This hypothesis was broadly supported.

The present findings suggest that highly satisfied and less surprised coaches tend to make stronger attributions than do less satisfied and more surprised coaches. They also suggest an emphasis by both satisfied and less satisfied coaches on transient factors internal to the performer as the causes of performance. Such an emphasis may allow coaches to perceive more potential change in, and control over, performances than if more stable factors were seen as causal.

Furthermore, it appears that some attributions made by coaches are strongly associated with their emotional reactions. For example, performer ‘effort’ appears most related to a range of coach emotions. Coaches’ attributions seem to be related to more emotions when the performance of the athlete is less satisfying to the coach. Furthermore, level of coach surprise appears not to affect the number of attribution-emotion associations. Future research into coaching behaviour, and in particular emotion management, may find it useful to consider coaches’ information processing in relation to responses to dissatisfaction.

The next chapter will consider coaches’ and their performers’ attributions made soon after significant, actual sporting outcomes in an attempt to assess the potential for attributional conflict.
Chapter 4. Study II: Coach-performer Compatibility: Logbook Data

Introduction

In an attempt to examine coaches' responses to their performers' outcomes and, in so doing, start to redress the dominant research focus within the sport dyad on the performer, Study I considered exclusively coaches' attributions for key events. However, ultimately coach and performer work together to plan, implement and evaluate training and competition strategy. Therefore, the coach's and performer's perceptions concerning sports event need joint consideration.

In order to examine the relationship between coach and performer, Rejeski suggests using a model of attributional conflict. This model provides a framework within which potential interpersonal conflict and compatibility can be explored. Rejeski's model (for a detailed review, see page 55) proposes that potential attributional conflict is preceded by a number of antecedent conditions; these may include individual differences between coach and performer, situational factors (e.g., a lack of goal attainment, negative behaviour) or perceptual differences as a result of the coach's and performer's distinct access to outcome-related information. These factors, along with motivation-related influences, may interact to produce the conditions for conflict which, in turn, have immediate and more distant consequences (Rejeski, 1979).

It will be recalled that the major theoretical premise for supporting a model of attributional conflict is that actors tend to attribute externally (i.e., as a result of factors related to the situation), whereas observers tend to attribute to factors related to the actor (e.g., behaviour). In the literature reviewed, there are a number of potential qualifications to this premise; it is also appropriate to consider the extent to which the coach is passive or active in the performance process. In addition, conflict in the coach-performer dyad is more likely to occur, according to Rejeski, when important events have negative outcomes, that are important and when the coach feels personally affected by the consequences.

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1 It is noted here that Watson (1982) preferred the terms *self* and *other*, which may be more appropriate in the coach-performer situation.
The concept of *compatibility* in relation to attributions needs further clarification. When researchers code attributions they utilise a number of attributional dimensions such as locus of causality, stability and controllability (the reliability and construct validity of these dimensions are reported on pages 110-111). When considering compatibility in an interpersonal setting researchers may look at *differences* between ratings on each dimension. However, the mere presence of a difference (even, perhaps especially, if repeated across time) may reflect a difference in attributional style which in itself may be accommodated within an established working dyad. Perhaps of more significance is the consistency of dimensional ratings over time; that is, does the degree of difference or similarity vary across events or time? This is a measure of co-variation or correlation. It is argued here that both these measures, differences and co-variation, are necessary to assess compatibility.

Furthermore, in order to overcome a weakness of many attribution questionnaires, that of eliciting one cause for one, often hypothetical, outcome, an approach is required which allows the respondent to offer as many causal elements as felt appropriate to explain the event. In this way, real events can be explained in a manner more consistent with everyday conversation.

*Purpose of Study*

The purpose of this study is to utilise Rejeski’s (1979) model to examine coach-performer explanations for the real-life sporting events they experience. The attributions made by coaches and their performers for the performers’ *natural* sporting outcomes in both training and competition will be examined to determine the extent to which they are compatible or in potential conflict. An approach will be used that allows dyads to select events of most significance to them, and permits open format responses to questions of cause.
Hypotheses

Based on Rejeski's model, it is hypothesised that:

- due to actor-observer differences, coaches and performers will have patterns of attributing which differ in their causal dimension qualities
- there will be greater attributional compatibility when training and competition performances are perceived to be successful and greater potential for conflict following performances perceived as poor
- due to hedonic relevance, there will be less compatibility when the outcome is perceived to be important.

Methods

Participants

Five athletics (track and field) coaches in the north-west of England were identified through personal contact with the Head British Students Athletics Coach. Each of these coaches was qualified through the British Athletics Federation (BAF) coach certification scheme to at least Club (three to Senior Club) Coach level. Athletes ranged in ability from competitive club to senior international level and in age from 18-40. All coach-performer dyads had been working together for at least 2 years.

As can be seen from Table 7, which provides a descriptive summary of participants, some coaches in the study coached more than one athlete in the study group.
Table 7: Descriptive data for coaches (C1-C5) and performers (P11-P51).

<table>
<thead>
<tr>
<th>Coach</th>
<th>Gender</th>
<th>Qualification</th>
<th>Athlete(s) coached</th>
<th>Gender</th>
<th>Age category</th>
<th>Event category</th>
<th>Competition level</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1/1.1</td>
<td>Female</td>
<td>Senior club</td>
<td>P11</td>
<td>Male</td>
<td>Junior</td>
<td>Sprints</td>
<td>County</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>P12</td>
<td>Female</td>
<td>Senior</td>
<td>Sprints</td>
<td>County</td>
</tr>
<tr>
<td>C2</td>
<td>Male</td>
<td>Senior club</td>
<td>P21</td>
<td>Female</td>
<td>Senior</td>
<td>Long sprints</td>
<td>County</td>
</tr>
<tr>
<td>C3/3.1</td>
<td>Male</td>
<td>Club</td>
<td>P31</td>
<td>Male</td>
<td>Senior</td>
<td>Middle distance runner</td>
<td>Club</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>P32</td>
<td>Male</td>
<td>Senior</td>
<td>Middle distance runner</td>
<td>Club</td>
</tr>
<tr>
<td>C4/4.1</td>
<td>Male</td>
<td>Senior club</td>
<td>P41</td>
<td>Female</td>
<td>Senior</td>
<td>Middle distance runner</td>
<td>International</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>P42</td>
<td>Female</td>
<td>Senior</td>
<td>Middle distance runner</td>
<td>International</td>
</tr>
<tr>
<td>C5</td>
<td>Male</td>
<td>Club</td>
<td>P51</td>
<td>Female</td>
<td>Junior</td>
<td>Multi-event</td>
<td>Club</td>
</tr>
</tbody>
</table>

Athletics was chosen because of the researcher's familiarity with the sport. Additionally, by studying an individual sport, it can be argued that no account need be taken of team membership, found to affect the pattern of attributions following wins and losses (Scanlon & Passser, 1980), or team cohesion, found to affect attributions made in team settings (Bird et al., 1980).

Procedures

These coaches were contacted and asked to participate, with their respective athletes, in a longitudinal study lasting one season (approximately 9 months), commencing at the beginning of the preparation phase (October).

Coaches and athletes were met individually and told that the study was aiming to examine coaches' and performers' attitudes to training and competition. They
were assured that all information would be treated in the strictest confidence. The techniques to be used were explained and the participants had the opportunity to ask questions. Coaches and performers were given a supply of log sheets (see Appendix 2) to be completed for 2-3 training sessions or competition events per week (usually two training sessions per week and all competitions).

**Instrument**

The log sheet is divided into two parts: Part 1 asked for a description of the forthcoming training or competition event, the major goal for this event and its relative importance (measured on a five-point Likert-scale); this was completed before, and as close to, the event as possible. Part 2, evaluating the outcome of the event in relation to the identified goal, asked the respondent to rate the level of success on a 5-point Likert-scale (‘1’ = ‘total success’, ‘5’ = ‘failure’) and, in answer to the following: ‘Please give your explanation for this degree of success, i.e. the cause of this success/failure’, to use an open response format to ascertain the main causes of this degree of relative success.

It was stressed that coaches and performers should complete their log sheets independently and return them to the researcher in separate pre-paid envelopes on a four-weekly basis.

**Analyses**

Open responses to the question of cause were coded by the researcher using the following attributional dimensions. The definitions of these dimensions have been adapted from Stratton et al. (1988) to allow contextually meaningful analyses.

- **Locus of causality (coded internal or external)**

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2 The data presented here are part of a larger study with these subjects, incorporating post-event interviews in addition to questionnaire data collection.

3 Goal-achievement was used (rather than win/loss) in order to take account of perceptions of success as suggested by previous researchers (e.g., McAuley 1985).

4 This time-scale was to facilitate the interview component of the project.

5 It is recognised that such coding by the researcher may lead to a fundamental attribution research error (Russell, 1982) and was undertaken in the light of McAuley et al.’s (1983) finding of low researcher-subject correlations for assignment of causal elements to dimensions. This is discussed further below.
i.e. Is the stated cause located within or without the athlete?  
- Stability (coded stable or unstable)  
i.e. Is the stated cause going to be influential to outcomes in one month's time?  
- Controllability (coded controllable or uncontrollable)  
i.e. Could the stated outcome have been changed by the attributor without concerted effort?  
- Universality (coded universal or personal)  
i.e. Does the causal statement tell the researcher something that is distinctive or idiosyncratic about the athlete?  
- Globality (coded global or specific)  
i.e. Does the stated cause affect just the stated outcome or many outcomes?

Attributional statements were coded based on methods described by Stratton et al. (1988), with the following exception:
Stability – a causal factor was coded stable if it was considered to have at least a 50% probability of remaining active in influencing outcomes in 1 month’s time (as opposed to 6 months suggested by Stratton et al., 1988, in relation to clinical and therapeutic settings).

These dimensions are identified by Stratton and colleagues as pertinent to the analysis of naturally occurring attributions in interview situations.

Consistent with Tenenbaum and Furst’s view that attributors may offer multiple causes in order “to capture the variable events which had transpired” (1986, p.316), most responses offered more than one cause per outcome. In such situations each causal element within the statement was coded separately and an aggregate dimension score calculated for each response; therefore, each response

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6 Locus of causality and universality here consider whether the cause is internal or external to the athlete and says something distinctive about the athlete.
7 It was felt more meaningful to code attributions for universality in relation to the athlete since the outcomes were athletes’ performances.
8 The second part of this study involved interviewing coaches and performers in order to reflect on their sporting outcomes and therefore used the dimensions identified by Stratton et al. (1988). Questionnaire data analysis needed to be compatible with the analysis of interview data in order to contrast results.
elicited an aggregate score on each of the five dimensions. This was achieved by attaching numerical values to each statement by dimension, as in Table 8.

Table 8: Numerical coding of attribution dimensions.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Direction</th>
<th>Numerical coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locus of causality</td>
<td>Internal (to the athlete)</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>External (to the athlete)</td>
<td>-1</td>
</tr>
<tr>
<td>Stability</td>
<td>Stable</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Unstable</td>
<td>-1</td>
</tr>
<tr>
<td>Controllability</td>
<td>Controllable (by the attributor)</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Uncontrollable (by the attributor)</td>
<td>-1</td>
</tr>
<tr>
<td>Universality</td>
<td>Universal (re: the athlete)</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Personal (to the athlete)</td>
<td>-1</td>
</tr>
<tr>
<td>Globality</td>
<td>Global</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Specific</td>
<td>-1</td>
</tr>
</tbody>
</table>

This numerical coding was used, rather than that of Stratton et al. (1988) and Munton et al. (1999), so that aggregate dimension scores would be grouped around zero and, therefore, aggregate scores representing either ends of the dimension would be positive or negative and, thus, easily recognisable; a score of zero therefore represents an aggregate score of no dimensional tendency. An example of the coding is given in the following illustration.

---

9 See Tenenbaum and Furst (1986) for a consideration of first and subsequent attributions. Where more than one statement was made, no weighting based on causal element order was given.
10 This numerical coding differs from Stratton et al.'s coding which uses 1 and 0 for each dimension scale.
A poor success score attributed by the performer as follows:

'...because it was a bad week and I wasn't really in the mood to race; anyway, I hate this type of course'.

would be coded: 

<table>
<thead>
<tr>
<th>It was a bad week</th>
<th>External, Unstable, Uncontrollable, Universal, Global</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(-1, -1, -1, 1, 1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I wasn't really in the mood</th>
<th>Internal, Unstable, Uncontrollable, Universal, Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1, -1, -1, 1, -1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I hate this type of course</th>
<th>Internal, Stable, Uncontrollable, Personal, Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1, 1, -1, -1, -1)</td>
</tr>
</tbody>
</table>

Taking an aggregate of these element scores, this response would be coded:

- Locus of causality: 1
- Stability: -1
- Controllability: -3
- Universality: 1
- Globality: -1

This process results in each statement made by either the coach or performer having five dimension scores which can then be compared with those of their dyadic partner.

Compatibility within the coach-performer dyad is considered in terms of both dimension compatibility (e.g., difference in each of the aggregate dimension scores) and in terms of overall summative compatibility (achieved by summing the dimension compatibility scores).
Analyses are conducted both at the group (across C-P dyads) and individual dyad level as follows.

**Individual dimension compatibility** was considered in relation to the following independent variables:
- Perceived success of the outcome (as perceived by the coach-performer dyads).
- Perceived importance of the event (as perceived by the coach-performer dyads).
- Other dimension compatibilities (i.e., co-variation).

**Summative compatibility** was considered in relation to:
- perceived success of the outcome (as evaluated by the coach-performer dyads)
- perceived importance of the event (as perceived by the coach-performer dyads).

The results for each C-P dyad were contrasted to examine any patterns in compatibility scores.

**Results**

*Descriptive statistics*

Table 9 shows the mean success, mean importance and mean dimension scores for each coach and performer, where:

Coach C1.0 coaches performer P11
Coach C1.1 coaches performer P12
Coach C2.0 coaches performer P21
Coach C3.0 coaches performer P31
Coach C3.1 coaches performer P32
Coach C4.0 coaches performer P41
Coach C4.1 coaches performer P42
Coach C5.0 coaches performer P51
<table>
<thead>
<tr>
<th>Locus:</th>
<th>Positive value</th>
<th>Negative value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Internal</td>
<td>External</td>
</tr>
<tr>
<td>Stability:</td>
<td>Stable</td>
<td>Unstable</td>
</tr>
<tr>
<td>Controllability:</td>
<td>Controllable</td>
<td>Uncontrollable</td>
</tr>
<tr>
<td>Universality:</td>
<td>Universal</td>
<td>Personal</td>
</tr>
<tr>
<td>Globality:</td>
<td>Global</td>
<td>Specific</td>
</tr>
</tbody>
</table>

Table 9: Mean success, mean importance and mean dimension scores.

<table>
<thead>
<tr>
<th>C=Coach</th>
<th>P=Performer</th>
<th>Success 1=v.succ. 7=Unsucc</th>
<th>Importance 1=v.imp. 7=Unimp</th>
<th>Locus</th>
<th>Stability</th>
<th>Control</th>
<th>Universal</th>
<th>Globality</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=27</td>
<td>n=27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C 1.0</td>
<td>2.38</td>
<td>1.72</td>
<td>0.84</td>
<td>0.44</td>
<td>-0.20</td>
<td>0.36</td>
<td>-0.20</td>
<td></td>
</tr>
<tr>
<td>P 11</td>
<td>2.63</td>
<td>1.63</td>
<td>0.35</td>
<td>0.00</td>
<td>-0.35</td>
<td>0.35</td>
<td>-0.52</td>
<td></td>
</tr>
<tr>
<td>C 1.1</td>
<td>1.83</td>
<td>1.72</td>
<td>0.94</td>
<td>0.94</td>
<td>0.56</td>
<td>0.39</td>
<td>-0.06</td>
<td></td>
</tr>
<tr>
<td>n=26</td>
<td>n=26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 12</td>
<td>1.88</td>
<td>1.88</td>
<td>1.00</td>
<td>0.62</td>
<td>0.38</td>
<td>0.08</td>
<td>-0.23</td>
<td></td>
</tr>
<tr>
<td>C 2.0</td>
<td>2.60</td>
<td>2.47</td>
<td>1.10</td>
<td>0.43</td>
<td>-0.77</td>
<td>0.10</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>n=30</td>
<td>n=30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 21</td>
<td>2.50</td>
<td>2.04</td>
<td>1.00</td>
<td>-0.31</td>
<td>-0.62</td>
<td>0.70</td>
<td>-0.62</td>
<td></td>
</tr>
<tr>
<td>C 3.0</td>
<td>1.59</td>
<td>1.30</td>
<td>0.29</td>
<td>-0.19</td>
<td>0.12</td>
<td>0.84</td>
<td>-1.14</td>
<td></td>
</tr>
<tr>
<td>n=58</td>
<td>n=58</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 31</td>
<td>1.83</td>
<td>2.40</td>
<td>0.21</td>
<td>0.14</td>
<td>0.05</td>
<td>1.00</td>
<td>-1.45</td>
<td></td>
</tr>
<tr>
<td>C 3.1</td>
<td>1.23</td>
<td>1.03</td>
<td>-1.00</td>
<td>0.48</td>
<td>-0.93</td>
<td>1.53</td>
<td>-1.55</td>
<td></td>
</tr>
<tr>
<td>n=40</td>
<td>n=40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 32</td>
<td>1.40</td>
<td>1.23</td>
<td>1.03</td>
<td>0.93</td>
<td>-0.43</td>
<td>1.28</td>
<td>-1.43</td>
<td></td>
</tr>
<tr>
<td>C 4.0</td>
<td>1.86</td>
<td>1.90</td>
<td>-0.47</td>
<td>-0.48</td>
<td>-0.57</td>
<td>0.92</td>
<td>-0.75</td>
<td></td>
</tr>
<tr>
<td>n=31</td>
<td>n=31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 41</td>
<td>2.30</td>
<td>1.70</td>
<td>0.38</td>
<td>-1.24</td>
<td>-0.76</td>
<td>0.67</td>
<td>-1.14</td>
<td></td>
</tr>
<tr>
<td>C 4.1</td>
<td>1.27</td>
<td>1.81</td>
<td>0.48</td>
<td>-0.19</td>
<td>-0.04</td>
<td>-0.04</td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td>n=35</td>
<td>n=35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 42</td>
<td>1.93</td>
<td>2.00</td>
<td>0.14</td>
<td>-0.69</td>
<td>-0.14</td>
<td>0.18</td>
<td>-0.14</td>
<td></td>
</tr>
<tr>
<td>C 5.0</td>
<td>2.22</td>
<td>2.35</td>
<td>0.53</td>
<td>-0.75</td>
<td>0.20</td>
<td>0.12</td>
<td>1.18</td>
<td></td>
</tr>
<tr>
<td>n=52</td>
<td>n=52</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 51</td>
<td>2.41</td>
<td>1.88</td>
<td>1.48</td>
<td>-1.19</td>
<td>-0.85</td>
<td>0.79</td>
<td>0.96</td>
<td></td>
</tr>
</tbody>
</table>
The above data can be summarised as follows:

- Generally, coaches and performers score the events as relatively successful, with coaches generally rating events as slightly more successful than do performers.
- Both coaches and performers consider events to be important; this is to be expected as only significant training events and competitions were selected for inclusion.
- Mean locus of causality scores are generally positive (i.e., internal to the athlete), especially those of performers.
- Mean universality scores are generally positive (i.e., universal in relation to athlete).
- Mean globality scores are generally negative (i.e., specific).
- There is no clear pattern for either the stability or controllability data, although in all cases except one, the coach and performer dyad’s mean controllability scores have the same sign (i.e., both tend to rate as controllable or uncontrollable).

**Group analyses**

Paired samples t-tests were conducted to test for differences in group scores for coaches and performers; the results of these are shown in Table 10.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Degrees of freedom</th>
<th>Mean</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success</td>
<td>252</td>
<td>1.92</td>
<td>-0.37</td>
<td>0.71</td>
</tr>
<tr>
<td>Importance</td>
<td>250</td>
<td>1.74</td>
<td>-1.96</td>
<td>0.51</td>
</tr>
<tr>
<td>Locus of causality</td>
<td>252</td>
<td>0.28</td>
<td>-4.01</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Stability</td>
<td>252</td>
<td>0.00</td>
<td>1.98</td>
<td>0.05</td>
</tr>
<tr>
<td>Controllability</td>
<td>252</td>
<td>-0.16</td>
<td>-1.46</td>
<td>0.15</td>
</tr>
<tr>
<td>Universality</td>
<td>252</td>
<td>0.56</td>
<td>-1.91</td>
<td>0.06</td>
</tr>
<tr>
<td>Globality</td>
<td>248</td>
<td>-0.81</td>
<td>3.18</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>
Significant differences \((p<0.05)\) were found between coaches’ and performers’ scores (across all outcomes) for locus of causality and globality, such that coaches tend to offer causes which are less internal (to the athlete) and less specific than those of their athletes.

Table 11 shows results of Spearman’s Rank Order Correlations for all coach and performer scores for success, importance and all five dimensions.

**Table 11: Spearman’s Rank Order Correlations for success, importance and attribution dimensions across all coach and performer scores.**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Correlation coefficient ‘(r)’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success</td>
<td>0.69</td>
</tr>
<tr>
<td>Importance</td>
<td>0.30</td>
</tr>
<tr>
<td>Locus of causality</td>
<td>0.17</td>
</tr>
<tr>
<td>Stability</td>
<td>0.44</td>
</tr>
<tr>
<td>Controllability</td>
<td>0.23</td>
</tr>
<tr>
<td>Globality</td>
<td>0.23</td>
</tr>
<tr>
<td>Universality</td>
<td>0.19</td>
</tr>
</tbody>
</table>

It can be seen that for success \((r=0.69)\) and stability \((r=0.44)\), considerable variation in the scores of one dyadic partner is accounted for by those of the other partner. For importance and other dimension scores much weaker relationships between scores are evident.

Considering dimension scores for coaches and performers, Tables 12 (coaches) and 13 (performers) show the results of independent samples t-tests to examine potential differences in coaches’ and performers’ dimension scores when these scores are split on ‘success’ ratings.
Table 12: Differences in coaches' dimension scores when grouped by 'success' scores (group 1: success scores = 1; group 2: success scores > 1).

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Mean dimension score difference</th>
<th>Degrees of freedom</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locus</td>
<td>0.23</td>
<td>258</td>
<td>1.25</td>
<td>0.21</td>
</tr>
<tr>
<td>Stability</td>
<td>0.82</td>
<td>264</td>
<td>-5.45</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Control</td>
<td>0.23</td>
<td>260</td>
<td>-1.20</td>
<td>0.23</td>
</tr>
<tr>
<td>Universality</td>
<td>0.63</td>
<td>258</td>
<td>-3.68</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Globality</td>
<td>0.01</td>
<td>253</td>
<td>0.07</td>
<td>0.95</td>
</tr>
</tbody>
</table>

For coaches, results reveal significant differences on the 'stability', t(264)=-5.45, p<0.001, and ‘universality’, t(258)=-3.68, p<0.001, dimensions, such that successful outcomes are perceived as more stable and more universal than less successful outcomes.

Table 13: Differences in performers’ dimension scores when grouped by ‘success’ scores (group 1: success scores = 1; group 2: success scores > 1).

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Mean dimension score difference</th>
<th>Degrees of freedom</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locus</td>
<td>0.40</td>
<td>270</td>
<td>2.59</td>
<td>0.01</td>
</tr>
<tr>
<td>Stability</td>
<td>1.33</td>
<td>270</td>
<td>-7.36</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Control</td>
<td>0.60</td>
<td>270</td>
<td>-4.04</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Universality</td>
<td>0.19</td>
<td>270</td>
<td>-1.11</td>
<td>0.27</td>
</tr>
<tr>
<td>Globality</td>
<td>0.32</td>
<td>270</td>
<td>2.07</td>
<td>0.04</td>
</tr>
</tbody>
</table>

In relation to performers, significant differences were found on the ‘locus of causality’ t(270)=2.59, p=0.01, ‘stability’, t(270)=-7.36, p<0.001, ‘control’, t(270)=-4.04, p<0.001, and ‘globality’, t(270)=2.07, p<0.05, dimensions. Performers perceived the outcome more personally controllable, more stable, more specific and less internal (although still weakly internal) when successful than when unsuccessful.
Table 14: Differences in coaches’ dimension scores when grouped by ‘importance’ scores (group 1: importance scores = 1; group 2: importance scores > 1).

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Mean dimension score difference</th>
<th>Degrees of freedom</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locus</td>
<td>0.78</td>
<td>265</td>
<td>4.67</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Stability</td>
<td>0.40</td>
<td>265</td>
<td>-2.13</td>
<td>0.03</td>
</tr>
<tr>
<td>Control</td>
<td>0.31</td>
<td>265</td>
<td>1.72</td>
<td>0.09</td>
</tr>
<tr>
<td>Universality</td>
<td>0.86</td>
<td>254</td>
<td>-5.51</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Globality</td>
<td>0.38</td>
<td>254</td>
<td>2.17</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Table 15: Differences in performers’ dimension scores when grouped by ‘importance’ scores (group 1: importance scores = 1; group 2: importance scores > 1).

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Mean dimension score difference</th>
<th>Degrees of freedom</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locus</td>
<td>0.11</td>
<td>268</td>
<td>-0.69</td>
<td>0.49</td>
</tr>
<tr>
<td>Stability</td>
<td>0.34</td>
<td>268</td>
<td>-1.71</td>
<td>0.09</td>
</tr>
<tr>
<td>Control</td>
<td>0.32</td>
<td>268</td>
<td>-1.87</td>
<td>0.06</td>
</tr>
<tr>
<td>Universality</td>
<td>0.03</td>
<td>268</td>
<td>-0.19</td>
<td>0.85</td>
</tr>
<tr>
<td>Globality</td>
<td>0.13</td>
<td>268</td>
<td>-0.83</td>
<td>0.41</td>
</tr>
</tbody>
</table>

It appears from Tables 14 (coaches) and 15 (performers) that perceived task importance may mediate the coaches’ dimension scores to a greater extent than it does the performers’ scores. Coaches’ dimension scores split on importance show significant differences for ‘locus of causality’, such that outcomes of less important events are deemed more internal to the athlete than important events, \( t(265)=4.67, p<0.001 \); ‘stability’, where outcomes of important events were perceived as more stable, \( t(265)=-2.13, p<0.05 \); ‘globality’, where outcomes of important events were perceived as more specific, \( t(254)=2.17, p<0.05 \); and ‘universality’, where important outcomes were seen as more universal, \( t(254)=-5.51, p<0.001 \). No such significant differences were found for performers.
Dyadic compatibility

To test the degree to which individual coaches' and performers' dimension and success scores are related, a series of Spearman's Rank Order Correlation coefficients were calculated; these are presented in Table 16.

Table 16: Spearman's Rank Order Correlations between individual coaches' and performers' dimension, success and importance scores.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>C1.0/P11</td>
<td>0.54*</td>
<td>0.70**</td>
<td>0.45*</td>
<td>0.40</td>
<td>0.04</td>
<td>0.78**</td>
<td>0.78**</td>
</tr>
<tr>
<td>C1.1/P11</td>
<td>0.46</td>
<td>0.18</td>
<td>0.35</td>
<td>0.07</td>
<td>0.57*</td>
<td>0.84**</td>
<td>0.48*</td>
</tr>
<tr>
<td>C2.0/P21</td>
<td>-0.02</td>
<td>-0.02</td>
<td>0.51**</td>
<td>-0.02</td>
<td>0.03</td>
<td>0.67**</td>
<td>0.41**</td>
</tr>
<tr>
<td>C3.0/P31</td>
<td>0.32*</td>
<td>0.60**</td>
<td>0.39**</td>
<td>0.41**</td>
<td>0.33*</td>
<td>0.66**</td>
<td>-0.11</td>
</tr>
<tr>
<td>C3.1/P31</td>
<td>0.06</td>
<td>0.33*</td>
<td>-0.08</td>
<td>0.14</td>
<td>-0.06</td>
<td>0.61**</td>
<td>0.30</td>
</tr>
<tr>
<td>C4.0/P41</td>
<td>0.08</td>
<td>-0.09</td>
<td>0.12</td>
<td>-0.66*</td>
<td>0.54</td>
<td>0.42</td>
<td>0.06</td>
</tr>
<tr>
<td>C4.1/P41</td>
<td>0.31</td>
<td>-0.05</td>
<td>0.16</td>
<td>-0.06</td>
<td>-0.18</td>
<td>0.55**</td>
<td>0.44</td>
</tr>
<tr>
<td>C5.0/P51</td>
<td>0.26</td>
<td>0.23</td>
<td>-0.14</td>
<td>-0.04</td>
<td>-0.08</td>
<td>0.18</td>
<td>0.44**</td>
</tr>
</tbody>
</table>

* small 'n'  
* p<0.05  
** p<0.01

Certainly, from Table 16, most coach and performer dyads (the exceptions being C4.0/P41 & C5/P51) have success scores which are positively and significantly related. It appears that C3.0/P31 have dimension scores that are highly correlated, having significant correlations on all five dimension scores, whereas C4's dimension scores seem least related to those of his two athletes. All five of C5.0/P51's dimension scores and the success scores seem quite unrelated.

The highest number of significant correlations for dyad dimension scores is for the stability and control dimensions, with three from eight dyads' scores for each positively related.

In relation to Rejeski's model of attributional conflict, of interest is the degree to which there may be differences in dimension scores between individual C-P dyad members.
Appendix 3 (Tables 48 to 55) shows results of t-tests to examine the potential differences in dimension scores for individual C-P pairs. These t-tests revealed the significant differences shown in Table 17.

Table 17: A summary of significant differences between individual dyad members’ dimension scores.

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Dimension</th>
<th>‘t’ and ‘p’ values</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1.0/P11</td>
<td></td>
<td></td>
<td>No sig. differences</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td></td>
<td></td>
<td>No sig. differences</td>
</tr>
<tr>
<td>C2.0/P21</td>
<td>Stability</td>
<td>t(54)= 2.02</td>
<td>Coach: weak stable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p&lt;0.05</td>
<td>Performer: weak unstable</td>
</tr>
<tr>
<td>C3.0/P31</td>
<td></td>
<td></td>
<td>No sig. differences</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>Locus</td>
<td>t(78)= -6.69</td>
<td>Coach: external</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p&lt;0.001</td>
<td>Performer: internal</td>
</tr>
<tr>
<td>C4.0/P41</td>
<td>Locus</td>
<td>t(40)= -2.13</td>
<td>Coach: weak external</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p&lt;0.05</td>
<td>Performer: weak internal</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>Globality</td>
<td>t(51)= 3.19</td>
<td>Coach: weak global</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p&lt;0.001</td>
<td>Performer: specific</td>
</tr>
<tr>
<td>C5.0/P51</td>
<td>Locus</td>
<td>t(101)= -4.86</td>
<td>Coach: internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p&lt;0.001</td>
<td>Performer: stronger internal</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>t(101)= 4.12</td>
<td>Coach: weak controllable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p&lt;0.001</td>
<td>Performer: uncontrollable</td>
</tr>
<tr>
<td></td>
<td>Universality</td>
<td>t(101)= -2.60</td>
<td>Coach: weak universal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p&lt;0.05</td>
<td>Performer: stronger universal</td>
</tr>
</tbody>
</table>

Locus of causality appears to be the dimension where scores are most likely to vary between coach and athlete (three out of eight dyads here). Where there are differences in the locus of causality dimension scores, the trend is for the athlete to make attributions more internal to themselves than does the coach internal to the performer.

C5 and P51 appear to differ in a number of dimensions; this is in addition to their low correlations for success and dimension scores. In relation to Rejeski’s model, this suggests a strong potential for attributional conflict within this dyad.
Appendix 4 (Tables 56 to 63) shows the results of a series of Spearman's Rank Order Correlations for dyads' dimension compatibility scores. Results reveal the following.

For four of the C-P dyads there are significant \( (p<0.05) \) positive correlations between locus of causality compatibility and control compatibility (i.e., as compatibility on locus of causality increases, so does that of controllability). This indicates that the more the coach and performer agree as to the location of the cause, the more they agree as to whether it is controllable.

For two of the C-P dyads there are significant \( (p<0.05) \) positive correlations between locus of causality compatibility and globality compatibility (i.e., as locus of causality compatibility improves so does that of globality).

For three of the C-P dyads locus of causality compatibility and universality compatibility are significantly related; two dyads with significant \( (p<0.05) \) positive correlations (i.e., as compatibility on locus of causality improves so does that of universality) and one significant \( (p<0.01) \) negative correlation (i.e., greater compatibility on locus of causality relates to less compatibility on universality).

Also, there is one significant correlation for stability-universality \( (p<0.05) \), stability-controllability \( (p<0.05) \), stability-globality \( (p<0.05) \), universality-globality \( (p<0.05) \) and controllability-universality \( (p<0.05) \) compatibility scores.

Taking these results collectively, it appears that the relationship between compatibility on the locus of causality dimension and other dimensions may be especially important and worthy of further study.

In relation to aggregate compatibility, i.e., the composite of the five dimension compatibility scores, this does not appear to be affected by level of agreed success. Those dyads with agreed relative success (aggregate success score of <2) scored no differently on aggregate compatibility than those judging the outcome less successful (aggregate success score >=2).
Furthermore, of the individual dimension compatibility scores, only locus of causality compatibility approaches a significant difference when median split on aggregate success ($p<0.05$; actual difference in mean locus of causality scores 0.37, such that those scoring less successful were more compatible).

When splitting compatibility data based on agreed importance scores, once again, the only significant difference between the higher and lower importance groups is on the locus of causality dimension ($p<0.05$, actual difference in mean scores 0.29 such that those scoring less important were more compatible). See Appendix 5 (Tables 64 & 65) for results of t-tests between C-P compatibility scores differing on success and importance.

**Discussion**

It appears that, for the events sampled in this study, coaches and performers (as groups) deemed the outcomes generally successful and important. There were no significant differences between groups of coaches and performers in these scores. Since the majority of chosen events were training sessions, which were freely chosen from the week’s training regime, it seems reasonable to assume that these were chosen because of their relative significance. Future researchers might find it beneficial to consider more closely how events are sampled within a longitudinal study.

Locus of causality scores are generally positive, i.e., internal to the athlete; this is especially the case for performers, who score this dimension more internally to themselves than do coaches ($p<0.001$). This appears not to support the notion of the actor-observer difference which would predict coaches would attribute to factors internal to the athlete, which appears the case, and performers to environmental factors, not found here. Indeed, Biddle and Hill (1992a) make the point, in relation to winners’ and losers’ attributions, that the internal-external difference may be one of degrees of internality rather than a more distinct dichotomy. The data in Table 9 are, of course, mean scores across successful/less successful and important/less important events. Hewstone (1989) notes that there is evidence that the actor-observer effect is weakened by positive or negative outcomes (as opposed to neutral outcomes). Tillman and Carver (1980), for
example, found that positive outcomes tend to be attributed more to persons. Although no difference was found for coaches’ scores on locus of causality between high and lower success groups there was a significant difference (p=0.01) for performers, with the causes of less successful events judged by performers to be relatively more internal to them (although the difference in mean scores was small, 0.4, see Table 13). If this result was to be supported in future studies, one would need to re-consider the extent to which a self-serving bias (Zuckerman, 1979) may operate in natural settings. Event importance may mediate locus of causality scores: as Table 14 shows, coaches scoring events as important tend to attribute the outcome more to external factors than when less important (p<0.001), where the emphasis is more internal to the athlete. This may be because, for important events, the coach takes greater account of the sporting environment (e.g., the opposition, task difficulty, conditions) than for less important events, where the focus remains narrowly on the athlete. Importance does not appear to affect athletes’ locus of causality.

Analyses of stability scores suggest no significant (p<0.05) differences between coaches’ and performers’ scores. Both coaches (p<0.001) and performers (p<0.001) attribute more to stable factors when successful than when relatively unsuccessful, consistent with the findings of Grove, Hanrahan, and McInman (1991). This appears functional, as the resultant affect is likely to include confidence in the athlete’s future successes. For coaches, task importance appears to affect the use of stable explanations, which are drawn upon more for important events than for less important ones (p<0.05); no such difference was found for athletes. This may indicate that self- and other-serving biases are influenced by task importance; these results suggest that the coach is more likely to offer an other-serving preference for stable causes when the outcome is successful and important, but that the athletes’ (self-serving) preference may not be similarly influenced by event importance. One would expect the self-serving benefits of a bias towards stable causes for successful outcomes to be greater for important events.

In terms of controllability the raw data do not provide an equivocal pattern, although dyad members’ ascriptions appear largely compatible in terms of mean
scores. Since coach and performer work together within a dyad, perceived personal control by each is seen as compatible; perceived control by the coach is not seen as incompatible with perceived control by the athlete for the same event. There is no significant difference \((p<0.05)\) between coaches’ and performers’ scores on this dimension. Follow-up analysis shows that, whilst performers tend to consider successful outcomes more controllable (although not strongly so) than less successful outcomes \((p<0.001)\), which is consistent with Grove et al.’s (1991) findings, no such difference was found for coaches. Event importance appears not to influence coaches’ or performers’ selection of controllable causes.

In a sport such as athletics, and especially through the winter months, weather conditions and the contribution by training partners/opposition (all uncontrollable) are likely to play an important part in training and competition outcomes. It appears that relative successes are seen by performers to be at least partially as a result of effort, personal control and attitude. Resultant affect is, then, more likely to include higher levels of personal satisfaction and confidence in being able to produce positive outcomes in the future.

Coaches and performers tend to see causes as more universal than personal; that is, most performers would produce similar outcomes in such situations. There is no significant difference between coaches’ and performers’ scores on this dimension \((p<0.05)\). Perhaps this again reflects the nature of track and field (especially middle-distance running) training and competition. During the preparation phase in particular, training is fairly standardised and regardless of the specific regime, is affected by similar factors (e.g., weather conditions, amount of effort, training fatigue). Whilst performers’ selection of universal causes appears not to be affected by the outcome or event importance, coaches tend to select more universal explanations when the event is important \((p<0.001)\) and the outcome is relatively successful \((p<0.001)\). These findings are difficult to explain.

There is a tendency for coaches and performers to offer specific (i.e., not global) causes; that is, the causes offered are domain-specific (i.e., rooted in the nature of the training or competition activity). This tendency is greater for performers than
for coaches (p<0.05). For coaches, globality ratings appear unaffected by perceived success although, for performers, there is a tendency for the explanation to be more specific for successful outcomes (p<0.05). With regard to event importance, coaches tend to make more specific attributions for important events than for less important events (p<0.05) whilst, for performers, scores on this scale seem unaffected by event importance.

This may have interesting implications for mental training and life-style management techniques employed by athletes. It would seem as though the causes of sporting outcomes are perceived as lying mainly within the sport itself, rather than factors outside, such as work, family or life-style, factors that presumably do impact on sporting outcomes but are deemed less significant by the coaches and performers.

In order to consider compatibility one has to examine both correlations (the strength of relationships between sets of dimension scores) and differences between sets of scores. Dyads appear generally to produce similar patterns of attributional dimensions (see Figures 20 to 59 in Appendix 6). This may be a reflection of the closeness of these coach-performer relationships or the nature of such relationships in track and field; possibly participants from team sports, where there is less opportunity for one-to-one discussion and where one would expect the emphasis to be on team performance rather than that of individuals, would produce different findings. Future researchers should sample participants from a range of team and individual sports to investigate this phenomenon.

It is possible that successful events, especially important ones, have greater potential for attributional conflict. Considering the composite compatibility scores, level of perceived success seemed not to affect compatibility, contrary to expectation based on Rejeski's model. However, when each dimension compatibility was considered separately, locus of causality compatibility did differ between high success and low success sub-groups (p<0.05), although the actual difference was only 0.37 on a five-point scale; there were no other dimension differences. Specifically, when perceived more successful, compatibility on locus of causality was lower. That is, coaches and performers
had a greater difference of opinion on the internal-external nature of the outcome cause when the outcome was deemed successful, contrary to hypothesis two. This may provide support for Weiner’s (1985) contention that negative outcomes elicit attributional search. It may be that people engage in greater attributional search following an unsuccessful outcome and, therefore, are more likely to reach some common (or compatible) conclusions. It may be that successful outcomes result in less search and therefore greater variety of causal explanation. Coaches may, therefore, need to spend more time with athletes when successful in order to ensure they broadly agree on the reasons for this success.

Similarly, when considering the impact of perceived event importance, there was no difference between relatively important and unimportant event on composite compatibility. However, when the event was deemed relatively important, less compatibility on locus of causality ensued when compared to less important events ($p<0.05$); actual difference of 0.29. There were no other compatibility differences. There is, therefore, limited support for the third hypothesis, although it should be remembered that, in these analyses, data were split on relative importance within the data set: events included in the study were all deemed to be significant.

It appears, therefore, that the locus of causality dimension may be the critical dimension when considering compatibility. It would seem that successful and important events result in less compatibility on locus of causality, but not other compatibility indices. The former may support Weiner’s (1985) contention that negative outcomes elicit attributional search that, in turn, may give rise to more congruent causal inferences on the part of coach and performer. However, one might also expect that important events would also elicit more attributional search and, hence, agreement; this was not supported by the data.

The implications for coach educators are that significant successes need to be discussed and the factors which cause them clearly identified so that they can be maintained in the future, rather than a focus on weaknesses and unsuccessful outcome which coaches and performers may tend towards post-event.
Considering individual dyads, one dyad had all five correlation coefficients greater than 0.3 (the probability of each being $p<0.05$; Table 16). Conversely, one dyad (C5/P51) had three sets of dimension scores which were significantly different ($p<0.05$, Table 17) and 4 of the remaining 7 dyads had one set of dimension scores which were significantly different. It is a weakness of this study that no measure of subjective compatibility between dyadic members was undertaken. It would be interesting to assess the extent to which compatibility in any one dimension contributed to a sense of subjective compatibility.

Whilst no obvious pattern of significant correlations and/or differences between dimension scores exists, it seems that a greater number of significant correlations exists for stability and controllability dimensions. Coaches and performers appear, therefore, to have greater similarity in their perceptions of the likelihood of outcomes re-occurring and the extent to which they feel they have control over them, than for the locus of causality and the extent to which the individual performer or specific circumstances affects the cause-outcome relationship.

Future studies should consider the contribution of both the degree of co-variation in coach-performer dimension scores and the extent of differences between them to attributional compatibility in dyadic relationships. Furthermore, it would be useful in future studies to assess the extent to which participants within a dyad felt congruence of causal attributions; a number of performers and coaches expressed a feeling that their dyadic partner was unlikely to agree with them. The critical question being: does dimension compatibility have a significant impact on the effectiveness of the dyad or the sense of compatibility?

One possible reason for obtaining findings which are contrary to the expected actor-observer differences is provided by Hewstone (1989) who draws on the earlier works of Stephan (1977) and Regan (1978). The former suggests that an observer of someone from an ingroup (Stephan refers to the same cultural group, but this could be extended to a sport group) would have more information of the antecedents of the observed behaviour and is, therefore, more likely to analyse the situation in terms similar to those of the actor. Regan (1978) provides a qualification to this, suggesting that the degree to which the observer likes the
observed person will affect the evaluation of his/her behaviour (i.e., people evaluate others in a way consistent with their view of them). Unfortunately, it is not possible to evaluate the validity of this suggestion with the current data but, again it provides an important consideration for future research.

Taylor and Jaggi (1974) propose another view which may be pertinent in the coach-performer setting (although these authors were referring to ethno-cultural groups rather than sports groups). These authors suggest that the *egotistic* bias, that of making more flattering self-attributions following positive outcomes, may operate at the group level, termed in this case the *ethnocentric* bias. In this way group members may attribute positive outcomes more to the qualities of their fellow group members than to external factors. It is possible that coaches, as part of the close knit sport group, make what are effectively ethnocentric attributions for their performers' outcomes. Furthermore, Taylor et al., (1983) suggest that group-serving patterns of attributing can facilitate cohesion maintenance. Their study, examining ice-hockey players, found that group-serving attributions helped maintain team-spirit and off-ice cohesion despite continual poor performances. This may prove an interesting avenue for future research.

**Methodology**

There are some issues concerning the measurement of attributions that are pertinent to discuss here. This researcher was particularly interested in the attributions made by coaches and performers concerning their everyday sporting outcomes. Of concern was the degree to which potentially conflicting attributions in the coach-performer dyad would affect its working relationship. However, for this issue to be suitably addressed, one needs to collect and assess the naturally occurring statements coaches and performers make during their interactions. However, as Biddle and Hanrahan (1998) point out when discussing this topic, the methods, such as those used here, prompt the respondent to make attributions when, in natural circumstances, they may not (or make different types of attributional statement). Future research needs to utilise methods that capture the natural discourse within natural sporting situations and coach-performer encounters. This has, to date, not been attempted within sport and exercise psychology.
In everyday settings, where events result in attributional search, attributors may call upon a number of elements to explain an outcome. However, in forced response designs, Weiner (1979) suggests that, not wishing to repeat themselves, subjects may offer attributions which are farther and farther from the basic causal beliefs they hold. It is for this reason that many previous studies have only considered the first attribution offered.

This study attempted to consider, although not give differential weights to, the varied attributional elements offered by respondents rather than adopt a one outcome-one cause approach. The methods used allowed any number of causes to be considered although, generally, 2 or 3 were offered. This approach may offer certain advantages. For example, Tenenbaum and Furst (1986) found that the pattern of causal dimension differences between winners and losers changed when one considered the second and third causal explanations, especially on locus of causality and control dimensions. Losers started out giving external reasons but by the third cause had begun to give internal reasons (i.e., the egocentric bias was not found beyond the first attribution). Interestingly, when coaches’ perceptions of performance level were used rather than win-loss, similar results were obtained. These authors conclude that researchers need to consider more than the first attribution; the methods used here present one way this can be achieved. Future researchers may, however, wish to consider giving greater weighting to the first causal attribution, which may be the most salient (Tenenbaum & Furst, 1986).

However, it is recognised that by collapsing scores for causal elements (where there is more than one cause offered) into one composite dimension score per causal statement, some data are lost. The effect of this is that, whilst all causal elements are incorporated and not just the first cause to be offered, no relative weighting is attached to any element. Future research may need to consider how multiple causes offered for outcomes vary in terms of their dimensional qualities and whether these need treating discretely.
Harvey (1987) notes that there is great difficulty in coding complex attributions because the multiple causes and dimensions require sophisticated measurement and coding devices. Newman (1981) also comments that the situational-dispositional distinction so central to actor-observer differences research was derived from situations where the observer did not have an ongoing relationship with the actor. Clearly, in the coach-performer situation, this is not the case. These authors and others (e.g., Fincham, 1985) go on to distinguish between individual, interpersonal and interactive attributions which relate to the degree of interaction between dyadic members. Future researchers may need to consider the validity of using such distinctions in close dyadic relationships. Indeed, Bradbury and Fincham (1989) suggest a more complete taxonomy of attributions, including interpersonal and relationship attributions.

The current method did allow perceived success to be rated on a five-point scale rather than an objective win-loss dichotomy. Due to a median split being used to distinguish successful and less successful groups, even the less successful group was not unsuccessful; inclusion merely indicated a success score other than ‘1’ (total success). Therefore, the current findings may offer some support for those of Milech and Nesdale (1984) who found in their study that attributions are discriminatory at the 70-90% success level, although little can be concluded at lower success levels.

Summary
In Study 2, eight pairs of coaches and their performers used attributional logbooks to record their personal (multiple) attributions soon after a significant sporting outcome involving the performer.

Unlike most previous studies (the exception being Brawley, 1984) the attributions of both coaches and performers were collated; subsequent analyses incorporated all attributions made, not merely the first to be stated.

11 The context of Harvey's comments was explicitly attributions in close interpersonal relationships.
Whilst there do appear to be some significant differences in dimension scores at the group level, notably locus of causality and globality, a range of significant dimension differences and correlations are apparent at the level of the individual dyad. Locus of causality appears to be the dimension most likely to vary across a range of circumstances and is the most common coach-performer difference. These findings suggest the importance of studying compatibility at the level of the individual dyad.

In conclusion, this approach has the advantage of allowing any number of causal attributions to be coded and their dimension ratings combined. This, in turn, allows coaches' and performers' responses to be given a numerical value and so be statistically compared. Little research has attempted to explore the coach-performer relationship from an attribution theory standpoint.

Coach-performer attributional compatibility appears an area of sport psychology research still relatively unexplored. The actor-observer paradigm may prove a useful starting point. However, these preliminary findings suggest success may mediate the actor-observer difference which may need to be re-considered for close, interacting relationships and where the observer is active in the event process.

Despite the advantages of the preceding approach over many questionnaire-based designs, ecological validity remains compromised by the reliance on a forced written response procedure. Adopting a natural discourse analysis approach would allow the naturally occurring conversation between coach and performer to be analysed for its attributional content. A variety of discourse analysis procedures (e.g., Antaki & Naji, 1987) have allowed natural conversation to be content analysed and specific software (such as The Leeds Attributional Coding System) enables causal attributions within such conversations to be assessed. Chapter 5 will utilise the Leeds Attributional Coding System to collate and code interview material concerning the events contained in Chapter 4. This has the advantage of allowing participants to use their own spoken language to offer causal statements as and when they feel appropriate.
Chapter 5. Study III: Coach-performer Compatibility:

Interview Data

Introduction

The results of Chapter 4 are informative in that they are based upon multiple attributions made soon after a shared significant sporting outcome involving performers. The attributions of both coaches and performers were collated and analyses incorporated all made attributions, not merely the first to be stated. Since the outcomes were real events spread over a competitive season it is possible to contrast coaches’ and performers’ patterns of attributions over time.

However, because data were in written format, collected using a questionnaire, the criticisms made by Stratton et al. (1986) concerning the need to utilise natural discourse are still relevant. To explore the degree to which coaches and performers make similar attributions when completing a written questionnaire immediately after an event to during interviews some time later was considered important. It is argued that the processes by which attributorial divergence may lead to conflict are mediated by coach-performer discourse. That is, how attributions are articulated through discussion has greater ecological validity (see Blass & Kaplowitz, 1990) than through responses to questionnaires.

It is, therefore, necessary to employ a method of data collection that draws upon discourse. Ideally, this would be undertaken in the natural settings of the training and competition environments. However, such an approach has associated with it a number of significant considerations. For example:

- the process of data collection may distort the natural articulation of attributions, and may, indeed, affect the coaching process
- technologically, it is difficult to record naturally occurring attributions in the competition and training environment
- attributions made to a dyadic partner in situ will represent limited reflection and, therefore, may offer data different from when reflection has occurred (an interesting avenue for future research).
Purpose of the study

It was, therefore, decided to utilise an interview approach that would elicit attributions made verbally by respondents following a period of potential reflection. Using such an approach, it was hoped that the intensity of causal beliefs, assessed by the number of times a cause was offered, as well as the dimensional attributes of causal explanations, could be considered. The Leeds Attributional Coding System (LACS) allows qualitative interview data to be quantified, thereby allowing the previously reported questionnaire and current interview data to be contrasted.

Based on the results from the analysis of questionnaire data and findings from previous studies (e.g., Fletcher et al., 1986), it was hypothesised that:

- actor-observer differences will exist, although these may be diminished by the long-standing nature of coach-performer relationships and the time delay between events and interviews
- there will be attributional divergence between coaches and performers, the nature of which may differ from log data
- self-serving and potentially other-serving biases will exist in the attributions made by coaches and performers
- coaches will offer more complex (i.e., a greater range of) attributions because of their ability both to empathise with performers and perceive the events from an external perspective.

Methods

Participants

Those coaches and performers detailed in Chapter 4 (see Table 7 for details) also completed the post-event interviews. Participants had been asked previously if they would agree to interviews being recorded and transcribed; all had given their consent. Confidentiality of interview material was assured.

Procedures

In addition to the procedures identified in Chapter 4, coaches and performers were individually interviewed once every 3-4 weeks (depending on availability
and prior arrangement). Interviews were conducted at the participants’ normal training venue. During these interviews participants’ log sheets were used by the researcher to initiate discussion concerning the significant outcomes jointly selected by each dyad for the proceeding 3-4 week period. The log sheets were not, however, shown to the participant prior to or during the interview. Interviews typically lasted 20-25 minutes depending on the length of responses given by the participant. Taped interviews were then transcribed and coded using the LACS.

The interviews

The interviews began with the researcher reminding the participant of the selected sessions and competitions. In chronological order each session/competition was then discussed in the following manner.

• The researcher asked the participant to describe the event (this provided contextual information and ensured that the event being recalled was the same as the one recorded on the log sheet).

• The participant was then asked to describe how the event progressed in relation to goal attainment and to discuss what the participant perceived to be the causes of the level of attainment achieved.

• The participant was allowed to respond freely with the researcher only asking for clarification where required.

Interviews were taped using a small desktop tape-recorder placed unobtrusively on a nearby table or chair.

Coding and analyses: the LACS

Sympathetic to a constructivist paradigm, this research attempted to provide “meaningful descriptions” (Stratton, 1997, p.117) of what coaches and performers say during interviews, believing that this process provides a window onto the meaning structures held by these participants. Consistent with the requirements of Grounded Theory, it is necessary to provide detail of the methods used to elicit the material from which meanings are concluded (Stratton, 1997). The following provides such detail.

1 However, due to athlete injury/illness and coach commitments, a number of interviews were missed during the course of the season.
The LACS is utilised by undertaking the following steps:

- Attributions are extracted from the transcripts.
- For each attributional statement, the cause and outcome elements of the attribution are identified.
- For each statement, the speaker, agent and target are identified.
- Attributions are coded on each of the causal dimensions.
- Each statement is content coded, including in this study coding for emotional content.
- Numerical data are input for analysis.

(Munton et al., 1999).

The raw interview transcripts were coded using the LACS. The LACS has been comprehensively validated and tested in a range of clinical and social psychological settings (see Munton et al., 1999), drawing on the latest advances in discourse and content analyses. It allows researchers to move beyond description of the content of interviews to the core values and beliefs underpinning it (Stratton, 1997).

Within the family therapy setting in which Stratton and colleagues worked these researchers had discovered that many of the dysfunctional reactions exhibited by family members were a result of beliefs they held about each other and the causes of their behaviour. Critiquing the methods previously used by Peterson et al. (1982) for being focussed solely on negative events, having no measure of controllability and a limited definition of the internal-external dimension, Stratton et al. (1986) report the development of the LACS for analysing attributions, making a number of important distinctions hitherto unmade.

These authors note that, when considering causal dimensions, most can be applied to any of the following within the causal statement: the cause of the event, the outcome in the event or the link between them. This distinction was considered by Stratton et al. (1986) to be essential if coding was to be reliable. Within the family therapy setting of interest to Stratton and co-workers, these authors considered each of the dimensions listed below and decided to which
aspects of the causal chain (cause, link, outcome) they most appropriately applied (for a detailed discussion, see Munton et al., 1999).

**Locus of control** – code in relation to the cause, with separate coding for speaker, agent and target.

**Stability** – code in relation to the cause.

**Controllability** – need to consider all three elements (C-L-O), with separate coding for speaker, agent and target.

**Globality** – code in relation to the cause.

**Universality** – need to consider all three elements (C-L-O), with separate coding for speaker, agent and target.

For definitions of these dimensions see Chapter 4, pp.83-84.

A LACS coding template for recording the interview data is provided in Appendix 7.

In relation to the log data, it should be remembered that for the locus of causality and universality dimensions, coding is in relation to the athlete, and that for controllability, coding is in relation to the attributor.

It should be noted that stability, globality and locus of causality were drawn from Peterson's (1982) Attribution Styles Questionnaire and controllability and universality were added because of perceived weaknesses inherent in the three dimension approach (Stratton, 1997).

Stratton and colleagues report the use of the LACS in a range of clinical, market research and business settings (see Munton et al., 1999, for details). For example, Stratton (1991) reports the use of the LACS in discovering the consumer needs of passengers on long-haul flights and the beliefs that lay behind the poor evaluation of a television commercial.

Stratton et al. suggest three important criteria for assessing the value of this approach: reliability, generating sufficient data and validity. Measures of reliability of coding each dimension are provided by Stratton et al. (1986, see
In these initial studies Stratton and colleagues found that attributions for negative outcomes tended to be more global (p<0.01), personal (p<0.05) and uncontrollable (p<0.001) than for positive outcomes. For speakers, correlations between dimensions are also provided. Global causes tend to be stable; stable and global causes tend to be less controllable; personal causes tend to internal, although this relationship was much weaker for targets. Stratton et al. (1986) also report a degree of construct and face validity.

Whilst the propensity to produce attributional statements clearly depends on the setting, in the family therapy setting Stratton et al. (1986) report analyses yielding an average of 44 statements per 45-minute session, whilst Munton et al. (1999) report 40-100 attributional statements in 30-minute selection interviews. This, Stratton et al. suggest, means that one such session may be sufficient to uncover individuals' causal beliefs.

Each causal statement within the transcript was identified and extracted along with any contextual information that may have assisted coding. Based on preliminary analyses of the first round of interviews, a speaker, agent, target (SAT) numerical index was developed. The speaker, agent and target within all extracted statements were then coded according to this index. Table 18 shows the SAT index.

<table>
<thead>
<tr>
<th>Numerical code</th>
<th>Speaker, agent, target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coach</td>
</tr>
<tr>
<td>2</td>
<td>Athlete</td>
</tr>
<tr>
<td>3</td>
<td>Other athletes</td>
</tr>
<tr>
<td>4</td>
<td>Conditions (incl. weather, event circumstances)</td>
</tr>
<tr>
<td>5</td>
<td>Athlete's (training or competition) performance</td>
</tr>
<tr>
<td>6</td>
<td>Other people (not athletes, e.g., family)</td>
</tr>
<tr>
<td>7</td>
<td>Training programme</td>
</tr>
<tr>
<td>8</td>
<td>Outcome (i.e. finishing position)</td>
</tr>
<tr>
<td>9</td>
<td>Default</td>
</tr>
</tbody>
</table>

The LACS allows causal statements to be coded even when the outcome, link and cause are spatially separated within natural discourse.
Each statement was coded for content using a content code also developed from the first set of interviews. The content codes are defined here and summarised in Table 19.

**Outcome (saliency):** if the attributional statement contains an overt reference to a positive or negative outcome it is coded either ‘positive’ ('1') or ‘negative’ ('2'); otherwise, it is coded ‘neutral’ ('9').

**Nature of event:** a statement is coded ‘specific’ ('1') if the outcome refers to a particular, single event; if the statement refers to events generally, or to a general set of conditions, it is coded ‘general’ ('2').

**Inclusion of dyadic partner:** if the dyadic partner (coach or performer) is referred to anywhere in the statement it is coded ‘yes’ (1); otherwise, it is coded ‘no’ (2).

**Emotional content:** if the statement contains a positive or negative emotion anywhere in the attribution it is coded ‘positive’ ('1') or ‘negative’ ('2'); if the statement contains no emotional element it is coded ‘no emotion’ ('9').

**Time of season:** this refers to the time at which the statement was made: between October and end April coded ‘pre-competitive’ ('1'); between start May and end June coded ‘early competitive’ ('2'); between start July and September coded ‘competitive’ ('9').

<table>
<thead>
<tr>
<th>Label</th>
<th>Coded ‘1’</th>
<th>Coded ‘2’</th>
<th>Coded ‘9’</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td></td>
<td></td>
<td>Neutral</td>
</tr>
<tr>
<td>Negative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nature of event</strong></td>
<td></td>
<td></td>
<td>Default</td>
</tr>
<tr>
<td>Specific event related</td>
<td></td>
<td>Non-event related (general)</td>
<td></td>
</tr>
<tr>
<td><strong>Inclusion of dyadic partner</strong></td>
<td>Yes</td>
<td>No</td>
<td>Default</td>
</tr>
<tr>
<td><strong>Emotional content</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td></td>
<td>Negative</td>
<td>No emotion</td>
</tr>
<tr>
<td>Negative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Time of season</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-competitive</td>
<td></td>
<td>Early competitive</td>
<td>Competitive</td>
</tr>
</tbody>
</table>

All causal statements were then coded on each of the five dimensions previously detailed. The first set of transcripts was coded jointly by both the primary researcher and a research colleague previously trained in the use of the LACS. The purpose of this was to improve coder reliability\(^2\). Where differences in dimension coding existed, statements were discussed and agreement reached.

\(^2\) However, it should be noted that no statistical measure of inter-coder reliability was used.
This assisted the author in becoming more consistent in the coding of subsequent transcripts. All numerical data were then entered into a statistics package (SPSS version 10.0 for windows) for analyses.

Results
In the following section analyses of both questionnaire and interview data will be used to determine whether the attributions made by coaches and performers do, indeed, offer the potential for conflict.

Specifically, and in accordance with Rejeski's (1979) model, it is hypothesised that:
1. there will be coach-performer differences in the selection of causal agents and targets due to the divergent perspectives theory
2. there will exist actor (athlete)-observer (coach) differences in the dimensional qualities of attributions made; this phenomenon will be evident at both the group and individual dyad level
3. actor-observer differences will be more pronounced for negative outcomes.
4. self-serving (performers) and other-serving (coaches) biases will exist in the attributions made by coaches and performers
5. the time-from-event effect (e.g., Burger, 1986) on attributions will result in a difference in the pattern of attributions made by coaches and performers between the log and interview data such that attributions become more dispositional over time, especially for the athletes.

Results will be presented for the interview data and, where appropriate, will be contrasted with corresponding log data results. Data are first presented for coaches and performers as groups, followed by data for individual dyads.

Descriptive data: coach and performer groups
A total of 1562 attributions were made during the interviews. Tables 66-71 (Appendix 8) provide descriptive statistics for these attributions.
Agents and targets

**Hypothesis 1:** There will be coach-performer differences in the selection of causal agents and targets due to the divergent perspectives theory.

Table 20 shows the agents and targets utilised by coaches and performers.

<table>
<thead>
<tr>
<th>SATs</th>
<th>Coaches' agents (%)</th>
<th>Coaches' targets (%)</th>
<th>Performers' agents (%)</th>
<th>Performers' targets (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach</td>
<td>10.8</td>
<td>22.2</td>
<td>1.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Athlete</td>
<td>56.7</td>
<td>55.6</td>
<td>54.7</td>
<td>64.6</td>
</tr>
<tr>
<td>Other athletes</td>
<td>7.7</td>
<td>3.2</td>
<td>4.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Conditions (e.g., weather, event)</td>
<td>9.8</td>
<td>1.0</td>
<td>14.7</td>
<td>1.9</td>
</tr>
<tr>
<td>Athlete's performance</td>
<td>2.3</td>
<td>12.4</td>
<td>9.1</td>
<td>26.2</td>
</tr>
<tr>
<td>Other people</td>
<td>0.7</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Training programme</td>
<td>6.6</td>
<td>4.0</td>
<td>10.2</td>
<td>3.0</td>
</tr>
<tr>
<td>Outcomes (i.e., finishing position)</td>
<td>0.7</td>
<td>0.4</td>
<td>1.0</td>
<td>0.6</td>
</tr>
<tr>
<td>Default</td>
<td>4.6</td>
<td>1.2</td>
<td>3.6</td>
<td>1.0</td>
</tr>
</tbody>
</table>

From Table 20 it can be seen that, in regard to agents, both coaches and performers identify the 'athlete' as the agent in approximately 55% of the attributions but that coaches identify themselves, 'coaches', as agents far more than do performers. Coaches and performers identify 'conditions' (which may refer to the weather or event conditions), and performers identify the 'training programme' as other significant agents.

Regarding targets, both coaches and performers identify the 'athlete' as the major target (in cô60% of all attributions). Coaches identify themselves, 'coaches', as targets far more than do performers. Furthermore, performers are more likely than are coaches to identify the performer's own performance, 'athlete's performance', as a target.
Individual dyads

For the purpose of displaying the individual dyads' results the same codes as used in Chapter 4 apply, namely:

- Coach C1.0 coaches Performer P11
- Coach C1.1 coaches Performer P12
- Coach C2.0 coaches Performer P21
- Coach C3.0 coaches Performer P31
- Coach C3.1 coaches Performer P32
- Coach C4.0 coaches Performer P41
- Coach C4.1 coaches Performer P42
- Coach C5.0 coaches Performer P51

Descriptive data for each of the dyads are presented in Appendix 9.

Agents and targets. Tables 21-28 show the agents and targets employed in the attributions made by each dyad.

<table>
<thead>
<tr>
<th>SAT codes</th>
<th>C1.0 Agent (%)</th>
<th>P11 Agent (%)</th>
<th>C1.0 Target (%)</th>
<th>P11 Target (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach</td>
<td>16.2</td>
<td>2.7</td>
<td>28.9</td>
<td>3.2</td>
</tr>
<tr>
<td>Athlete</td>
<td>65.3</td>
<td>57.0</td>
<td>60.1</td>
<td>61.1</td>
</tr>
<tr>
<td>Other athletes</td>
<td>2.3</td>
<td>0.9</td>
<td>1.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Conditions</td>
<td>6.9</td>
<td>13.1</td>
<td>1.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Athlete's performance</td>
<td>1.7</td>
<td>14.0</td>
<td>4.0</td>
<td>27.6</td>
</tr>
<tr>
<td>Other people</td>
<td>2.9</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Training programme</td>
<td>2.3</td>
<td>5.4</td>
<td>1.7</td>
<td>3.2</td>
</tr>
<tr>
<td>Outcome</td>
<td>0.6</td>
<td>0.9</td>
<td>0.0</td>
<td>1.8</td>
</tr>
<tr>
<td>Default</td>
<td>1.2</td>
<td>5.9</td>
<td>2.9</td>
<td>1.8</td>
</tr>
</tbody>
</table>

As for the group data, the 'athlete' is the primary agent and target for both coach and performer. Coach 1 appears to refer to herself as a major agent and target (more so than the coach group mean score).
Table 22: Coach 1.1/Performer 12.

<table>
<thead>
<tr>
<th>SAT codes</th>
<th>C1.1 Agent (%)</th>
<th>P12 Agent (%)</th>
<th>C1.1 Target (%)</th>
<th>P12 Target (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach</td>
<td>8.1</td>
<td>5.6</td>
<td>26.7</td>
<td>1.1</td>
</tr>
<tr>
<td>Athlete</td>
<td>75.6</td>
<td>60.7</td>
<td>61.6</td>
<td>59.6</td>
</tr>
<tr>
<td>Other athletes</td>
<td>3.5</td>
<td>7.9</td>
<td>0.0</td>
<td>2.2</td>
</tr>
<tr>
<td>Conditions</td>
<td>1.2</td>
<td>7.9</td>
<td>0.0</td>
<td>2.2</td>
</tr>
<tr>
<td>Athlete's</td>
<td>1.2</td>
<td>4.5</td>
<td>7.0</td>
<td>34.8</td>
</tr>
<tr>
<td>performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other people</td>
<td>1.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Training</td>
<td>8.1</td>
<td>10.1</td>
<td>2.3</td>
<td>0.0</td>
</tr>
<tr>
<td>programme</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Default</td>
<td>1.2</td>
<td>3.4</td>
<td>2.3</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Table 22 provides very similar scores to those of Coach1/Performer 11 (Table 21).

Table 23: Coach 2/Performer 21.

<table>
<thead>
<tr>
<th>SAT codes</th>
<th>C2 Agent (%)</th>
<th>P21 Agent (%)</th>
<th>C2 Target (%)</th>
<th>P21 Target (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach</td>
<td>8.7</td>
<td>9.0</td>
<td>19.7</td>
<td>14.9</td>
</tr>
<tr>
<td>Athlete</td>
<td>48.0</td>
<td>76.1</td>
<td>48.0</td>
<td>58.2</td>
</tr>
<tr>
<td>Other athletes</td>
<td>8.7</td>
<td>0.0</td>
<td>4.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Conditions</td>
<td>4.7</td>
<td>4.5</td>
<td>0.0</td>
<td>4.5</td>
</tr>
<tr>
<td>Athlete's</td>
<td>1.6</td>
<td>1.5</td>
<td>16.5</td>
<td>17.9</td>
</tr>
<tr>
<td>performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other people</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Training</td>
<td>15.7</td>
<td>6.0</td>
<td>10.2</td>
<td>4.5</td>
</tr>
<tr>
<td>programme</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Default</td>
<td>12.6</td>
<td>3.0</td>
<td>0.8</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Coach 2 and Performer 21 appear to utilise a wider range of agents and targets than other coaches and performers.
Coach-performer Compatibility: Interview Data

Table 24: Coach 3/Performer 31.

<table>
<thead>
<tr>
<th>SAT codes</th>
<th>C3.0 Agent (%)</th>
<th>P31 Agent (%)</th>
<th>C3.0 Target (%)</th>
<th>P31 Target (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach</td>
<td>3.1</td>
<td>0.0</td>
<td>9.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Athlete</td>
<td>57.7</td>
<td>36.2</td>
<td>61.3</td>
<td>68.1</td>
</tr>
<tr>
<td>Other athletes</td>
<td>16.0</td>
<td>11.2</td>
<td>8.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Conditions</td>
<td>11.7</td>
<td>16.4</td>
<td>1.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Athlete’s performance</td>
<td>1.2</td>
<td>4.3</td>
<td>17.8</td>
<td>25.9</td>
</tr>
<tr>
<td>Other people</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Training programme</td>
<td>5.5</td>
<td>25.0</td>
<td>0.6</td>
<td>5.2</td>
</tr>
<tr>
<td>Outcome</td>
<td>0.0</td>
<td>1.7</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Default</td>
<td>4.9</td>
<td>5.2</td>
<td>0.6</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Performer 31 utilises himself as agent much less than other performers and less than Coach 3, placing a heavier emphasis on the training programme. Coach 3 considers himself as agent much less than other coaches.

Table 25: Coach 3.1/Performer 32.

<table>
<thead>
<tr>
<th>SAT codes</th>
<th>C3.1 Agent (%)</th>
<th>P32 Agent (%)</th>
<th>C3.1 Target (%)</th>
<th>P32 Target (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach</td>
<td>2.9</td>
<td>0.0</td>
<td>2.9</td>
<td>3.4</td>
</tr>
<tr>
<td>Athlete</td>
<td>65.7</td>
<td>59.3</td>
<td>77.1</td>
<td>59.3</td>
</tr>
<tr>
<td>Other athletes</td>
<td>2.9</td>
<td>6.8</td>
<td>2.9</td>
<td>0.0</td>
</tr>
<tr>
<td>Conditions</td>
<td>0.0</td>
<td>6.8</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Athlete’s performance</td>
<td>11.4</td>
<td>8.5</td>
<td>11.4</td>
<td>27.1</td>
</tr>
<tr>
<td>Other people</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Training programme</td>
<td>5.7</td>
<td>16.9</td>
<td>2.9</td>
<td>5.1</td>
</tr>
<tr>
<td>Outcome</td>
<td>8.6</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Default</td>
<td>2.9</td>
<td>1.7</td>
<td>2.9</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Performer 32 makes more use of himself as agent than Performer 31 and, in so doing, has a similar pattern of agents to Coach 3. Like Performer 31, Performer 32 identifies the training programme as a significant agent. As for Coach 3/Performer 31, the coach is much less the agent and target than for other dyads.
Table 26: Coach 4/Performer 41.

<table>
<thead>
<tr>
<th>SAT codes</th>
<th>C4.0 Agent (%)</th>
<th>P41 Agent (%)</th>
<th>C4.0 Target (%)</th>
<th>P41 Target (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach</td>
<td>9.3</td>
<td>7.5</td>
<td>27.9</td>
<td>10.0</td>
</tr>
<tr>
<td>Athlete</td>
<td>53.5</td>
<td>55.0</td>
<td>53.5</td>
<td>50.0</td>
</tr>
<tr>
<td>Other athletes</td>
<td>11.6</td>
<td>2.5</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Conditions</td>
<td>9.3</td>
<td>10.0</td>
<td>2.3</td>
<td>2.5</td>
</tr>
<tr>
<td>Athlete’s performance</td>
<td>4.7</td>
<td>15.0</td>
<td>7.0</td>
<td>35.0</td>
</tr>
<tr>
<td>Other people</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Training programme</td>
<td>4.7</td>
<td>7.5</td>
<td>4.7</td>
<td>2.5</td>
</tr>
<tr>
<td>Outcome</td>
<td>0.0</td>
<td>2.5</td>
<td>4.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Default</td>
<td>7.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

The ‘athlete’ is seen as agent and target equally by coach and performer. However, Coach 4 makes over a quarter of attributions with himself as target. The ‘athlete’s performance’ is a major target for Performer 41.

Table 27: Coach 4.1/Performer 42.

<table>
<thead>
<tr>
<th>SAT codes</th>
<th>C4.1 Agent (%)</th>
<th>P42 Agent (%)</th>
<th>C4.1 Target (%)</th>
<th>P42 Target (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach</td>
<td>25.0</td>
<td>0.0</td>
<td>31.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Athlete</td>
<td>50.0</td>
<td>49.3</td>
<td>57.8</td>
<td>65.7</td>
</tr>
<tr>
<td>Other athletes</td>
<td>9.4</td>
<td>9.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Conditions</td>
<td>4.7</td>
<td>25.4</td>
<td>0.0</td>
<td>9.0</td>
</tr>
<tr>
<td>Athlete’s performance</td>
<td>4.7</td>
<td>11.9</td>
<td>6.3</td>
<td>22.4</td>
</tr>
<tr>
<td>Other people</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Training programme</td>
<td>3.1</td>
<td>3.0</td>
<td>3.1</td>
<td>3.0</td>
</tr>
<tr>
<td>Outcome</td>
<td>3.1</td>
<td>1.5</td>
<td>1.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Default</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Coach 4 makes a large number of attributions with himself as agent and/or target, whereas Performer 42 makes no attributions with the coach as agent or target.
Coach-performer Compatibility: Interview Data

Table 28: Coach 5/Performer 51.

<table>
<thead>
<tr>
<th>SAT codes</th>
<th>C5 Agent (%)</th>
<th>P51 Agent (%)</th>
<th>C5 Target (%)</th>
<th>P51 Target (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach</td>
<td>8.2</td>
<td>1.2</td>
<td>25.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Athlete</td>
<td>41.8</td>
<td>49.4</td>
<td>40.9</td>
<td>76.2</td>
</tr>
<tr>
<td>Other athletes</td>
<td>5.5</td>
<td>2.4</td>
<td>2.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Conditions</td>
<td>30.9</td>
<td>27.7</td>
<td>1.8</td>
<td>1.2</td>
</tr>
<tr>
<td>Athlete's performance</td>
<td>1.8</td>
<td>10.8</td>
<td>21.8</td>
<td>22.6</td>
</tr>
<tr>
<td>Other people</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Training programme</td>
<td>6.4</td>
<td>6.0</td>
<td>7.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Outcome</td>
<td>0.0</td>
<td>2.4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Default</td>
<td>5.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

The ‘athlete’ is employed less by Coach 5 and Performer 51 as agent than other participants although Performer 51 employs the athlete as target more than does Coach 5. ‘Conditions’ feature largely as agent in attributions made by Coach 5 and Performer 51.

Therefore, whilst the athlete is still the primary agent and target for all individual dyads, dyads do differ in the degree to which they employ other agents and targets. This will, in turn, affect the scores on subsequent attributional dimensions.

Coach-performer differences in dimension scores

The following section is divided by dimension. Graphs (Figures: 4, 6, 8, 10, 11, 12, 14, 15, 16, 18, 19) show the percentages on each dimension score for coaches and performers for positive, neutral and negative outcomes in interviews. Beneath these are further graphs from the log data for the same dimension (Figures: 5, 7, 9, 13, 17), showing the percentage of coaches’ or performers’ dimension scores for each of the composite scores shown for successful (scored ‘1’ on the success scale) and less successful (scored 2-5 on the success scale) outcomes. It will be recalled that, for the log data presented in Chapter 4, dimension scores represent composite scores for a causal statement (which may have several elements, each of which may be scored positively or negatively on each dimension) and, therefore, log scores range in practice from minus 4 to plus 4, including zero which represents a composite score of neither polarity.
In addition, Tables 29, 31, 33, 35, 36, 37, 39, 40, 41, 43, & 44 report the percentages of attributions made by each dyadic member on each dimension across each outcome category, as reported in the interviews. Highlighted are those pairs of scores for positive or negative outcomes where there is >20%\(^3\) difference in frequency scores. Neutral outcome scores are not highlighted since these outcomes are less likely to be of significance to compatibility within the coach-performer relationship.

These are accompanied by Tables 30, 32, 34, 38, & 42 which show, for contrast, the percentage scores on each dimension made by dyadic members in the log sheets. These are not presented by outcome category because of the relatively small number of attributions made in log sheets by individuals for negative outcomes.

Where interview data are coded in relation to agents and targets, only dimension scores in relation to speakers are contrasted with log data, since attributions made in the log are generally coded only in relation to the attribution maker (i.e., the speaker), the exceptions being the locus of causality and universality dimensions (coded in relation to the performer).

These analyses allow the following hypotheses to be tested.

**Hypothesis 2:** There will exist actor (athlete)-observer (coach) differences in the dimensional qualities of attributions made. This phenomenon may be apparent at both the group and individual dyad level.

**Hypothesis 3:** Actor observer differences will be more pronounced for negative outcomes.

**Hypothesis 4:** Self-serving (performers) and other-serving (coaches) biases will exist in the attributions made by coaches and performers.

**Hypothesis 5:** The time-from-event effect on attributions will result in a difference in the pattern of attributions made by coaches and performers between the log and interview data, such that attributions become more dispositional over time (from log to interview data) for the athletes but not the coaches.

\(^3\) Since it is inevitable that some differences in dimension scores will exist, a difference of 20% or more was selected as a notable difference worthy of further comment.
For consistency and ease of viewing, coaches’ scores are represented by blue graphs and performers’ scores by red.

**Stability (group)**

**Figure 4:** Coach and performer groups’ stability scores by outcome (interviews).

![Coach and performer groups’ stability scores by outcome (interviews).](image)

**Figure 5:** Coach (blue) and performer (red) groups’ stability scores by outcome (logs). Positive numbers = stable; negative numbers = unstable.

![Coach and performer groups’ stability scores by outcome (logs).](image)
It can be seen from Figure 4 that both coach and performer groups have similar patterns of attributions made in interviews across outcome categories. Coaches and performers tend to offer more stable causes for both positive and neutral outcomes but more unstable causes for negative outcomes.

Patterns for the stability dimension from the log data of coaches and performers, shown in Figure 5, are similar to those of the interview data in that there is a relative skewing toward stable causes for positive outcomes and toward unstable causes for negative outcomes for both groups.

**Stability (individual dyads)**

Table 29: Individual dyads' stability scores (percentages) by outcome (interviews).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Stability Positive</th>
<th>Stability Neutral</th>
<th>Stability Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stable</td>
<td>Unstab.</td>
<td>Stable</td>
</tr>
<tr>
<td>C1/P11</td>
<td>75.0/57.3</td>
<td>25.0/42.7</td>
<td>56.7/68.9</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>77.5/75.7</td>
<td>22.5/24.3</td>
<td>79.3/43.2</td>
</tr>
<tr>
<td>C2/P21</td>
<td>56.5/66.7</td>
<td>43.5/33.3</td>
<td>80.9/81.3</td>
</tr>
<tr>
<td>C3/P31</td>
<td>54.4/80.3</td>
<td>45.6/19.7</td>
<td>51.4/50.0</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>45.5/80.0</td>
<td>54.5/20.0</td>
<td>100/70.0</td>
</tr>
<tr>
<td>C4/P41</td>
<td>38.5/75.0</td>
<td>61.5/25.0</td>
<td>43.8/72.7</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>35.7/53.3</td>
<td>64.3/46.7</td>
<td>33.3/37.5</td>
</tr>
<tr>
<td>C5/P51</td>
<td>78.4/58.1</td>
<td>21.6/41.9</td>
<td>66.7/36.8</td>
</tr>
</tbody>
</table>

For positive and negative outcomes similarities in group means (see Figure 4) for stability scores mask large individual dyadic differences. Four dyads have stability dimension score differences for positive outcomes of more than 20%. Five dyads have stability dimension score differences for negative outcomes of greater than 20%. With regard to dyadic members' scores there does not appear to be any particular pattern, with neither coaches nor performers being consistently more or less stable.
Table 30: Individual dyads’ stability scores (percentages) (logs).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Stable</th>
<th>Unstable</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1/P11</td>
<td>56.0/57.8</td>
<td>32.0/39.1</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>72.3/73.1</td>
<td>27.8/26.9</td>
</tr>
<tr>
<td>C2/P21</td>
<td>50.5/26.9</td>
<td>33.3/50.0</td>
</tr>
<tr>
<td>C3/P31</td>
<td>44.8/45.8</td>
<td>41.4/34.5</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>55.0/72.5</td>
<td>25.0/17.5</td>
</tr>
<tr>
<td>C4/P41</td>
<td>23.8/9.5</td>
<td>66.7/76.2</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>40.7/10.3</td>
<td>55.6/75.9</td>
</tr>
<tr>
<td>C5/P51</td>
<td>19.6/17.3</td>
<td>64.7/73.1</td>
</tr>
</tbody>
</table>

Contrasting with the log data a number of interesting points emerge. Whilst C2/P21 differ markedly on their log data results there appears little difference in stability scores for attributions offered in interviews. For other dyads, notably C1.1/P12, C3/P31, C3.1/P32, C4/P41 and C5/P51, differences evident in interview data are less pronounced in the log data. However, for C4.1/P42 the differences in scores between dyadic members appear consistent between data sets.

**Globality (group)**

**Figure 6**: Coach and performer groups’ globality scores by outcome (interviews).
Figure 7: Coach (blue) and performer (red) groups’ globality scores by outcome (logs). Positive numbers = global; negative numbers = specific.

With regard to the globality of interview attributions (Figure 6), a broadly similar pattern appears for coach and performer groups for all outcomes; more causes are specific than are global.

Likewise, for the log data (Figure 7), the majority of coaches’ and performers’ composite scores are specific, with a similar pattern emerging for both groups across positive and negative outcomes.
### Globality (individual dyads)

**Table 31**: Individual dyads’ globality scores (percentages) by outcome (interviews).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Global</th>
<th>Specific</th>
<th>Global</th>
<th>Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1/P11</td>
<td>31.7/34.1</td>
<td>68.3/65.9</td>
<td>30.0/32.8</td>
<td>70.0/67.2</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>70.0/21.6</td>
<td>30.0/78.4</td>
<td>62.9/18.9</td>
<td>37.9/81.1</td>
</tr>
<tr>
<td>C2/P21</td>
<td>43.5/25.0</td>
<td>56.5/75.0</td>
<td>48.9/50.0</td>
<td>51.1/50.0</td>
</tr>
<tr>
<td>C3/P31</td>
<td>40.0/73.8</td>
<td>60.0/26.2</td>
<td>32.4/37.5</td>
<td>67.6/62.5</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>27.3/66.7</td>
<td>72.7/33.3</td>
<td>50.0/80.0</td>
<td>50.0/20.0</td>
</tr>
<tr>
<td>C4/P41</td>
<td>53.8/68.8</td>
<td>46.2/31.3</td>
<td>56.3/72.7</td>
<td>43.8/27.3</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>42.9/23.3</td>
<td>75.1/76.7</td>
<td>50.0/80.0</td>
<td>50.0/20.0</td>
</tr>
<tr>
<td>C5/P51</td>
<td>52.9/30.2</td>
<td>47.1/69.8</td>
<td>55.6/68.4</td>
<td>9.4/18.2</td>
</tr>
</tbody>
</table>

As for stability, group mean scores for globality hide real dyadic differences. Four dyads differ by more than 20% for positive outcomes and two dyads differ by more than 20% for negative outcomes. Again, no discernible pattern emerges between individual coach and performer scores.

**Table 32**: Individual dyads’ globality scores (percentages) (logs).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Global</th>
<th>Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1/P11</td>
<td>24.0/30.4</td>
<td>44.0/56.5</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>38.9/34.6</td>
<td>44.4/61.5</td>
</tr>
<tr>
<td>C2/P21</td>
<td>43.3/18.5</td>
<td>40.0/59.3</td>
</tr>
<tr>
<td>C3/P31</td>
<td>10.3/6.9</td>
<td>75.9/86.2</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>5.0/7.5</td>
<td>72.5/77.5</td>
</tr>
<tr>
<td>C4/P41</td>
<td>8.3/4.8</td>
<td>75.0/66.7</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>52.0/14.3</td>
<td>48.0/85.7</td>
</tr>
<tr>
<td>C5/P51</td>
<td>11.8/1.9</td>
<td>84.3/86.5</td>
</tr>
</tbody>
</table>

Once again, differences in scores for C2/P21 evident in the log data (Table 32) appear less evident in the interview data (Table 31, although there is a difference approaching 20% for positive outcomes). Differences in log scores for C4.1/P42 are less pronounced in the interview data. By contrast, dyadic differences in the interview scores for C1.1/P12, C3/P31, C3.1/P32 and C5/P51 are less pronounced in the log scores.
Locus of causality (group)

Figure 8: Coach and performer groups’ locus of causality (speaker) scores by outcome (interviews).

E = External; I = Internal

Coaches

Performers

Figure 9: Coach (blue) and performer (red) groups’ locus of causality scores by outcome (logs). Positive scores = internal to the athlete; negative scores = external to the athlete.
(N.B.: the attributions made by both coaches and performers in the logs are coded according to whether the cause is internal or external to the athlete, therefore, for athletes, one can compare directly log and interview data, since, in the performers’ transcripts, the speaker is the athlete. However, for coaches’ transcripts, one must remember that the speaker here is the coach.)

In relation to interview data (Figure 8), coaches offer attributions that are largely external to themselves, especially when the outcome is positively or negatively salient. This contrasts with performers who tend to make more attributions internal to themselves in situations where the outcome is not neutral. When neutral, internal and external attributions are more evenly distributed.

The log data (Figure 9) show that both coach and performer groups have composite locus of causality scores more internal to the athlete than external for both positive and negative outcomes.

**Figure 10:** Coach and performer groups’ locus of causality (agent) scores by outcome (interviews).

**E=External; I=Internal**

**Coaches**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>E</th>
<th>I</th>
<th>Def</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>3%</td>
<td>97%</td>
<td>0%</td>
</tr>
<tr>
<td>Negative</td>
<td>4%</td>
<td>95%</td>
<td>1%</td>
</tr>
<tr>
<td>Neutral</td>
<td>4%</td>
<td>94%</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Performers**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>E</th>
<th>I</th>
<th>Def</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>2%</td>
<td>97%</td>
<td>1%</td>
</tr>
<tr>
<td>Negative</td>
<td>4%</td>
<td>96%</td>
<td>1%</td>
</tr>
<tr>
<td>Neutral</td>
<td>10%</td>
<td>89%</td>
<td>1%</td>
</tr>
</tbody>
</table>
Perhaps expectedly, both coach and performer groups make attributions in which the cause(s) is internal to the agent, regardless of the outcome.

Figure 11: Coach and performer groups' locus of causality (target) scores by outcome (interviews).

For positive outcomes coaches tend to offer causes distributed evenly between internal and external to the target, whereas performers offer more causes external to the target than internal. This difference between coach and performer groups is less evident for neutral outcomes where both groups offer more causes external to the target. For negative outcomes the distribution between external and internal causes is more even for both groups.
Locus of causality (individual dyads)

Table 33: Individual dyads’ locus of causality (speaker) scores (percentages) by outcome (interviews).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Locus speaker Positive</th>
<th>Locus speaker Neutral</th>
<th>Locus speaker Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Int</td>
<td>Ext</td>
<td>Int</td>
</tr>
<tr>
<td>C1/P11</td>
<td>6.7/70.7</td>
<td>93.3/29.3</td>
<td>28.3/49.2</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>2.5/70.3</td>
<td>97.5/29.7</td>
<td>17.2/35.1</td>
</tr>
<tr>
<td>C2/P21</td>
<td>0.0/75.0</td>
<td>100/16.7</td>
<td>25.5/87.5</td>
</tr>
<tr>
<td>C3/P31</td>
<td>2.2/42.6</td>
<td>97.8/57.4</td>
<td>16.2/16.7</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>9.1/46.7</td>
<td>90.9/53.3</td>
<td>0.0/70.0</td>
</tr>
<tr>
<td>C4/P41</td>
<td>15.4/37.5</td>
<td>84.6/62.5</td>
<td>6.3/81.8</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>21.4/40.0</td>
<td>78.6/60.0</td>
<td>33.3/81.3</td>
</tr>
<tr>
<td>C5/P51</td>
<td>5.9/58.1</td>
<td>94.1/41.9</td>
<td>25.9/21.1</td>
</tr>
</tbody>
</table>

The pattern of causes being largely external to the speaker for coaches and internal to the speaker for performers appears little affected by whether the outcome is positive or negative. However, most coaches appear to offer a higher number of causes that are internal to the speaker for neutral outcomes than for other outcomes.

Table 34: Individual dyads’ locus of causality scores (percentages) (logs).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Internal</th>
<th>External</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1/P11</td>
<td>64.0/47.7</td>
<td>8.0/21.7</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>66.7/92.3</td>
<td>11.1/7.7</td>
</tr>
<tr>
<td>C2/P21</td>
<td>70.0/65.4</td>
<td>6.7/15.4</td>
</tr>
<tr>
<td>C3/P31</td>
<td>48.3/39.7</td>
<td>32.8/29.3</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>22.5/80.0</td>
<td>60.0/7.5</td>
</tr>
<tr>
<td>C4/P41</td>
<td>23.8/42.9</td>
<td>66.7/33.3</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>70.4/51.7</td>
<td>25.9/34.5</td>
</tr>
<tr>
<td>C5/P51</td>
<td>60.8/80.8</td>
<td>21.6/3.8</td>
</tr>
</tbody>
</table>

In the interview data (Table 33) coaches tend to offer causes largely external to themselves, whereas a more variable pattern is evident for performers. In the log data (Table 34) coaches’ attributions tend to be more internal to the athlete, a pattern mirrored by the performers, also more likely to offer causes internal to themselves than external.
Table 35: Individual dyads’ locus of causality (agent) scores (percentages) by outcome (interviews).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Locus agent (positive)</th>
<th>Locus agent (neutral)</th>
<th>Locus agent (negative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1/P11</td>
<td>98.3/93.9</td>
<td>1.7/6.1</td>
<td>100/92.3</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>100/94.6</td>
<td>0.0/5.4</td>
<td>98.4/11.6</td>
</tr>
<tr>
<td>C2/P21</td>
<td>100/91.7</td>
<td>0.0/8.3</td>
<td>98.2/11.8</td>
</tr>
<tr>
<td>C3/P31</td>
<td>96.7/98.4</td>
<td>3.3/1.6</td>
<td>95.0/82.0</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>90.9/96.7</td>
<td>9.1/0.0</td>
<td>90.0/96.0</td>
</tr>
<tr>
<td>C4/P41</td>
<td>100/100</td>
<td>0.0/0.0</td>
<td>100/93.8</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>100/100</td>
<td>0.0/0.0</td>
<td>100/100</td>
</tr>
<tr>
<td>C5/P51</td>
<td>92.2/100</td>
<td>7.8/0.0</td>
<td>100/95.0</td>
</tr>
</tbody>
</table>

Since it is common for the perceived cause to emanate from the agent, it is not surprising that, under all outcome conditions, the causes selected by coaches and performers (although they may differ) are largely internal to the agent. Correspondingly, there are no notable differences within any of the dyads’ pairs of scores.

Table 36: Individual dyads’ locus of causality (target) scores (percentages) by outcome (interviews).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Locus target (positive)</th>
<th>Locus target (neutral)</th>
<th>Locus target (negative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1/P11</td>
<td>55.0/36.6</td>
<td>45.0/63.4</td>
<td>66.0/35.9</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>55.0/21.6</td>
<td>45.0/78.4</td>
<td>17.6/46.7</td>
</tr>
<tr>
<td>C2/P21</td>
<td>34.8/66.7</td>
<td>65.2/25.0</td>
<td>29.8/53.8</td>
</tr>
<tr>
<td>C3/P31</td>
<td>55.6/29.5</td>
<td>44.4/70.5</td>
<td>58.3/32.3</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>27.3/3.3</td>
<td>72.7/96.7</td>
<td>42.9/44.0</td>
</tr>
<tr>
<td>C4/P41</td>
<td>53.8/31.3</td>
<td>46.2/68.8</td>
<td>46.7/19.0</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>46.4/26.7</td>
<td>53.6/73.3</td>
<td>21.9/45.5</td>
</tr>
<tr>
<td>C5/P51</td>
<td>45.1/39.5</td>
<td>54.9/60.5</td>
<td>78.1/54.5</td>
</tr>
</tbody>
</table>

Four of the dyads’ pairs of locus of causality scores in relation to the target for positive outcomes differ by more than 20% and six of the pairs of scores for negative outcomes differ by more than 20%. For positive events coaches generally offer more causes internal to the target than do performers. No discernible pattern appears for neutral or negative events.
Controllability (group)

**Figure 12:** Coach and performer groups’ controllability (speaker) scores by outcome (interviews).

\[ U=\text{Uncontrollable}; \ C=\text{Controllable} \]

**Figures 13:** Coach (blue) and performer (red) groups’ controllability scores by outcome (logs). Positive scores = controllable; negative scores = uncontrollable.
Participants tend to make attributions in which the outcome is uncontrollable by the speaker, especially for positive and negative outcomes for coaches, and negative outcomes for performers (Figure 12). For neutral events uncontrollable and controllable outcomes are more evenly distributed for both groups.

From the log data (Figure 13) it seems that, whilst the data are more equivocal, coaches' controllability scores are slightly skewed toward controllable factors for positive outcomes and uncontrollable factors for negative outcomes. For performers there appears an even distribution of controllability scores for positive outcomes but a skew toward uncontrollable factors for negative ones. However, these patterns are more equivocal than for the interview data.

**Figure 14:** Coach and performer groups’ controllability (agent) scores by outcome (interviews).

With regard to the agent, coaches and performers demonstrate broadly similar patterns for the control dimension across outcomes. There is a tendency to offer more attributions in which the outcomes are controllable by the agents for positive outcomes, with this pattern being more distinctive for coaches. For negative events more outcomes are perceived by performers as uncontrollable by the agent, whereas there is a more even distribution for coaches. For neutral
events coaches offer more uncontrollable than controllable outcomes; for performers the distribution is more even.

Figure 15: Coach and performer groups' controllability (target) scores by outcome (interviews).

Whilst both coaches and performers give more attributions in which the outcome is uncontrollable by the target, across all outcomes, this tendency is more extreme for performers.
Controllability (individual dyads)

Table 37: Individual dyads’ controllability (speaker) scores (percentages) by outcome (interviews).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Control. speaker</th>
<th>Control. speaker</th>
<th>Control. speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive</td>
<td>Neutral</td>
<td>Negative</td>
</tr>
<tr>
<td>C1/P11</td>
<td>20.0/54.9</td>
<td>80.0/45.1</td>
<td>46.7/45.9</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>17.5/51.4</td>
<td>82.5/48.6</td>
<td>37.9/62.2</td>
</tr>
<tr>
<td>C2/P21</td>
<td>26.1/33.3</td>
<td>73.9/58.3</td>
<td>44.7/50.0</td>
</tr>
<tr>
<td>C3/P31</td>
<td>5.6/32.8</td>
<td>94.4/67.2</td>
<td>29.7/8.3</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>27.3/36.7</td>
<td>72.7/63.3</td>
<td>25.0/30.0</td>
</tr>
<tr>
<td>C4/P41</td>
<td>23.1/12.5</td>
<td>76.9/87.5</td>
<td>68.8/63.6</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>25.0/33.3</td>
<td>75.0/66.7</td>
<td>66.7/68.8</td>
</tr>
<tr>
<td>C5/P51</td>
<td>23.5/30.2</td>
<td>76.5/69.8</td>
<td>44.4/21.1</td>
</tr>
</tbody>
</table>

For positive outcomes both sets of coaches and performers make attributions largely uncontrollable by themselves. For negative outcomes and, with the exception of C4.1/P42, this preference for uncontrollable attributions is exaggerated. Some dyads (e.g., C3/P31) appear to attribute little control over outcomes.

Three of the dyads’ pairs of controllability scores in relation to the speaker for positive outcomes differ by more than 20% and four of the pairs of scores for negative outcomes differ by more than 20%.

Table 38: Individual dyads’ controllability scores (percentages) (logs).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Controllable</th>
<th>Uncontrollable</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1/P11</td>
<td>32.0/30.3</td>
<td>32.0/39.1</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>50.0/61.5</td>
<td>22.2/34.6</td>
</tr>
<tr>
<td>C2/P21</td>
<td>20.0/19.2</td>
<td>63.3/61.5</td>
</tr>
<tr>
<td>C3/P31</td>
<td>43.1/34.5</td>
<td>41.5/34.5</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>22.5/17.5</td>
<td>60.0/47.5</td>
</tr>
<tr>
<td>C4/P41</td>
<td>23.8/19.0</td>
<td>71.4/57.1</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>48.1/34.5</td>
<td>48.1/48.3</td>
</tr>
<tr>
<td>C5/P51</td>
<td>47.1/15.4</td>
<td>35.3/65.4</td>
</tr>
</tbody>
</table>

In contrast with the interview data (Table 37) the preference for uncontrollable attributions appears less pronounced in the log data scores (Table 38), although still evident in a number of dyads. Only C5/P51 log scores differ by more than
20%, a pattern that is only evident in their negative outcome interview data. Other dyadic differences in the interview scores are not so evident in the log scores.

**Table 39:** Individual dyads’ controllability (agent) scores (percentages) by outcome (interviews).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Control. agent</th>
<th></th>
<th>Control. agent</th>
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<th>Control. agent</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive</td>
<td>Neutral</td>
<td>Negative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cl/P11</td>
<td>71.7/63.4</td>
<td>28.3/36.6</td>
<td>55.0/60.7</td>
<td>45.0/39.3</td>
<td>52.8/38.5</td>
<td>47.2/61.5</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>60.0/54.1</td>
<td>40.0/45.9</td>
<td>44.8/43.2</td>
<td>55.2/56.8</td>
<td>47.1/20.0</td>
<td>52.9/80.0</td>
</tr>
<tr>
<td>C2/P21</td>
<td>56.5/41.7</td>
<td>43.5/50.0</td>
<td>48.9/43.8</td>
<td>51.1/56.3</td>
<td>43.9/28.2</td>
<td>54.4/71.8</td>
</tr>
<tr>
<td>C3/P31</td>
<td>55.6/60.7</td>
<td>44.4/39.3</td>
<td>29.7/58.3</td>
<td>70.3/41.7</td>
<td>52.8/51.6</td>
<td>47.2/48.4</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>63.6/56.7</td>
<td>36.4/43.3</td>
<td>0.0/50.0</td>
<td>100/50.0</td>
<td>65.0/42.1</td>
<td>35.0/57.9</td>
</tr>
<tr>
<td>C4/P41</td>
<td>76.9/56.3</td>
<td>23.1/43.8</td>
<td>18.8/54.5</td>
<td>81.3/45.5</td>
<td>50.0/44.0</td>
<td>50.0/56.0</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>75.0/43.3</td>
<td>25.0/56.7</td>
<td>42.9/62.5</td>
<td>57.1/37.5</td>
<td>33.3/38.1</td>
<td>66.7/61.9</td>
</tr>
<tr>
<td>C5/P51</td>
<td>49.0/30.2</td>
<td>51.0/69.8</td>
<td>37.0/5.3</td>
<td>63.0/94.7</td>
<td>31.3/45.5</td>
<td>68.8/54.5</td>
</tr>
</tbody>
</table>

Large differences on controllability by agents appear more rare, with only one dyad with such a difference evident for each of the sets of positive and negative outcomes. For positive outcomes coaches, and to a lesser extent performers, attribute more control to the agents than a lack of it. C5/P51 appear unusual in their apparent lack of control by agents. For negative outcomes results for coaches are more equivocal, while there is a tendency for performers to perceive less control by the agent.

**Table 40:** Individual dyads’ controllability (target) scores (percentages) by outcome (interviews).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Control. target</th>
<th></th>
<th>Control. target</th>
<th></th>
<th>Control. Target</th>
<th></th>
</tr>
</thead>
<tbody>
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<td></td>
<td>Positive</td>
<td>Neutral</td>
<td>Negative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1/P11</td>
<td>38.3/32.9</td>
<td>61.7/67.1</td>
<td>45.0/37.7</td>
<td>55.0/62.3</td>
<td>45.3/24.4</td>
<td>54.7/74.4</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>52.5/16.2</td>
<td>47.5/83.8</td>
<td>41.4/64.9</td>
<td>58.6/35.1</td>
<td>23.5/20.0</td>
<td>76.5/80.0</td>
</tr>
<tr>
<td>C2/P21</td>
<td>26.1/25.0</td>
<td>73.9/66.7</td>
<td>31.9/25.0</td>
<td>68.1/75.0</td>
<td>28.1/10.3</td>
<td>70.2/89.7</td>
</tr>
<tr>
<td>C3/P31</td>
<td>37.8/26.2</td>
<td>62.2/73.8</td>
<td>51.4/8.3</td>
<td>48.6/91.7</td>
<td>33.3/29.0</td>
<td>66.7/71.0</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>36.4/16.7</td>
<td>63.6/83.3</td>
<td>25.0/40.0</td>
<td>75.0/60.0</td>
<td>50.0/26.3</td>
<td>50.0/73.7</td>
</tr>
<tr>
<td>C4/P41</td>
<td>38.5/6.3</td>
<td>61.5/93.8</td>
<td>68.8/45.5</td>
<td>25.0/54.5</td>
<td>7.1/20.0</td>
<td>85.7/80.0</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>42.9/16.7</td>
<td>57.1/83.3</td>
<td>61.9/43.8</td>
<td>28.6/56.3</td>
<td>33.3/28.6</td>
<td>66.7/71.4</td>
</tr>
<tr>
<td>C5/P51</td>
<td>45.1/25.6</td>
<td>54.9/74.4</td>
<td>3.7/21.1</td>
<td>96.3/78.9</td>
<td>18.8/31.8</td>
<td>81.3/68.2</td>
</tr>
</tbody>
</table>

For positive and negative outcomes both the attributions made by coaches and performers offer less control by targets than control by them. Scores for
controllability in relation to the target differ between coach and performer for positive outcomes in three of the dyads and for negative outcomes in two of the dyads.

Universality (group)

Figure 16: Coach and performer groups’ universality (speaker) scores by outcome (interviews).

\[U=\text{Universal}; \ P=\text{Personal}\]

Figure 17: Coach (blue) and performer (red) groups’ universality scores by outcome (logs). Positive scores = universal; negative scores = personal.
(N.B. As for the locus of causality scores, universality data from the logs are coded in relation to the athlete, i.e., Does the attribution tell us something unique about the athlete? Therefore, one cannot simply compare the coaches’ interview (re: speaker) and log scores.)

Attributions made by coaches in interviews (Figure 16) tend to more universal to themselves than are those made by performers across all outcomes. Attributions are more evenly distributed between universal and personal for performers across all outcome categories.

With regard to log data (Figure 17), both coaches and performers tend to make attributions that are more universal than personal (to the athlete); for coaches this tendency is more apparent for positive outcomes.

**Figure 18:** Coach and performer groups’ universality (agent) scores by outcome (interviews).

For both coach and performer groups and across outcome categories, more attributions are personal to the agent, that is, they say something unique or idiosyncratic about the agent, than are universal.
Figure 19: Coach and performer groups' universality (target) scores by outcome (interviews).

For positive outcomes coaches tend to give more attributions which are personal to the target than do performers. For negative and neutral outcomes coaches’ statements are more evenly distributed between universal and personal attributions. Performers tend to give more attributions that are universal to the target for positive and negative outcomes but, for neutral outcomes, like those of coaches, the statements are evenly distributed between universal and personal attributions.
Universality (individual dyads)

Table 41: Individual dyads’ universality (speaker) scores (percentages) by outcome (interviews).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Universal. speaker</th>
<th>Universal. speaker</th>
<th>Universal. Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive</td>
<td>Neutral</td>
<td>Negative</td>
</tr>
<tr>
<td>C1/P11</td>
<td>16.7/57.3</td>
<td>83.3/42.7</td>
<td>11.7/39.3</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>0.0/62.2</td>
<td>100/37.8</td>
<td>6.9/40.5</td>
</tr>
<tr>
<td>C2/P21</td>
<td>8.7/50.0</td>
<td>91.3/50.0</td>
<td>17.0/75.0</td>
</tr>
<tr>
<td>C3/P31</td>
<td>1.1/34.4</td>
<td>98.9/65.6</td>
<td>18.9/54.2</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>0.0/36.7</td>
<td>100/63.3</td>
<td>0.7/40.0</td>
</tr>
<tr>
<td>C4/P41</td>
<td>15.4/18.8</td>
<td>84.6/81.3</td>
<td>37.5/54.5</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>14.3/56.7</td>
<td>85.7/43.3</td>
<td>47.6/93.8</td>
</tr>
<tr>
<td>C5/P51</td>
<td>13.7/37.2</td>
<td>86.3/62.8</td>
<td>22.2/36.8</td>
</tr>
</tbody>
</table>

With the focus of the attributions being performers and their performances it is likely that such attributions will offer little about the uniqueness of the coach and much more about the uniqueness of the performer. Therefore, it is unsurprising that most dyadic scores on this dimension differ by large percentages, coaches’ attributions being largely universal and performers’ attributions being more personal.

Table 42: Individual dyads’ universality scores (percentages) (logs).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Personal</th>
<th>Universal</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1/P11</td>
<td>24.0/34.8</td>
<td>40.0/42.4</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>16.7/46.2</td>
<td>44.4/50.0</td>
</tr>
<tr>
<td>C2/P21</td>
<td>40.0/22.2</td>
<td>40.0/70.4</td>
</tr>
<tr>
<td>C3/P31</td>
<td>15.5/15.5</td>
<td>65.5/67.2</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>5.0/15.0</td>
<td>80.0/72.5</td>
</tr>
<tr>
<td>C4/P41</td>
<td>15.4/14.3</td>
<td>84.6/61.9</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>48.0/46.4</td>
<td>48.0/53.6</td>
</tr>
<tr>
<td>C5/P51</td>
<td>35.5/17.3</td>
<td>43.1/57.7</td>
</tr>
</tbody>
</table>

In contrast to the interview data (Table 41), there are far fewer differences between individual coaches’ and performers’ log scores on this dimension. From the log data both coaches’ and performers’ attributions are more universal than personal.
Table 43: Individual dyads’ universality (agent) scores (percentages) by outcome (interviews).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Universal. agent</th>
<th>Universal. agent</th>
<th>Universal. Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive</td>
<td>Neutral</td>
<td>Negative</td>
</tr>
<tr>
<td>C1/P11</td>
<td>88.3/78.0</td>
<td>11.7/22.0</td>
<td>55.0/60.7</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>87.5/75.7</td>
<td>12.5/24.3</td>
<td>62.1/51.4</td>
</tr>
<tr>
<td>C2/P21</td>
<td>78.3/58.3</td>
<td>21.7/41.7</td>
<td>61.7/87.5</td>
</tr>
<tr>
<td>C3/P31</td>
<td>72.2/70.5</td>
<td>27.8/29.5</td>
<td>75.7/87.5</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>72.7/53.3</td>
<td>27.3/46.7</td>
<td>100/40.0</td>
</tr>
<tr>
<td>C4/P41</td>
<td>76.9/81.3</td>
<td>23.1/18.8</td>
<td>87.5/72.7</td>
</tr>
<tr>
<td>C4.1/P42</td>
<td>53.6/86.7</td>
<td>46.4/13.3</td>
<td>71.4/93.8</td>
</tr>
<tr>
<td>C5/P51</td>
<td>82.4/55.8</td>
<td>17.6/44.8</td>
<td>70.4/73.7</td>
</tr>
</tbody>
</table>

In relation to agents, attributions offered by coaches and performers tended to be more personal than universal across outcome categories. There are also much fewer large differences between coaches’ and performers’ scores compared to those in relation to speakers. Generally, coaches’ scores for both positive and negative outcomes tend to be relatively more personal than performers’ scores.

Table 44: Individual dyads’ universality (target) scores (percentages) by outcome (interviews).

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Universal. target</th>
<th>Universal. target</th>
<th>Universal. Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive</td>
<td>Neutral</td>
<td>Negative</td>
</tr>
<tr>
<td>C1/P11</td>
<td>75.0/56.1</td>
<td>25.0/43.9</td>
<td>35.0/41.0</td>
</tr>
<tr>
<td>C1.1/P12</td>
<td>57.5/32.4</td>
<td>42.5/67.9</td>
<td>34.5/40.5</td>
</tr>
<tr>
<td>C2/P21</td>
<td>69.6/66.7</td>
<td>30.4/33.3</td>
<td>46.8/62.5</td>
</tr>
<tr>
<td>C3/P31</td>
<td>53.3/29.5</td>
<td>46.7/70.5</td>
<td>70.3/66.7</td>
</tr>
<tr>
<td>C3.1/P32</td>
<td>72.7/33.3</td>
<td>27.3/66.7</td>
<td>75.0/40.0</td>
</tr>
<tr>
<td>C4/P41</td>
<td>61.5/18.8</td>
<td>38.5/81.3</td>
<td>68.8/63.6</td>
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<tr>
<td>C4.1/P42</td>
<td>46.4/50.0</td>
<td>53.6/50.0</td>
<td>57.1/93.8</td>
</tr>
<tr>
<td>C5/P51</td>
<td>62.7/30.2</td>
<td>37.3/69.8</td>
<td>37.0/38.8</td>
</tr>
</tbody>
</table>

Coaches’ scores for positive outcomes tend to be more personal to targets than universal, whereas performers’ scores for positive outcomes are more equivocal but tend to be more personal to the target. For negative outcomes coaches’ and performers’ scores appear more evenly distributed between personal and universal. There are more differences on universality from the perspective of the target than from that of the agent.
In order to summarise individual dyad dimension scores, differences of greater than 20% are shown in Table 45.

**Table 45:** Dyads with differences on interview dimension frequency scores of greater than 20% (positive and/or negative differences as labelled).

<table>
<thead>
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<tbody>
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<td>(Pos)</td>
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<td>(Pos/ Neg)</td>
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<td>(Pos)</td>
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<td>*</td>
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<td>*(</td>
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<td>(Pos/ Neg)</td>
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<td>*</td>
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<td>(Pos)</td>
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<td>(Pos/ Neg)</td>
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<td>*</td>
<td>(Pos)</td>
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</tr>
<tr>
<td>C5/</td>
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<tr>
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</tbody>
</table>

In relation to Table 45, it can be seen that all of the dyads differ by a substantial amount on at least two dimensions and one, C1.1/P12, on all dimensions.

**Discussion**

One of the issues in comparing the two sets of data (log and interview) is that the log data do not include the varied SAT perspectives. Therefore, in order to consider compatibility, log data must be coded in relation to a fixed reference point (i.e., the athlete, for locus causality and universality). However, the LACS used to code the interview data considers three dimensions (including locus of causality and universality) from the varied perspectives of SAT, so, for the coaches, it is particularly difficult to compare like with like. Whereas, for performers, one can compare the log data on these dimensions with interview data in relation to the speaker (which is therefore in relation to the performer),
this cannot be done for the coaches. This highlights one of the problems with considering the results of previous actor-observer studies. It also reinforces the need to consider varied methodologies in future research and to take account of the potential differences in speakers, agents and targets adopted by various groups and individuals.

The results outlined in this chapter allow the attributions made in interviews by coaches and performers in operating dyads to be contrasted. Furthermore, and the previous comments notwithstanding, where appropriate, analyses of data presented in Chapter 4 for attributions made in questionnaire responses may be contrasted with those from interviews. This Discussion section will focus on the interview data, for coach and performer groups and then individual dyads, contrasting these results with those of the log data analyses where appropriate.

**Group data**

It appears that, in the interviews conducted between one and four weeks after naturally occurring sports events, the coaches in this study made more attributions than did performers (Table 66, Appendix 8). These attributions were more likely to be positive in nature than negative or neutral for both coach and performer groups but contained little emotional content (Tables 67 and 68, Appendix 8), especially in the case of coaches. For performers the attributions were more often relating to specific events; for coaches the distribution between specific and general events was more balanced (Table 69, Appendix 8). This may reflect the coaches' ability to take a wider view of the training and competition environments, whereas the performer appears more episodic. Whereas coaches often made reference in their attributions to the performers, performers rarely made reference to coaches in theirs (Table 70, Appendix 8). The former is not surprising given the focus of the interviews; the latter is, perhaps, more surprising as, within such close working relationships, one might expect greater inclusion of the coach in performers' attributions for performance. The number of attributions per phase of the season probably reflects the duration of each phase and the number of interviews in each (Table 71, Appendix 8).

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4 Although the researcher rather than the speaker assessed saliency, contextual information was used to increase the confidence of such labelling.
These results are, perhaps, not surprising. Observers who can empathise with actors, due to having considerable experience in and knowledge of the activity, and who may be able to consider the outcomes from more diverse perspectives, are more likely to offer a greater range of attributions than the actors themselves. The high percentage of training outcomes may have resulted in a more positive slant, in that the goals for these events are perhaps more likely to be controllable and, hence, achievable than those for competition. Given the time lag between event outcome and interviews, emotions may well have dissipated over time. One would expect coaches to make reference to their performers given the nature of the target events, although it is surprising how little overt reference performers made to their coaches. This may reflect the individual nature of the sport of athletics; future studies in team sports, where team selection and tactics may be more influential, may yield different results.

Research hypothesis 1: There will be coach-performer differences in the selection of causal agents and targets.

Whilst there do appear to be some actor-observer differences in the agents selected by each group, it is not consistent with the divergent perspectives model. The agents employed by coaches and performers are important in that it is often within the agent that the cause of the outcome is located. Both coach and performer groups identified the ‘athlete’ as the most common agent. This is predicted for the coach group since, for them, the athlete is the primary focal point. However, one might expect athletes to have selected a greater number of causal factors from their environment. Coaches identified themselves, ‘coach’, and then ‘conditions’ as other significant agents. For performers, the ‘training programme’ and then ‘conditions’ were the next most commonly cited agents. The ‘coach’ was rarely cited by performers as the agent, although it could be argued that the training programme is primarily designed by the coach, and hence implicit within this agent. Therefore, whilst the athlete was the most common agent, there may be some discrepancy between the two groups on other persons or environmental factors that bring about outcomes. Future research will need not only to take account of the agents and targets offered by different speaker groups.
but also attempt to assess the dimensional qualities associated with attributor’s meanings for each of them.

With regard to targets, again, and not surprisingly, both groups agreed on the ‘athlete’ as the primary person or circumstance affected by the cause. However, whilst the coach group identified themselves, the ‘coach’, as the target in nearly a quarter of attributions, the performer group identified the ‘athlete’s performance’ in over a quarter of their attributions. It may be, therefore, that whilst both coaches and performers in their dyads were explaining the same sporting outcomes, their attributional focus within this framework was different; each group is explaining the outcome in terms which are most significant to them. It may be, therefore, that each group is selecting its own causal background (McGill, 1989) against which to explain the event. Future studies need to ensure that research designs take account of this by eliciting agents and targets that are clearly defined and differentiated.

**Research hypothesis 2:** There will exist actor (athlete)-observer (coach) differences in the dimensional qualities of attributions made at both group and individual dyad level.

**Research hypothesis 3:** Actor-observer differences will be more pronounced for negative outcomes.

**Research hypothesis 4:** Self-serving (performers) and other-serving (coaches) biases will exist in the attributions made by coaches and performers (especially apparent for locus of causality, controllability, and stability dimensions).

**Research hypothesis 5:** The time-from-event effect (e.g., Burger, 1986) on attributions will result in a difference in the pattern of attributions made by coaches and performers between the log and interview data, such that attributions become more dispositional over time, especially for the athletes.

The contrasts possible between log and interview data with regard to group dimension scores can be summarised as follows in Table 46.
Table 46: Summary of findings (in relation to attributional dimensions).

<table>
<thead>
<tr>
<th></th>
<th>Interview data</th>
<th>Log data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stability</strong></td>
<td>• Coaches' and performers' scores are more stable for positive and neutral outcomes and more unstable for negative outcomes</td>
<td>• Coaches' and performers' composite scores are similar, and portray a similar pattern to those of the interview data: positive outcomes are more stable, negative outcomes more unstable</td>
</tr>
<tr>
<td><strong>Globality</strong></td>
<td>• Coaches' and performers' globality scores are generally specific across outcomes</td>
<td>• Coaches' and performers' globality composite scores are generally specific across outcomes</td>
</tr>
<tr>
<td><strong>Locus of causality</strong></td>
<td>• Performers' speaker locus of causality scores are internal except for neutral outcomes, coaches' speaker locus of causality scores are largely external across outcomes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Causes are deemed by both coaches and performers to be largely internal to the agent across outcomes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• For coaches, there is a relatively even split between causes internal and external to the target; this is mirrored by performers except for positive outcomes which tend to be more external to the target</td>
<td></td>
</tr>
<tr>
<td><strong>Controllability</strong></td>
<td>• Coaches' speaker controllability scores are more uncontrollable than controllable, especially for positive and negative outcomes; performers' scores are also more uncontrollable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Both coaches and performers tend to offer outcomes split between uncontrollable and controllable by the agent across outcome saliency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Coaches and especially performers offer outcomes generally uncontrollable by the target</td>
<td></td>
</tr>
<tr>
<td><strong>Universality</strong></td>
<td>• Coaches' speaker universality scores are largely universal; performers' scores are more evenly distributed for all outcome categories</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Both coaches and performers offer attributions more personal to the agent than universal across outcomes</td>
<td>• Coaches' and performers' composite scores are more universal than personal across outcomes, for coaches, especially for positive outcomes</td>
</tr>
</tbody>
</table>
Coach-performer Compatibility: Interview Data

- For neutral and negative outcomes both coaches and performers offer attributions evenly split on universality; for positive outcomes, coaches offer attributions more personal and for performers more universal to the target.

Stability. From both the analyses of interview data and log data (Figures 4&5) coach and performer groups have similar patterns for the stability of causes cited in their respective attributions. Specifically, causes identified were more often stable for positive and neutral outcomes but more unstable for negative outcomes in the interview data and more stable for positive and more unstable for negative outcomes in the log data of both groups. This appears functional as more stable causes suggest a likely reoccurrence in future, certainly desirable for positive outcomes, and unstable causes, being changeable, lessen the negative impact of unsuccessful outcomes (Weiner, 1992). It appears that this tendency is consistent over time (between the immediate log data and the time-lagged interview data) and modes of data collection. Given Tenenbaum and Furst's (1986) finding that, taking into account that more than the first attribution leads to an increase in the stability scores, one might have expected both sets of scores to be high on stability, since both sets of data included all attributional statements given.

Furthermore, from these data, it appears that coach and performer groups are compatible on the dimension of stability. It can, therefore, be assumed that both coach and performer would, more often than not, have similar expectations for future performance.

Globality. In relation to globality (Figures 6&7), it appears that, regardless of when and how attributions are collected, by immediate log or time-lagged interview, the results are similar: both coaches and performers tend to offer more specific than global attributions across outcomes. This may be explained by the nature of the outcomes for which attributions are made, which themselves are more often relating to a specific event, competition or training performance, than to events in general. Furthermore, given that coaches and performers agreed on the events to be explained, these events may have been selected because of some
specific reason, such as their relative importance or uniqueness. Within Weiner's (1986) model, causes that have specific outcomes result in a limited number of relevant areas of the attributor's life being affected. In this study it may be that most of the cited outcomes and their causes are domain, or even sub-domain, specific.

Again, it appears that coaches and performers are compatible on the globality dimension.

*Locus of causality.* Locus of causality is an attribution dimension that requires *attaching* the cause to a specific person or circumstance. That is, the cause in the attributional statement is assessed as being either internal or external to someone or something (and therefore cannot be assessed in the general sense, as is the case of 'stability'). For the attributions collected via the log causes were coded as either internal or external to the athlete to allow simple comparison between coaches and performers. However, for the interview attributions, the LACS allowed causes to be coded from the perspective of the speaker (athlete or coach), agent and target.

What follows is an attempt to compare log data with the interview locus of causality results in relation to the speaker, agent and target. Assessing locus of causality and the remaining dimensions from the perspective of the speaker is regarded as the most appropriate perspective since, for each attribution, agents and targets may vary, making simple comparison impossible. However, it should be borne in mind that, for locus of causality and universality dimensions, coaches' log scores are coded in relation to the athlete (for the reasons offered in Chapter 4). Any conclusions regarding compatibility must take this into account.

From analysis of the log data it appears that both coaches and performers cite causes that are more internal to the athlete than external across outcome categories. This appears consistent with the interview data where performers' attributions are generally internal to themselves (as speakers) where the outcome is not neutral, whilst coaches' attributions are more external to themselves. Such findings, when account is taken of the agents and targets employed by coaches,
indicate causes located within the athlete are most commonly cited by both
groups, both immediately after the event and some time (1-4 weeks) later. This
appears contrary to the hypothesised actor-observer difference. Furthermore, it
does not appear to offer support for Ross and Sicoly's (1979) contention that
active observers (i.e., coaches) focus more on their own contribution than on that
of their co-workers (i.e., performers). It may be that the heavy personal
involvement of coaches in their athletes' performance and progress draws their
explanations closer together; it has been noted elsewhere that personal
involvement by an observer can alter the actor-observer effect (Chen et al., 1988).
It is also unsupportive of a self-serving bias in the athletes and other-serving bias
in the coaches. Causes tend to be located within the athlete whether the outcome
is positive or negative.

For positive outcomes this pattern of attributing should lead the athlete to
enhanced feelings of pride and esteem but, for negative outcomes (for log data
this is relative, since the 'less successful' sub-group include scores of 2 on the
success scale), such internal causes may lead to lower athlete esteem and pride in
performance (Weiner, 1986).

An issue of importance here is whether it is more important for the athlete and
coach to agree on the nature of causes for outcomes (as they appear to here) or
whether coaches should help performers attribute outcomes to causes the
attributional qualities of which result in positive affect and cognition even when
the coach may believe otherwise. Future research may wish to assess this.

The apparent consistency of the locus of causality data over time, i.e., causal
factors being primarily external to the coach and internal to the athlete, would
indicate that the equivocal previous findings of researchers who have found
changes in locus of causality over time (e.g., Moore et al., 1979; Miller & Porter,
1980) require further exploration. The methods used in the present study make
direct comparison with Moore et al.'s findings that attributions made by actors
became more dispositional over time, and those of Miller and Porter, that
observers' attributions became more situational, difficult. The present findings do
not suggest the likelihood of attributional conflict between coaches and
performers but suggest compatibility in the log data and little evidence of incompatibility in the interview data. This may provide some support for the comments of Blass and Kaplowitz (1990), that actor-observer differences (usually considered in relation to locus of causality) are not likely in long-standing relationships and, where reported, may be an artefact of the methods used to collect data.

Perhaps expectedly, both coach and performer groups make attributions in interviews in which the cause(s) is internal to the agent, regardless of the outcome. It should be recalled that the agents selected by each group do vary, although the athlete remains the primary agent for each group.

For positive outcomes coaches tend to offer causes distributed evenly between internal and external to the target, whereas performers offer more causes external to the target than internal. This difference between coach and performer groups is less evident for neutral outcomes where both groups offer more causes external to the target. For negative outcomes the distribution between external and internal causes is evenly split for both groups. This apparent difference for positive outcomes may reflect the different targets selected by each group; for example, coaches select themselves as targets far more than do performers, therefore, tending to increase their score for causes internal to the target.

Controllability. In relation to controllability scores, there is an interesting contrast between interview and log data. Soon after the outcome coaches reported in the logs attributions higher in controllability for positive outcomes and lower in controllability for negative outcomes. Performers’ attributions are evenly distributed on controllability for positive outcomes and more uncontrollable for negative outcomes. This might indicate the operation of a self-serving bias for the performers and other-serving bias in the coaches’ responses, in that lacking control for a negative outcome helps prevent guilt and other negative self-directed emotions.

However, in the interviews conducted between 1 and 4 weeks later, coaches’ speaker controllability scores were more uncontrollable than controllable for
positive and negative outcomes; performers' scores were also more uncontrollable but especially for negative outcomes. These findings are difficult to explain. It might be that, given time to reflect and discuss the outcomes, factors additional to those controllable by coach or performer are considered more salient or influential. Alternatively, memory may influence the recall of different causal factors. For example, respondents may recall easily that the weather was poor or the opposition was strong but remember less about their own input.

The results for controllability, in relation to the agent, need to be seen in relation to those from the perspective of the speaker. Furthermore, one should be cognisant of the relative levels of employment of various agents by coaches and performers. With regard to the agent, coaches and performers demonstrate broadly similar patterns for the control dimension across outcomes, both groups, but especially coaches, offering more attributions in which the outcomes are controllable by the agents for positive outcomes. Therefore, for positive outcomes, coach and performer groups seem compatible.

For negative events more outcomes are perceived by performers as uncontrollable by the agent, whereas there is a more even distribution for coaches. What is difficult to tell from these data is whether when respondents believe the outcome is uncontrollable by the agent, they view it as controllable by anyone else. The relatively more controllable outcomes stated by the coaches may reflect their level of experience and/or a need to perceive themselves as managing the coaching/training process.

Given that the majority of agents are the ‘athlete’, it could be argued that this broad pattern of controllability scores for attributions suggests a self-/other-protective bias. Both groups perceive that the agents have less control over the outcomes for negative events than positive ones, therefore, there may be less placing of responsibility on the agent for a negative outcome.

Both coaches and performers give more attributions in which the outcome is uncontrollable by the target, across all outcomes; however, this tendency is more pronounced for performers. Given the relatively high incidence of ‘athlete’ as
target, this finding is difficult to explain. However, the pattern of results for coaches and performers is similar, although performers’ outcomes appear less controllable by the targets for all outcome categories.

*Universality.* Coaches’ universality scores are more universal across outcome categories, both for log data (where attributions are universal to the athlete) and interview data, from the perspective of the speaker (i.e., universal to the speaker). Performers’ log scores are also more universal than personal but, in interviews, attributions are more evenly distributed between universal and personal. It therefore appears that coaches in this study, and performers in the time immediately after the events, tend to offer attributions that say more about general cause and effect relationships than to ones specific to the performer (log) or speaker (interview). Coaches may tend to step back from specific outcomes and consider the broader training and competition setting, and be able to contrast specific performers’ behaviour with those of others. After a time delay performers appear less prone to offer universal attributions in the interviews suggesting, perhaps, that performers become more focussed on, or have greater recall of, the peculiarities of the circumstances leading up to an outcome after a time lapse.

It is unlikely that this difference between coaches and performers will result in incompatibility (or more extreme conflict). However, coaches should be aware of this trend and assist performers to consider broader training and competition factors that may affect outcomes, especially after a time delay.

For both coach and performer groups, and across outcome categories, more attributions are personal to the agent than are universal. Again, account should be taken of the pattern of employment of the various agents utilised. Furthermore, these events were specific, significant training sessions or competitions and the outcomes were the relative success in relation to achieving their personal goals within these sessions. These personally selected outcomes may have encouraged more personal attributions.
Furthermore, since the whole attribution is considered for coding the universality dimension, within the Cause - Link - Outcome chain, it may be that the *uniqueness* lies in the nature of the outcome rather than the uniqueness of the cause.

Whilst taking into account the pattern of employment of targets for both groups, these results may suggest a potential area of incompatibility. Particularly for positive outcomes, coaches may be identifying something unusual about, or personal to, the target in the lead up to an outcome, whereas, for performers, the attributions seem to represent perceptions more of a *typical* case. This may have implications for how each group views such outcomes and the circumstances leading up to them, and how they are dealt with in the future.

*Summary of group data.* From the preceding discussion of results it seems that there is some evidence of actor-observer differences but that the degree to which it is present is less than in most previous studies. This is, perhaps, due to the long-standing nature of these dyads, the nature of track and field athletics, and the requirement for individual coaching attention in this sport. Where limited actor-observer differences do occur, this may be accounted for by the selection of different agents and targets. It appears that, where saliency of outcome is associated with actor-observer differences, positive outcomes produce more actor-observer differences than negative ones.

With regard to the self-serving bias (athletes) and other-serving bias (coaches), there is little evidence of this in relation to the locus of causality (indeed the performers appear to internalise negative outcomes) or controllability dimensions.

It does appear that coaches’ and performers’ patterns of attributing may change over the time between the immediate log data collection and the subsequent interviews, specifically in relation to universality. Future research may need to consider the impact of attributions made at different times after the event. For example, coaches’ and performers’ causal beliefs at the points in time when decisions about future competition and training (and perhaps selection in some sports) are being made would seem to be the most significant in relation to
potential conflict. Future research should consider compatibility of causal beliefs at these times.

**Individual dyads**

With the exception of C3.1/P32, all dyads appear to appraise the majority of outcomes similarly in relation to saliency. However, Coach 3.1 makes more attributions containing a negative element and fewer attributions containing positive elements than does Performer 32. Therefore, in a free response interview, this coach and performer appear to have different perceptions about the saliency of the outcomes or, indeed, are focusing on different elements of the outcomes when appraising their jointly selected events. It may be that, for some dyads, the potential for incompatibility is due not to differences in the dimensional qualities of the attributions, *per se*, but to the selection of different outcomes or components of them within the target behaviour for which attributions are made.

In the majority of dyads the occurrence of emotional content in attributional statements is low. This, perhaps, reflects the time delay between the event and the interviews. During this time period any emotions regarding the outcomes may have dissipated. Where it does occur it is more often positive than negative and is more apparent in performers' statements than in those of coaches. This is not surprising as one would expect that performers would have greater emotional investment in the events and their outcomes than do coaches.

In a number of dyads the performer offers a larger percentage of attributions which relate to a specific occurrence or event, whereas the coach offers attributions which are more general (within the sport domain) in nature. This may reflect the coaches' observer perspective, the ability or motivation to consider a wider perspective and/or performers' emphasis on the specific nature of the task at hand. It may be necessary for coaches to recognise this emphasis by their athletes, especially in terms of helping performers cope with specific, short-term outcomes in their training or competitions.

In relation to the agents and targets selected by members of individual dyads in interviews, the following results can be discerned from Tables 21-28.
For all dyads the ‘athlete’ is the primary agent and target, and this appears to be generally the case for both dyadic members. This is to be expected since the events being explained were outcomes associated with performers’ goals in training and competition. However, there is a degree of variation between dyads.

Coach 1 and 4, in particular, appear to identify themselves as major agents and targets in their attributions and this correspondingly reduces the incidence of the athlete as agent and target. This focus does not appear to be mirrored by their respective athletes. Indeed, Coach 4 appears to differ notably from Performer 42 in identifying himself as a major agent and target. It seems that these coaches in particular see themselves as contributing greatly to their athletes’ performances but also being affected by the outcomes. The degree to which this may contribute to potential attributional conflict within these dyads cannot be judged from these data alone but will contribute to differences in these participants’ dimension scores. However, it seems reasonable to assume that, if coaches tend to focus more on themselves in explaining performer outcomes than do performers, who tend to focus more on themselves, there is the potential for weakened communication. Of course, it may be that the process of completing the logs and interviews refocused respondents’ attention. An approach that codes more naturally occurring discourse would, therefore, be advantageous in addressing this issue. Future research will also need to explore the extent to which this relative self-focus by some coaches is due to motivational or perceptual biases.

Performers 31 and 32 place a heavy focus on the ‘training programme’ as an agent. It appears that these performers believe the programme is responsible for or is the key contributory factor in a large number of the outcomes. Following positive outcomes this may be comforting to an athlete since the programme is relatively stable and controllable. In the case of poorer performances it offers a potential scapegoat or, at least a causal factor, that can be amended in future.

Both Coach 5 and Performer 51 include a high percentage of ‘conditions’ as agent. This, and their correspondingly low percentage of ‘athlete’ as agent, suggests that they are at least compatible in looking in the same place
('conditions') for the cause of outcomes. However, it could be argued that such an emphasis on an uncontrollable factor is potentially dysfunctional.

In most cases the athlete cites 'athlete's performance' as a target more often than does their coach. Indeed, combined with the 'athlete', these make up the vast majority of the performers' targets. It may be that the performers have a much narrower attributional focus than do the coaches who, with additional experience, a wider perspective on training and competition and, arguably, differing motivational needs, consider a greater range of outcomes and their impact.

It appears that coaches identify themselves as targets more than as agents. It would seem that these coaches see themselves more as affected by outcomes than people bringing about outcomes. Again, in the context of these interviews, this is surprising as the focus was on athlete performance. It may suggest that coaches see themselves much more as an active part of a dynamic dyadic partnership than do the athletes, gaining from it, in the sense of learning and experiencing, as well as putting into it. The exception to this is Coach 3.1, who cites himself much less as agent and target than other coaches, appearing to perceive himself as rarely bringing about outcomes or being affected by them.

Results extracted from the group data may camouflage differences in dimension scores within individual dyads. From Table 45 it can be seen that all dyads differ on a number of the dimensions, although there appears no obvious pattern to these differences. Differences appear for both positive and negative outcomes. This suggests the need for coaches and performers to be aware that it is not only in negative outcome situations where potential conflict may occur. However, it is noted that the individuals in each of these dyads have been working together for some time and, therefore, these differences appear not to undermine seriously the working relationship.

For dimension scores from the perspective of the speaker, where differences occur, it is often for both positive and negative outcomes. In the case of locus of causality scores, this is due to the often mutual exclusivity of locus of causality scores in relation to each dyadic member, i.e., even if they both agree on the
cause of an outcome it may be that this cause is internal to the coach as speaker but, at the same time external to the athlete. Therefore, on this dimension, a high degree of opposite scores and, therefore, large percentage differences, may actually be reflecting compatibility (in the sense of agreement).

Within dyads the fewest differences in dimension scores occur from the perspective of the agent. That is, whilst each dyad member may select distinct agents, the dimensional qualities of the attributions in relation to these agents appear largely similar. Future research considering attributional compatibility will have to consider whether it is of greater importance for dyad members to offer attributions in which the dimensional qualities are similar or whether the compatibility of coach and performer dyads is more dependent upon the selection of similar agents.

Of all the dimension scores (excluding locus of causality for the reasons given), controllability in relation to the agent seems to offer fewest differences. Therefore, most of the coach-performer dyads agree on the ability of the agent to have control over the outcome. This is significant in that this dimension is most likely to influence the participant’s feelings about change in the future and, where the attribution is also internal, will influence feelings of pride (for positive outcomes) or guilt (for negative outcomes) (Weiner, 1986).

**Stability.** Considering the dimension scores of individual dyads, it appears that positive outcomes tend to result in more stable attributions for both coaches and performers than for negative outcomes. However, within the dyads, there is no clear pattern of coaches or performers displaying the greater propensity for this.

It also appears that three dyads differ by more than 20% on stability for both positive and negative outcomes. This may potentially result in these dyad members’ differing in their expectations for future outcomes. This, in turn, may affect their perceptions of what is required within training and competition in order to achieve future positive outcomes. For these three dyads there is, therefore, potential incompatibility on this dimension. In is further interesting that none of these dyads show this difference in their log scores on this dimension,
although positive and negative outcomes are not distinguished in the individual log data. It could be that this potential incompatibility develops after the initial appraisal of the outcome. However, the reverse of this pattern is true for two other dyads, C2/P21 and C4.1/P42. They have substantial differences in their log scores, which are less evident in their interview data. Therefore, whilst change in perceptions within dyads between immediate log and delayed interview data seems possible, the degree to which this brings dyad members’ perceptions closer together or further apart seems equivocal.

*Globality.* For globality only one dyad, C3.1/P32, shows a greater than 20% discrepancy for both positive and negative outcomes, whilst four other dyads differ for either positive (3) or negative (1) outcomes. In this dyad the performer offers more global causes for positive outcomes than does the coach and more specific causes for negative outcomes than does the coach. For the athlete this may be functional since a specific cause (for a negative outcome) may be more amenable to change and will be less damaging to other aspects of the athlete’s life. Once again, for this dyad, this difference is not apparent in the log data.

*Locus of causality.* For there to be compatibility on the locus of causality dimension (speaker) one would expect causes selected often to be internal to the performer (as speaker) but external to the coach (as speaker). Indeed, even when the same cause is selected by both dyad members, this may be internal to the performer but external to the coach (e.g., athlete fatigue). Therefore, whilst percentages are different for coaches and performers, they may still be compatible on this dimension (from the perspective of the speaker).

Seven of the dyads differ in their scores by greater than 20% (possibly for the reasons given previously). However, it is interesting that in one dyad, C4.1/P42, locus of causality (speaker) scores do not differ a great deal for either positive or negative outcomes. It appears that this coach and performer are attributing cause to factors external to both of them (e.g., the conditions, opposition). Whilst this may reduce the likelihood of incompatibility, it may not optimise the opportunity for positive affect following a successful outcome.
As might be expected, no dyads differ on locus of causality in relation to the agent. Since agents are the people or circumstances responsible for the outcome, one would expect most causes to be located within them.

However, in relation to targets, three dyads' scores differ by more than 20% for both positive and negative outcomes, although the direction of these differences is inconsistent. Whilst some of this variance may be explained by the selection of different targets, all three dyads tend to select the 'athlete' as the primary target. Differences in the locus of causality where the target is common to both may be problematic in that the sense of responsibility and personal affect (in the case of the athlete as target) may differ correspondingly. To avoid potential incompatibility, these three dyads may need to consider which targets are being selected and the extent to which attributed causes are located within them.

*Controllability.* In relation to controllability (speaker), three dyads differ for positive and four for negative outcomes. Only one dyad, C3/P31, appears to differ by more than 20% for both positive and negative outcomes. Coaches in particular seem to perceive little control over positive or negative outcomes, with the possible exception of Coach 4. It is interesting that this coach appears to feel greater control over Performer 42's negative outcomes than either other coaches in relation to their athletes or himself in relation to Performer 41. It may be that this coach feels some responsibility for these performances and perceives the ability to change these in the future. Future research may need to consider the extent to which a global attributional style may be mediated by interpersonal relations with specific others, especially in relation to a joint task.

Few differences exist in relation to controllability (agents). For positive outcomes coaches and performers appear to perceive more control by the agent than a lack of it. This will tend to produce positive affect and expectation where the agent is the speaker and confidence in other agents where it is not the speaker. Coaches and performers appear to perceive less control by agents for negative outcomes. Coach 5/Performer 51 perceive a lack of control by the agent. Coupled with a similar perceived lack of control for negative outcomes (especially in the coach), this may, if heightened, lead to feelings of relative helplessness.
There also appears a relative lack of perceived control by targets for both individual coaches and, especially, performers in both positive and negative outcome situations. This degree of inevitability may reflect the nature of the sport in that there are arguably fewer variables affecting relative outcomes than for sports more dependent on varied skills and tactics. It may also reflect the goals set by these participants. Where there are some differences between coach and performer, in five of the dyads, it appears that more control by the target is perceived by the coach. This probably reflects the selection of the ‘athlete’ as target, whom coaches may perceive as having more control than do the athletes themselves.

*Universality.* With regard to universality (speaker), all of the dyads differ by more than 20% for negative outcomes and seven of them for positive events. Not surprisingly, coaches’ attributions are largely universal, saying little about their own peculiarities or uniqueness, and performers’ attributions relatively more personal across all outcomes. This is largely a function of the focus of the outcomes: the athletes’ performances in training and competition.

When considered in relation to agents, fewer differences occur with only one dyad’s scores differing for both positive and negative outcomes. Both performers and, especially, coaches offer more attributions that indicate something personal rather than universal about the agent. The propensity for citing athletes as the agent may contribute to explaining this result; individual coaches and performers may tend to focus on the unusual or peculiar qualities of the performer rather than more generic contributory factors. The individual nature of the sport may contribute to this emphasis.

Similarly, only in one dyad do universality (target) scores differ by more than 20% for both positive and negative outcomes. For positive outcomes the tendency for coaches’ scores to be more personal to the target than those of the performers may reflect the coaches’ greater ability to contrast their performer’s behaviours and responses to situations with those of other athletes and, hence, identify peculiarities, than that of performers. This may reflect a form of other-serving bias in that the coach may be attributing positive outcomes to unique or unusual
qualities of their athletes. This pattern and difference between coaches' and performers' scores is not apparent for negative outcomes. This, again, may help to *protect* the athlete (the most frequent target) in that negative performance is attributed to factors common across others athletes or circumstances.

*Summary of individual dyad data.* Collectively, what does the above information say about the potential compatibility, or otherwise, of individual dyads? From Table 45 it is apparent that all dyads differ on a number of dimension scores, despite apparently effective, long-standing working relationships. It seems that these dyads are able to withstand differences in their respective attribution patterns. However, it is noted that the dyads in this study were more often similar in their attribution patterns. Future research will need to determine the relative significance of differences in specific attribution dimensions and their effects on the working relationships.

It does appear that the saliency of the outcome may not be a critical factor in dimension score differences. Dyad members differ across a range of dimensions and outcomes. This reinforces the need for coaches to be aware that potential for incompatibility and, in extreme cases, conflict may be present following successes as well as relative failures.

*Key considerations*

With the consideration of the SAT perspectives it is no longer a case of simply comparing whether actors and observers offer attributions of similar dimensional qualities. One needs to take account of the agents and targets being selected by each speaker and consider certain dimensions (here, locus of causality, controllability and universality) from each of these perspectives.

Another important question is the extent to which *difference* equals incompatibility, and whether, even when incompatible, conflict is likely to ensue. Whilst there are some dimensional differences in the current study, there is little in the group data presented to suggest likely incompatibility, either in the log data collection stage or that of the interviews.
Strengths and weaknesses of this study

The current study has allowed the attributions made by coaches and their performers to be collected from verbally communicated dialogue in an interview setting. Whilst it may be argued that this is not a natural setting, in that within interviews the focus was explicitly on causation, it has certain advantages over many of the more frequently used questionnaire designs:

- The events for which attributions are made are real sporting events of significance to both the coach and performer. This allows meaningful actor-observer differences to be studied.
- The longitudinal nature of the study has allowed attributions to be collated across all phases of the training and competition programme.
- The participants' own language (as recorded in the interviews) has been used; this allows for participants' emphases, in terms of the number of times a cause-effect relation is cited and participants' own choice of words, to be reflected in the analyses.

This approach has also stressed the importance of considering both the outcome saliency (although here identified from the contextual material by the researcher) and the attribution from the varied perspectives of speaker, agent and target and not, as has often been the case in the past, only from the perspective of the attributor.

Interview analyses are based on placing attributions into the following categories: positive, neutral, or negative perceptions (coded by researcher), whereas log analyses are based on respondents' perceived success (on a 5-point scale), divided by the researcher into groups for those scoring 1 (totally satisfied) and 2-5 (less than totally satisfied). Furthermore, whilst the log data represent composite scores for attributional statements that may contain a number of attributional elements and, hence, when averaged may give a dimension score which is neutral, i.e., numerically scores zero, the interview data represent scores for each discrete attribution (element) of either (plus) one or zero on each dimension. Future research will need to develop a method of coding that both reflects the meanings and perceptions of the sample within the data-set and allows comparison with previous findings.
Where differences are evident between data collected through the logs and interviews, this may be due to the passage of time; that is, respondents' causal beliefs may change over the 3-4 week period preceding the interviews. Alternatively, the mode of data collection itself may have influenced the data and subsequent findings. The opportunity for free flow speech in the interviews, offering as it does a different and more familiar medium, may result in other causal factors being included in the causal statements made. Future research could use interview techniques, both immediately after events and during follow-up data collection, to avoid potentially confounding the data.

Summary
In this chapter coach and performer attributions made in discourse (interviews) explaining real sporting events they experienced were contrasted with logbook attributions made by the same participants soon after these events. Key findings included the following. Where directly comparable, group data suggest that coaches' and performers' dimension scores are more similar than dissimilar. Where coach-performer differences occur, this may largely be accounted for by the differential recruitment of specific agents and targets. Specifically, whilst performers mainly focus on themselves as both agents and targets, coaches offer a wider range, including themselves, both as agents and targets, than do performers. In relation to stability, there appears a self-serving bias for both coaches and performers in both the log and interview data. Although coaches and performers offer attributions largely internal to the agent, performers' attributions are more internal to themselves following a poor performance. Especially in interviews, coaches and performers offer a surprisingly large percentage of uncontrollable causes, a phenomenon that may require further investigation. Although notable dimension differences are apparent in most individual dyads' data, these appear to be accommodated within the established relationships. Coach-performer, group-individual dyad, and logbook-interview differences suggest future researchers will have to be sensitive in their measurement of attributions. These results have been used to discuss a number of methodological issues relating to the LACS. The final chapter will consider the various findings of studies 1-3 and examine their implications for future research. In so doing, issues of method and, in particular, data collection and analysis, will be summarised.
Chapter 6. Discussion and Conclusions

This chapter will draw together the key findings from studies 1-3 and evaluate the implications of these both for future research and practitioners. In order to achieve this, and discuss issues of method, a summary of key findings is shown in Table 47.
Key findings

Table 47: Studies 1, 2 & 3.

<table>
<thead>
<tr>
<th>Key findings:</th>
<th>Actor-observer differences</th>
<th>Compatibility</th>
<th>Self-/other-serving biases</th>
<th>Rejeski's model</th>
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<tr>
<td><strong>Study 1</strong></td>
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<td>Participants: Coaches (n=18)</td>
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<tr>
<td>Data collection: questionnaire eliciting attributions &amp; emotions following events involving their performers</td>
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<tr>
<td>- Coaches focussed on transient causes largely internal to the athlete, unstable and often uncontrollable by the athlete</td>
<td>N/A</td>
<td>N/A</td>
<td>Little can be derived regarding self and other serving biases</td>
<td>Possible implications for when conflict may be most damaging; expected, satisfying events result in strongest attributions, therefore, where conflict exists, may be most serious under these conditions</td>
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<tr>
<td>- Highly satisfied coaches tend to make stronger attributions than less satisfied ones</td>
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<td>- Less surprised coaches offer stronger attributions than surprised ones</td>
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<tr>
<td>- Large number of attribution-emotion correlations &gt;0.6, especially for less satisfied coaches and more surprised coaches</td>
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**Study 2**

**Participants:** Coaches (n=5) & Performers (n=8)

**Data collection:** log sheets eliciting close-to-event open response attributions for ‘real’ events

- Attributions (coaches and performers) largely internal to the athlete
- Significant differences found between coach and performer groups on locus of causality and globality (coaches offer causes relatively more external to the athlete and more global)
- Coaches’ ‘successful’ outcomes were more stable and universal than less successful ones
- Performers’ ‘successful’ outcomes were less internal to the athlete, more stable, controllable and specific than less successful ones
- Event importance affects coaches’ locus, stability, universality and globality scores (‘important’ events more external to the athlete, stable, specific and universal); no such differences for performers
- Few differences on controllability
- Both coaches and performers see events as largely universal; coaches select more universal attributions when important and successful
- Coaches and especially performers tend to select specific causes; for performers especially when successful, for coaches especially when important
- Successful, and especially important, events offer most potential for conflict (re: locus of causality)
- Locus of causality appears to be the key dimension in terms of potential conflict

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<thead>
<tr>
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<th>Compatibility</th>
<th>Self-/other-serving biases</th>
<th>Rejeski’s model</th>
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<tbody>
<tr>
<td>Some evidence of actor-observer differences (locus of causality). Perceived success and importance may affect this difference. The nature of the sport and the fact that most outcomes were training events may affect the universality scores.</td>
<td>Largely compatible in this sample, but some evidence of potential incompatibility on locus of causality and globality dimensions.</td>
<td>Mixed findings. Some evidence of opposite of self-serving bias (re: locus of causality) and self-serving bias (re: stability and controllability) for performers; also evidence of self/performer-serving bias for coaches (re: stability). Again, task importance may influence these trends (esp. for coaches).</td>
<td>Insider-outsider differences may be especially relevant even when both dyad members know each other well.</td>
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</table>
**Study 3**  
**Participants:** Coaches (n=5) & Performers (n=8)  
**Data collection:** verbatim transcripts of interviews (3-4 weeks post event) concerning same events as Study 2, coded using the LACS

- Both groups select the athlete as the primary agent and target  
- Some difference in use of other agents and targets  
- Group stability scores compatible and consistent with log data  
- Group globality scores compatible and consistent with log data  
- Locus (SAT) broadly compatible and consistent with log data  
- Control (speaker) generally uncontrollable for both coaches (esp. positive & negative outcomes) and performers  
- Control (agent) evenly split for both coaches and performers  
- Control (target) generally uncontrollable by target (esp. performers)  
- Universality (speaker) scores universal for coaches, evenly distributed for performers  
- Coaches and performers offer attributions personal to the agent  
- For negative and neutral outcomes coaches and performers agree on universal (target); coaches more personal and performers more universal for positive outcomes  
- Differences in dyads’ use of agents and targets  
- All dyads have some dimension differences, but no pattern  
- Fewest within-dyad differences from perspective of the agent  
- Least differences on control (agent)  
- Members of three dyads differ on stability for positive and negative outcomes  
- Members of dyads differ on locus of causality-speaker (7 dyads) and locus of causality-target (3 dyads)  
- Few coaches appear to perceive control (speaker or target) over

<table>
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<tr>
<td>Limited actor-observer differences in selection of agents and targets. In relation to dimension scores, largely similar. There is a need to take into account the perceived success and importance. At the individual dyad level, some actor-observer differences across outcome categories. Compatibility differs by dimension. Need to take account of SAT to make sense of locus of causality, controllability and universality compatibility.</td>
<td>Largely compatible. Some dimension differences across outcomes. At issue is whether differences equate to lack of compatibility. Raises the question: Are some dimension differences of greater significance to intra-dyad compatibility?</td>
<td>It appears that dimension patterns are generally consistent between log and interview data, contrary to Burger's (1986) contention that self-serving biases develop over time.</td>
<td>Raises questions concerning Rejeski's model e.g., to what extent can the coach-performer relationship be classed as one of actor-observer? Does attributional conflict lead to stated aftereffects? Under which conditions does attributional conflict occur in the coach-performer relationship (more differences may not result in 'conflict')?</td>
</tr>
</tbody>
</table>
- Positive or negative outcomes
- Few significant differences on universality (speaker and target)
Considering the findings summarised in Table 47, a number of key themes will now be discussed and conclusions for future research and practitioners made.

**The contribution of attribution theory to understanding coach-performer relationships**

The coach-performer relationship has been studied from a number of diverse theoretical perspectives (e.g., Carron, 1978; Chelladurai, 1984). An understanding of the belief structures of these dyadic members (i.e., the way they explain significant events in their shared sporting lives) and the degree of compatibility within dyads seems pertinent to understanding these relationships. To date, research considering such an understanding has been very limited. Whilst attribution theory has considered the attributions made by sports performers (e.g., Santamaria & Furst, 1994; Biddle & Hill, 1992a), the methods used have been limited; such studies have not included the attributions made by performers' coaches. Given the significance of this relationship to performance (e.g., in terms of event and training planning, strategy development, team selection, performance goal-setting), this seems a considerable omission. A very limited number of attribution theories have been used to study participants in sport. Most research has drawn on the work of Weiner and colleagues (e.g., Bird et al., 1980; Biddle & Hill, 1992a, 1992b). Whilst Weiner's theories of attribution and affect (1979, 1985) were devised to explain the consequences of success and failure in achievement settings, it may prove valuable to explore attribution models for explaining interpersonal events.

The current research, in line with suggestions made by previous researchers (e.g., Hanrahan, 1995; Stratton, 1991), has focussed on causal dimensions. That is, causal statements or elements within them have been coded according to their dimensional qualities and these have been considered in relation to affect (Study 1) and interpersonal compatibility (Studies 2 & 3). However, the focus of previous research has been narrow, in part because of the tendency to consider a limited number of dimensions, but also because of often limiting the consideration of these dimensions to the perspective of the attribution maker.\footnote{It is acknowledged that Russell (1982) and subsequently McAuley et al. (1992) considered 'control' from the perspectives of the self and others.}
would seem appropriate when considering interpersonal relations such as those between coaches and performers in sport settings to broaden this approach at least to encompass causal dimensions from the perspective of the dyadic partner and, arguably, others in the social setting.

Attribution theory considers attributors to be naïve psychologists, laypeople making attributions to better understand and control their worlds (Heider, 1958). Considering the coaching process, it could be argued that coaches are professional attributors, the very role requiring them to explain behaviour and control as many performance-related variables as possible in order to aid performance. It has been argued elsewhere that attributors utilise heuristics (Fiske & Taylor, 1984) and attempt to explain events within particular contexts (McGill, 1989) in order to simplify the attribution-making process. Future research in sport, and in relation to potential coach-performer differences in particular, will need to explore which contextual backgrounds are selected and by what processes coaches and performers reach explanations for sport outcomes.

**Attribution-affect associations**

From the current studies it seems clear that coaches and performers undertake attributional activity following performers' sporting outcomes and that, in the case of coaches, these are associated with a number of emotions (see Study 1 and Biddle & Hill, 1992a). Whilst contemporary attribution research has moved beyond mere consideration of the objective outcome to embrace perceived success, it may be necessary to incorporate a more sensitive gradation of success. Evidence exists (e.g., Milech & Nesdale, 1984) that some previously found attribution-emotion associations may operate differentially according to level of individually perceived success.

Milech and Nesdale (1984) examined the associations between degrees of perceived success, affect and patterns of attribution by systematically varying the perceived success over five levels. They found that, whilst affect appeared to be related to degree of perceived success in a linear fashion and attributions for relatively unsuccessful outcomes (10, 30, 50 percent success) were similar, attributions made by successful subjects (70 to 90 percent) were quite distinct.
Whilst the current studies employed a median split to create relative perceived 'successful' and 'less successful' groups, future studies will need to examine the perceptions of success more closely. It may also be necessary to consider the interaction of relative perceived success and task importance, since both may affect the attributions made, although this effect may not be uniform across actors (performers) and observers (coaches).

The mechanisms by which attribution-emotion associations operate also needs further study. In doing so, researchers will need to consider whether the comments by Russell and McAuley (1986), that in real life situations attributions may be less influential in affect-making than previously proposed, are justified. Indeed, in terms of facilitating interventions to maintain effectively working coach-performer dyads, it may prove beneficial for researchers to consider where emphasis should be placed (e.g., on addressing attributional divergence or emotional divergence).

**Actor-observer differences**
In sport psychology most attribution research has operated at the intra-personal level (Biddle et al., 2001). Little research has focused at the interpersonal level and none, to the author’s knowledge, at the inter-group or societal levels (Doise, 1986). There is clear scope for further exploration of behaviour in sport, both in relation to competition (and training) outcomes and the dynamics of interpersonal interactions within sport environments.

For example, an issue of relevance to sport attribution style research is that it may operate not at the domain, but at a sub-domain, specific level. Thus, within the domain of sport, attributions for interpersonal relations may be of interest in addition to achievement attribution patterns. For example, Alloy, Abramson, Metalsky, and Hartlage (1988) have pointed out that for some learned helpless individuals the main concern may be in the interpersonal arena, not in achievement outcomes. Given the specific dynamics of sports teams and the public arena in which they operate, interpersonal relations and attributional (interpersonal) styles within sport may be worthy of future study.
Rejeski's model of attributional conflict

Rejeski's (1979) model of attributional conflict in sport has been utilized in order to consider the conditions that may lead to attributional conflict and the subsequent consequences that may follow. Although this approach, based on Jones and Nisbett's (1972) divergent perspectives model, is not tested explicitly within the current research, a number of its propositions are considered here.

Antecedents

Rejeski's model of attributional divergence has a number of advantages as a framework within which to consider coach-performer attributions. It considers a number of antecedent conditions that may influence the likelihood of attributional divergence. These include individual differences, both perceptual and motivational, and situational factors, such as goal achievement and level of involvement. It should be noted that subsequent research has identified a number of individual differences variables that may need to be considered within such a framework, such as attributional style (Metalsky & Abramson, 1981; Hanrahan & Grove, 1990a), attributional complexity (Fletcher et al., 1986) and individual differences in the selection of causal backgrounds (McGill, 1989).

A useful area for future research is the exploration of conditions under which certain causal backgrounds are selected over alternatives. For this purpose it might be helpful to consider the distinction Hesslow (1983) makes between the types of comparisons available to the attributor: comparison of the to-be-explained event with the statistically normal; comparison to the temporarily normal; comparison to the subjectively expected; comparison to the theoretical ideal; and comparison to the moral ideal.

However, prior expectations held by coach and performer and their impact on the attribution-emotion relationship may also be of future research interest. For example, if an outcome is considered to be fair (by coach and/or performer), in the sense of being deserved, will causal analysis differ from analyses following similar outcomes felt unfair? Some recent research suggests that expectations and prior beliefs affect the influence of attributional analysis on subsequent emotions (Lupfer et al., 1998).
The current research suggests that a number of qualifications may be necessary in order to utilise Rejeski's model for studying long-standing coach-performer relationships. The model, based as it is on the divergent perspectives theory of Jones and Nisbett (1972), has the performer assuming the role of actor and the coach that of observer. Subsequent research (e.g., Monson & Snyder, 1977; Luginbuhl & Bell, 1989) has suggested that the proposed conflict that may result from divergent attributions may be subject to a number of mediating factors. Of critical relevance in the current research is consideration of the extent to which the coach may be considered an observer; that is, the extent to which the role of coach affords the incumbent access to sport and performer experience not afforded other (passive) observers and the coach's influence on, and investment in, the performer's outcomes.

Coaches in the current studies, like most coaches, had considerable prior experience in the sport they coached. Furthermore, they had been coaching their respective athletes for some time. Given the focus on the individual that characterises track and field, it seems reasonable to assume that these coaches have considerable historical information regarding their performers and, with their prior experience, may well be able to empathise with some of their experiences in sport. Prior research has found that many actor-observer differences may be reversed when the observer is active, ego-involved and able to empathise with the actor (Brawley, 1984; Chen et al., 1988; Luginbuhl & Bell, 1989). Certainly, the current results indicate greater similarities in attributions than differences. This may, in part, be a function of the nature of the sport of track and field athletics and the closeness of these coach-performer relationships. Future studies will need to consider the specific nature of the relationship between coach and performer in a variety of sports and the opportunity these particular sports offer for direct coach involvement in performer outcomes (as well as the participants' perceptions of this). The coach may be considered an active observer (Ross & Sicoly, 1979; Brawley, 1984); therefore, some of Jones and Nisbett's (1972) and Bem's (1972) actor-observer differences may be less pertinent than suggested by Rejeski (1979). The research of Burger and Rodman (1983), who considered the perceptions of co-workers collaborating on a jointly
executed task, might be helpful in distinguishing features of the coach-performer relationship from those of the actor-observer.

It would appear from the current research that attributional differences do exist within long-standing coach-performer dyads whose members appear, based on interview data, to work well together. Within such relationships the proposed mechanisms by which attributional divergence may occur need further consideration: it is suggested here that, whilst insider-outsider differences can be expected, intimate-stranger and self-other differences (Bem, 1972) may be less influential. Future research needs to explore these mechanisms in relation to long-standing coach-performer relationships.

One further consideration for future research is the potential influence of the speaker's and target's sex on attribution-making. Hansen and O'Leary's (1983) demonstration that attributors of both sexes rely more heavily on personal factors when explaining women's behaviour, and more heavily on situational factors when explaining the same behaviour of men across a range of behavioural action, highlights the need to consider sex as a possible mediator of the actor-observer difference. Although not considered in the present research, behavioural expectancy (Jones & McGillis, 1976) based on sex and its potential influence on attributions will need incorporating within future research designs.

A variety of self- and other-serving biases within the attribution-making process has been suggested (Millar & Ross, 1975; Ross & Sicoly, 1979; Taylor & Doria, 1981; Taylor et al., 1983; Brawley, 1984). For example, research with sport participants has shown the existence of egocentric biases in responsibility taking attributions in both coaches and performers (Brawley, 1984) and the presence of group-serving biases being associated with cohesion maintenance (Taylor et al., 1983). The present research offers mixed findings. Certainly, there appears little support for Burger's (1986) suggestion that the self-serving bias develops over time (from event). However, a large number of the outcomes in the current research pertain to training events. Therefore, it seems appropriate to explore this contention further in relation to real competitive events of some importance to the coach and performer. Furthermore, Millar and Ross's (1975) proposal that the
tendency to self-enhance is stronger than the tendency to self-protect may also need further consideration, especially in situations where outcomes may be related to future desired goals, such as selection or continuation of contract (in professional sports). If such a tendency is found to exist researchers will need to identify the mechanisms (motivational and/or informational) by which it operates and the extent to which it may be harmful to dyadic or group relations. Future research should also consider the extent to which coaches' attributions reflect self-serving versus performer-serving biases and the extent to which these may co-exist.

Consequences
Rejeski's model also attempts to explain how attributional conflict may impact on various affective, motivational and behavioural consequences, and their subsequent influence as future antecedents. What is not clear from the model is the relative contribution to interpersonal conflict of attributional divergence, as opposed to its various effects and aftereffects (e.g., differences in views on future training and competition behaviour, or differences in emotional reactions to outcomes). This may be of significance to those attempting conflict resolution or the development of group cohesion, i.e., the applied sport psychologist or team-manager. The relative contribution of attributional differences per se, and the affective and behavioural consequences of them to potential interpersonal conflict, have been given little attention within the sport psychology literature.

Potential for conflict and of attributional interventions
Future research activity will need to explore the possible interventions that can serve to reduce any damaging effects of attributional divergence where it exists. The current findings indicate that positive outcomes may lead to more attributional differences than negative outcomes. Not considered directly in the current research, factors that may mediate or even nullify the effects of attributional divergence may need to be examined in future studies. For example, where effective and regular communication between coaches and performers exists, e.g., in discussing past events and jointly setting goals for future training and competition programmes, the effects of attributional differences may, less often, lead to detriments in the functioning of the relationship. There is, therefore,
a need to distinguish more clearly the terms and consequences of attributional divergence, attributional conflict, and the broader conflict brought about by, but not the only consequence of, differences in causal beliefs.

However, despite Fösterling's (1985, p.509) claim that "it can be concluded ... that attribution retraining methods have been consistently successful in increasing persistence and performance", and findings of recent studies in physical activity settings appearing to support this claim (e.g., Sinnott & Biddle, 1998), the degree to which this approach might be effective in a naturally occurring environment, e.g., repeated failure in a sport, is less certain. There is a need to consider further the length of time over which outcomes (e.g., failures) occurs, the severity of this perceived failure, its perceived importance, the presence of public recognition of it and the involvement of others in the task. However, this is clearly an important issue highly relevant in an on-going coach-performer relationship, where both dyadic members may make dysfunctional attributions.

Where considered, the emphasis of attribution training research in sport has been on the impact of attribution change on task performance, although Sinnott and Biddle (1998) did consider its effects on intrinsic motivation. Given the use of attribution training in interpersonal therapy settings (see Munton et al., 1999, Chapter 3), it may prove a valuable framework for researching conflict in interpersonal relationships in sport (e.g., the coach-performer relationship).

Whilst many studies using attribution theory suggest that negative outcomes, especially when unexpected and of importance to the attributor, offer the greatest potential for attributional activity (Weiner, 1985, 1986; Biddle and Hill, 1992a), it appears from the current findings that perceived positive outcomes may offer at least as much potential for attributional differences as perceived negative ones. Intuitively, one might expect the greatest application of cognitive interventions, such as attribution training, to occur following disappointing or negative outcomes. However, if the current findings are replicated in future studies, sports psychologists and coaches will need to be aware of the potential for attributional conflict following perceived success.
Coach-performer relationships in context
As the dearth of research into the coach-performer relationship is addressed, researchers will need to be sensitive to those environmental and personal factors that impact upon it. For example, it has been suggested that individual agency is stressed in Western societies to a greater degree than in those of the East (Ybarra & Stephan, 1999). If this is the case, researchers considering attributions within the coach-performer relationship must be cognisant of the cultural context in which participants operate. This may be particularly important now that professional coaches and performers in sport move readily between countries and cultures. The study of attributions made by coaches and performers operating out of their cultural norm may prove particularly rewarding.

Methodological considerations and limitations

Limitations of previous approaches
As already noted, little has been reported concerning the attributions made by significant others in sport (Biddle, 1993). Furthermore, there has been a tendency in sport psychology to adopt questionnaire approaches when exploring (mainly) performers’ attributions (Biddle et al., 2001). Despite the advantages of employing certain questionnaires in attribution research (e.g., Sport Attributional Style Scale; Hanrahan et al., 1989; Causal Dimension Scale II; McAuley et al., 1992), significant disadvantages include the forced nature of attribution elicitation and the detachment of attributions from their causal context, i.e., the participant responds to questions or settings which are of interest to the researcher and which are often hypothetical. Perhaps of most significance, the use of questionnaires implies that the participant reaches a causal conclusion in isolation, i.e., a "private cognition" (Munton et al., 1999, p.30), and that the purpose of the questionnaire is to expose these conclusions to the researcher. Despite the use of interview techniques to explore attributions in clinical, therapeutic and market research settings, the use of interview methods for assessing attributions in sport has not been reported in the literature to this author’s knowledge. Similarly, the use of discourse analysis appears unpublished in the sport and exercise attribution literature.
Discussion and Conclusions

Participants
The participants in the current studies were all coaches and performers (track and field only in Studies 2 & 3) working in well-established dyads. It may be that the nature of the sports (e.g., individual sport, objectively measured outcomes, and heavy emphasis on physical fitness for Studies 2 & 3) and the closeness of the existing relationships resulted in data quite different from that of studies incorporating other sports and relationships of different lengths and ways of working (e.g., regularity of contact, nature of training environment). Certainly, future coach-performer attribution studies should consider measuring the nature of the existing relationships of its participants using a variety of measures (e.g., interpersonal relations and need areas, Schutz, 1966; task and social coherence, Widmeyer, Brawley, & Carron, 1985). The nature of attributions elicited can then be set against such background information.

Data collection: use of ‘natural’ discourse
If one starts from the premise that reality is constructed by individuals within the social worlds they inhabit, then the purpose of research is to negotiate ways of understanding (Stratton, 1997). Grounded Theory requires that data processing be conducted in accordance with specifically defined procedures, with data selection and expression grounded by the data it portrays. Such an approach minimises the likelihood of data distortion. The value of this approach, therefore, is that it attempts to “build theory that is faithful to and illuminates the area under study” (Strauss & Corbin, 1990, p.24), although Bryman (1988) suggests that what is produced is more akin to generating categories rather than theories per se. As such, this approach requires inductive processes in which the generation of rich data is crucial. Thus, this approach is usually associated with qualitative methods of data collection (Strauss & Corbin, 1990).

The present research combines both questionnaire and interview data collection methods. The use of the log allowed coaches and performers to record attributions immediately after an event. This approach tended to produce multi-causal explanations for the level of goal-achievement associated with events. However, this approach obviously relies on making written responses in the log. It may be argued that the use of this written medium potentially simplifies the
explanations offered, in the sense of producing discrete causal statements as opposed to producing inter-linked causal elements more common in speech. The interviews, although utilising the medium of speech, were subject to a time delay, sometimes of several weeks. Future research should consider the use of video- or audio-diaries accompanied by appropriate generic guidance for participants to follow. The use of verbal speech in the collecting of immediate post-event diary data would have allowed the contrasts with subsequent interview data to be made with greater validity.

Whilst conversational approaches to attribution research have been employed by some researchers in non-sports settings (e.g., Antaki & Naji, 1987; Hammer & Ruscher, 1997), and the conclusion drawn that conversation is an important source of attribution information (Burleson, 1986), there are also some notes of caution for the attribution researcher. Hewstone (1989), for example, notes that conversation is partially guided by conventions and that explanations to another can serve a number of functions. One should, therefore, be mindful that the spoken word might not necessarily reflect purely the causal thought behind it.

However, Hammer and Ruscher (1997) provide an example of conversational analyses used in attribution research that may prove beneficial for future attribution researchers in sport. They considered the evocation of situational and dispositional attributions in the context of unstructured dyadic conversations. Consideration was made of the recently developed stage models whereby dispositional explanations for actions are invoked first and correction for situational variables occur later, especially in the case of unexpected outcomes, which take up much cognitive energy. An interesting alternative model is one in which attributors develop causal chains or stories in order to deal with multiple causality (Lamb & Lalljee, 1992). Such models allow temporal sequencing of dispositional and situational factors that might affect subsequent outcomes.

Hammer and Ruscher's study, unlike most before it, considers the inter-subject process of two attributors working together to explain an event and explores the processes shared by the attributors, e.g., using their partner to confirm the accuracy of their inferences (Ruscher & Hammer, 1994). The dependent variable
in this study was the discussion time allocation and a number of additional features between dyadic attributors were expected. For example, in dyads, time is spent asking questions of one's partner in order to take advantage of the other's cognitive processes, as well as to confirm one's own. Such questioning increases with the unexpectedness of the outcome (Ruscher & Hanuner, 1994). Secondly, freewheeling may occur, whereby one individual elaborates on the idea of another; this is especially likely to occur when the optimal explanation is not yet apparent (Hammer & Ruscher, 1997).

Results revealed dyads considering dispositionally unexpected outcomes spontaneously generated situational and narrative explanations. When receiving an unexpected outcome, dyads allocated more discussion time to situational factors, identified more original situational factors and constructed more narrative explanations than for expected outcomes. Through freewheeling and questioning, dyadic members were able to draw on each other's memories and inference patterns. Where an outcome was expected (based on prior information provided by the researcher), dispositional explanations often sufficed; where unexpected, situational factors were also considered. Furthermore, causal narratives emerged for unexpected outcomes. Multiple causal factors were incorporated into a causal explanation where a single cause proved inadequate, although the authors note the processes by which this occurs need further exploration. Furthermore, such a design may not mirror processes operating in purely naturalistic settings.

This represents one of very few attempts at considering spontaneous attributions in a dyadic situation. Hammer and Ruscher conclude with a call for further similar studies: “Clearly, it is time that we study naïve scientists as they converse with their colleagues” (1997, p.357).

In the light of these recent developments in utilising alternative and complementary data collection methods in other psychology disciplines (e.g., interpersonal therapy), and the limitations of using questionnaire-only approaches to attribution research (Munton et al., 1999), a number of authors (e.g., Biddle & Hanrahan, 1998) have called for a greater diversity of exploratory methods used in sport psychology. In sports environments, this has obvious advantages when
considering social settings, such as team meetings, coach-performer interactions, media interviews and post-event analysis.

In the present research an attribution framework was adopted with both quantitative and qualitative data collection and analysis methods used to explore coaches’ and performers’ attributions. Such an approach seems particularly germane when examining attributions made in interpersonal, natural settings. Stratton and colleagues’ (Stratton et al., 1988) development of the Leeds Attributional Coding System to expose causal beliefs within the context of qualitative raw material, whilst rendering the data open to quantitative analysis, has proved a valuable addition to the methods previously available.

From undertaking the current research, the collection and analysis of interview data has had numerous benefits. For example:

for the researcher:
- contextual information can be noted and incorporated to enhance clarification and meaning
- the approach allows emphasis to be dictated by the participant (interviewee)
- it allows some contrast to be made with the attributions collected using questionnaires (log sheets) completed only a short time after the events

for participants:
- the research utilises a medium (verbal speech) with which they are familiar
- interviews allow use of their own language style and a pace largely determined by them.

However, such an approach is not without difficulties, for example:
- consideration needs to be given to the surroundings in which interviews are conducted; whilst an environment in which the participant feels comfortable is desirable, noise can cause interruptions and make transcribing difficult
- data collection and analysis is time-consuming
- care needs to be taken not to lead participants towards preconceived causes.

This can be achieved by ensuring the use of generic prompts and open
questions, but primarily by allowing the interviewee to discuss the outcomes and their causes as they feel appropriate

- there remains a problem of validity in relation to dimensions coding, e.g., the danger of making the fundamental attribution research error
- the frequency of interviews, which in the present study was affected by distances involved in data collection and time available, can be a limiting factor.

In addition to considering the methods for collecting attribution data, the selection, measurement and labelling of specific dimensions may need further consideration. For example, the often expressed view of the internal-external dimension operating in a hydraulic fashion needs clarification; some researchers (e.g., Elig & Frieze, 1979) have noted the potential use of two separate rating scales for this dimension. The potential to label incorrectly a statement as, for example, internal or external when it may reflect the opposite causal belief in the speaker remains a problem of natural discourse analysis. Whilst the development of the Causal Dimension Scale (Russell, 1982; McAuley et al., 1992) has allowed respondents to dimension score their own responses and, hence, add to the validity of findings, no such checks were included in the interview design used in this study. It is possible that the researcher has unknowingly mis-represented the meanings implicit in the transcripts. Future studies will require methods that allow natural discourse to be coded and the meanings extrapolated from this coding checked by participants for accuracy.

It may be that the timing of the attribution data collection is critical in the identification of attributional divergence. Some authors (e.g., Burger & Rodman, 1983) have argued that patterns of attributions change over time-from-event. It is not possible to assess the effects on interview data of either the from-event time delay or the act of previously completing of the attribution log. In the present study there appears considerable similarity between log (near immediate post-event) and interview (up to 4 weeks post-event) data. However, some differences are evident in dimension scores between individual coaches and performers when account is taken of the agents and targets employed in the interview data. Future
research designs will need to consider when attribution data are collected, perhaps using longitudinal studies to explore attribution patterns over time. Where differences over time appear in the present research, it is impossible to discern whether this is due to the passage of time per se or as a result of different modes of data collection (log and interviews). Future studies will need to consider also the effects of such differences over time on interpersonal relations. For example, is attributional divergence immediately following an event more or less significant to coach-performer compatibility than divergence some time later, after a period of reflection? This may have implications for the timing of cognitive interventions.

Use of technology
It has been suggested previously that natural discourse provides an appropriate medium through which to assess causal beliefs. Methods of data collection in the present studies fail to ascertain the communication of attributional beliefs as conveyed in natural conversation between coach and performer. The challenge for future researchers is to devise methods that allow conversations occurring naturally in the training and competition environments to be recorded for subsequent analysis. Preliminary attempts by the author to record such discourse using portable microphones and recorders proved ineffectual. Modern technology may allow, after a period of participant desensitisation, natural dialogue before, during and after sports action to be recorded. This may ease the burden of recording pre-, during and post-event cognitions expressed in communication by allowing the more natural use of spoken language to replace written responses.

Data analysis
The studies contained within the current research have utilised methods both previously employed in sport psychology research and methods new to the field. The use of the LACS has allowed interview material to be quantified. This approach has enabled new sources of data to be explored. Important information has been gleaned concerning the agents and targets selected by individual coaches and performers when verbalising causal explanations. Furthermore, the dimensional qualities of causal statements have been assessed in relation not only to the speaker, but also in relation to the agent and target. It is this researcher’s
belief that such an approach is essential if the potential for attributional conflict is to be identified.

With regard to contrasting log and interview data, in Study 2 log sheets require a response to a specific question of causation for each outcome. Hence, it is felt legitimate and appropriate to collapse causal elements’ dimension scores, since each element relates to a specific and stated outcome. However, in Study 3, interviews are more open-ended, allowing respondents to discuss cause-effect relationships as they feel appropriate (although each interview relates to a specified set of performance outcomes). Hence, each causal statement is treated in the analysis as a discrete set of dimension scores.

A major argument for collecting attribution data relating to naturally occurring events and using methods more analogous to real life interactions is that it increases the validity of the findings. However, in the present research, attributions were coded by the researcher, albeit taking account of contextual information contained within the text. Researchers using such approaches in the future will need to consider how to increase the confidence with which dimension coding is performed, vis-à-vis reflecting the speaker’s causal beliefs. This may be possible by refining the interview methods or including post-interview dimension checks.

Data at the group and individual dyad level

Whilst the group data reported in the present studies are informative and allow group means to be contrasted, where conflict occurs it will be at the individual dyad level. Group data alone may mask differences in individual dyad compatibility. Individual dyads in the present research do appear to differ on a number of attribution dimensions, both for positive and negative outcomes. Future research may need to establish which specific dimension, if any, is most significant in terms of attributional conflict. This may require the explicit study of dyads known to be experiencing conflict in terms of their causal beliefs.
Conclusions
The psychology of the coach-performer relationship is only partially understood. The present research has begun to address questions surrounding coach-performer attributional compatibility. It appears that attributions made by coaches are associated with their emotions and that these attributions, following sports outcomes involving their performers, may differ from those of their performers. However, these differences are not uniform across circumstances, e.g., such differences appear more likely following positive outcomes than negative ones. It is suggested that future studies utilise a range of qualitative and quantitative methods to understand better coaches’ and performers’ attributions for achievement and interpersonal outcomes.

These findings, if supported by future studies, have implications for those attempting to maintain effective coach-performer relationships. Whilst stating the limitations of this research, the benefits of the methods used (and particularly the use of the LACS) have been highlighted. Furthermore, a number of suggestions have been made for future research in order to clarify the features of this relationship in sport. Corollaries to Rejeski’s (1979) model of attributional conflict are made to assist this process.

There remains much potential for researching the interpersonal relationships of coach-performer dyads, both within individual and team sports.
References


Appendix 1

The Sports Coach Questionnaire
The following questionnaire forms part of an investigation into perceptions in sport. All the information is collected in confidence; there is no need for you to put your name or that of your performer on the questionnaire.

Please take the questionnaire away and complete it immediately after the next competition you attend in which your performer takes part.

If your sport is a team sport, please answer the questions in relation to the team (the team’s performance etc.) rather than the individuals within it.

Thank you for co-operating in this project.

Please circle as appropriate:

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>31-40</th>
<th>41-50</th>
<th>51-60</th>
<th>Above 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male</td>
<td>Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is your sport a:</td>
<td>Team sport</td>
<td>Individual sport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is your sport?</td>
<td>-----------------</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For this sporting event, please circle the appropriate number:

Importance of *winning*:

<table>
<thead>
<tr>
<th>Very important</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Not at all Important</th>
</tr>
</thead>
</table>

Importance of *performing well*:

<table>
<thead>
<tr>
<th>Very important</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Not at all Important</th>
</tr>
</thead>
</table>
Please answer all of the following questions immediately after the event; do so by ringing the number that most accurately describes your current feelings:

How pleased are you?

Pleased  
5  4  3  2  1  Displeased

How satisfied are you?

Satisfied  
5  4  3  2  1  Dissatisfied

How happy are you?

Happy  
5  4  3  2  1  Unhappy

How contented are you?

Contented  
5  4  3  2  1  Discontented

How competent do you feel?

Competent  
5  4  3  2  1  Incompetent

How good do you feel?

Good  
5  4  3  2  1  Bad

How confident do you feel?

Confident  
5  4  3  2  1  Unconfident

How proud do you feel?

Proud  
5  4  3  2  1  Shameful

How relaxed are you?

Relaxed  
5  4  3  2  1  Tense
How concerned do you feel?

Unconcerned  5  4  3  2  1  Concerned

Do you feel:

Elated?  5  4  3  2  1  Depressed?

Do you feel:

A sense of achievement?  5  4  3  2  1  A sense of frustration?

Do you feel:

Calm?  5  4  3  2  1  Angry?

For each of the following: 1= ‘Not at all’; 5= ‘Very much’

How surprised are you?  1  2  3  4  5

How disappointed are you?  1  2  3  4  5

How guilty do you feel?  1  2  3  4  5

Please also indicate your degree of satisfaction with:

Your performer’s standard of performance (that is, the way s/he played/performed)

Satisfied  1  2  3  4  5  6  Dissatisfied
There follows a list of possible explanations for both the outcome of this competition and the way the performer(s) performed. Please rate each of these for the competition you have just observed.

Was the outcome due to:

<table>
<thead>
<tr>
<th></th>
<th>Very much</th>
<th>Very</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luck</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Ability</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Effort</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Mood</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Fitness</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Previous experience</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Motivation</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Personality</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Form</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Opponent's effort</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Opponent's ability</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Opponent's factors</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>
Was the performance due to:

<table>
<thead>
<tr>
<th></th>
<th>Very much</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luck</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Ability</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Effort</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Mood</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Fitness</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Previous experience</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Motivation</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Personality</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Form</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Opponent's effort</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Opponent's ability</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Opponent’s factors</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

That completes the questionnaire. Thank you for your assistance.
Appendix 2

Log sheet
RECORD SHEET

PERFORMER'S NAME: __________________________________________

To complete BEFORE the session/competition:

Date: ________________________________________________________

Activity: ____________________________________________________

What is the main goal/objective for this event? ____________________

How important to YOU is the session or competition?
(Please circle only one)

Very important 1 2 3 4 5 Not important

To complete AFTER the session/competition:

How successful was the activity (in relation to the goal identified)?
(Please circle only one)

Total success 1 2 3 4 5 Failure

Please give YOUR explanation for this degree of success:
(i.e., the cause of this success/failure)

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

Please add any other relevant comments overleaf
Appendix 3

Differences in individual dyad members' dimension scores
### Differences in individual dyad members' dimension scores

**Table 48**  
<table>
<thead>
<tr>
<th>Dimension</th>
<th>C=1, P=2</th>
<th>Mean</th>
<th>t</th>
<th>df</th>
<th>p</th>
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</thead>
<tbody>
<tr>
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<td>0.84</td>
<td>1.32</td>
<td>46</td>
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<tr>
<td></td>
<td>2</td>
<td>0.35</td>
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<td></td>
<td></td>
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<tr>
<td>Stability</td>
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<td>0.44</td>
<td>0.87</td>
<td>46</td>
<td>0.39</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controll.</td>
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<td>0.32</td>
<td>46</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>-0.35</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Universality</td>
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<td>0.03</td>
<td>46</td>
<td>0.98</td>
</tr>
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<tr>
<td>Globality</td>
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<td>0.75</td>
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<tr>
<td></td>
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**Table 49**  
<table>
<thead>
<tr>
<th>Dimension</th>
<th>C=1, P=2</th>
<th>Mean</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
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<td>0.94</td>
<td>-0.21</td>
<td>42</td>
<td>0.83</td>
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<td></td>
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<td>1.00</td>
<td></td>
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<td></td>
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<tr>
<td>Stability</td>
<td>1</td>
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<td>0.88</td>
<td>42</td>
<td>0.39</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.62</td>
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<td></td>
<td></td>
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<tr>
<td>Controll.</td>
<td>1</td>
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<td>0.50</td>
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</tr>
<tr>
<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Globality</td>
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<td>-0.06</td>
<td>0.41</td>
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<td>-0.23</td>
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**Table 50**  
<table>
<thead>
<tr>
<th>Dimension</th>
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<th>Mean</th>
<th>t</th>
<th>df</th>
<th>p</th>
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<td>0.31</td>
<td>54</td>
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<td></td>
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<td>Stability</td>
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<td>2.02</td>
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<td>&lt;0.05</td>
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<td>-0.43</td>
<td>54</td>
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<td>-0.62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Universality</td>
<td>1</td>
<td>0.10</td>
<td>-1.76</td>
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<td>0.09</td>
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<td>0.70</td>
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<td>-0.63</td>
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<tr>
<td>Table 51</td>
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Appendix 4

Spearman's Rank Order Correlation Coefficients for dyadic compatibility scores
Tables 56-63: Spearman’s Rank Order Correlation Coefficients for dyadic compatibility scores (*r* values shown in tables)

Table 56

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Appendix 5

Dimension compatibility t-tests
Table 64  Dimension compatibility for high (success<2.00) and low (success>=2.00) success groups

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Table 65  Dimension compatibility for high (importance =1.00) and low (importance >1.00) importance groups

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Appendix 6

Dimension compatibility graphs
Coach 1/Perfomer 11 dimension log scores

a figures: x-axis represents the dimension score
b figures: x-axis represents the dimension (in)compatibility score
y-axes represent the sport event

Figure 20a

Figure 20b
Figure 21a

Stability

![Graph showing stability with different scores for Coach and Performer.]

Figure 21b

Stability

![Graph showing compatibility (difference in scores) for Coach.]

Figure 22a

Controllability

Figure 22b

Controllability

Compatibility (difference in scores)
Figure 23a

Universality

Figure 23b

Universality

Compatibility (difference in scores)
Figure 24a

Globality

- Coach
- Performer

Figure 24b

Globality

Compatibility (difference in scores)
Coach 1/Performer 12 dimension log scores

a figures: x-axis represents the dimension score
b figures: x-axis represents the dimension (in)compatibility score
y-axes represent the sport event

Figure 25a

![Locus of causality](image)

Figure 25b

![Locus of causality](image)
Figure 27a

Controllability

Figure 27b

Controllability

Compatibility (difference in scores)
Figure 29a

**Globality**

![Graph showing Globality with Coach and Performer lines]

Figure 29b

**Globality**

![Graph showing Globality with Compatibility line (difference in scores)]
Coach 2/Performer 21 dimension log scores

a figures: x-axis represents the dimension score
b figures: x-axis represents the dimension (in)compatibility score
y-axes represent the sport event

Figure 30a

Locus of causality

Figure 30b

Locus of causality

Compatibility
(difference in scores)
Figure 33a

**Universality**

- Coach
- Performer

Figure 33b

**Universality**

- Compatibility
  - (difference in scores)
Coach 3/Performer 31 dimension log scores

a figures: x-axis represents the dimension score
b figures: x-axis represents the dimension (in)compatibility score
y-axes represent the sport event

Figure 35a

Locus of causality

Figure 35b

Locus of causality

Compatibility
(difference in scores)
Figure 36a

Stability

-4 -2 0 2 4

Coach

Performer

Figure 36b

Stability

Compatibility (difference in scores)

Compatibility (difference in scores)
Figure 37a

Controllability

Coach
Performer

Figure 37b

Controllability

Compatibility
(difference in scores)
Figure 38a

Universality

Coach

Performer

Figure 38b

Universality

Compatibility (difference in scores)
Figure 39a

![Graph of Globality with two lines representing Coach and Performer]

Figure 39b

![Graph of Globality with a line representing Compatibility (difference in scores)]
Coach 3/Performer 32 dimension log scores

a figures: x-axis represents the dimension score
b figures: x-axis represents the dimension (in)compatibility score
y-axes represent the sport event

Figure 40a

![Locus of causality](image)

Figure 40b

![Locus of causality](image)
Figure 42a

Controllability

Coach
Performer

Figure 42b

Controllability

Compatibility (difference in scores)
Coach 4/Performer 41 dimension log scores

a figures: x-axis represents the dimension score
b figures: x-axis represents the dimension (in)compatibility score
y-axes represent the sport event

Figure 45a

Figure 45b
Coach 4/Performer 42 dimension log scores

a figures: x-axis represents the dimension score
b figures: x-axis represents the dimension (in)compatibility score
y-axes represent the sport event

Figure 50a

Figure 50b
Figure 51a

Figure 51b
Coach 5/Performer 51 dimension log scores

a figures: x-axis represents the dimension score
b figures: x-axis represents the dimension (in)compatibility score
y-axes represent the sport event

Figure 55a

Figure 55b
Figure 56a

![Stability graph showing two lines representing Coach and Performer with data points at intervals 6, 11, 16, 21, 26, 31, 36, 41, 46, 51.]

Figure 56b

![Stability graph showing 'Compatibility (difference in scores)' with data points at intervals 1, 6, 11, 16, 21, 26, 31, 36, 41, 46, 51.]

255
Figure 58a

Universality

Coach
Performer

Figure 58b

Universality

Compatibility
(difference in scores)
Appendix 7

The LACS coding template
LACS Coding template

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Appendix 8

Descriptive data (group)
Descriptive data for all attributions and those made by coach and performer groups

Table 66 shows the frequency of attributions made by coaches and performers and by each group per interview.

<table>
<thead>
<tr>
<th></th>
<th>Total number of attributions made/ Mean number of attributions made per interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coaches</td>
<td>815/ 23.8</td>
</tr>
<tr>
<td>Performers</td>
<td>747/ 17.8</td>
</tr>
</tbody>
</table>

Table 67 shows the saliency of the outcomes contained within attributions.

<table>
<thead>
<tr>
<th>Saliency (outcome)</th>
<th>All attributions</th>
<th>Coaches’ attributions</th>
<th>Performers’ attributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>40.6%</td>
<td>39.3%</td>
<td>42.2%</td>
</tr>
<tr>
<td>Negative</td>
<td>31.2%</td>
<td>30.9%</td>
<td>31.5%</td>
</tr>
<tr>
<td>Neutral</td>
<td>28.2%</td>
<td>29.8%</td>
<td>26.3%</td>
</tr>
</tbody>
</table>

Table 68 shows the percentage of attributions containing expressions of emotion.

<table>
<thead>
<tr>
<th>Emotion</th>
<th>All attributions</th>
<th>Coaches’ attributions</th>
<th>Performers’ attributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>8.9%</td>
<td>4.9%</td>
<td>13.5%</td>
</tr>
<tr>
<td>Negative</td>
<td>4.2%</td>
<td>2.5%</td>
<td>6.2%</td>
</tr>
<tr>
<td>No emotion</td>
<td>86.9%</td>
<td>92.6%</td>
<td>80.3%</td>
</tr>
</tbody>
</table>

Table 69 shows the percentage of attributions in which the outcome relates to specific or general (sporting) events.

<table>
<thead>
<tr>
<th>Nature of outcome</th>
<th>All attributions</th>
<th>Coaches’ attributions</th>
<th>Performers’ attributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relates to specific event</td>
<td>57.6%</td>
<td>52.5%</td>
<td>63.5%</td>
</tr>
<tr>
<td>Non-specific event</td>
<td>42.3%</td>
<td>47.5%</td>
<td>36.3%</td>
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<tr>
<td>Default</td>
<td>0.1%</td>
<td>0.0%</td>
<td>0.3%</td>
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</tbody>
</table>
Table 70 shows the percentage of attributions making reference to the speaker's dyadic partner.

**Table 70: Reference to dyadic partner**

<table>
<thead>
<tr>
<th>Reference to partner?</th>
<th>All attributions %</th>
<th>Coaches’ attributions %</th>
<th>Performers’ attributions %</th>
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<tr>
<td>Yes</td>
<td>44.7</td>
<td>79.7</td>
<td>3.9</td>
</tr>
<tr>
<td>No</td>
<td>55.5</td>
<td>20.0</td>
<td>96.1</td>
</tr>
<tr>
<td>Default</td>
<td>0.1</td>
<td>0.2</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Table 71 shows where in the annual training cycle attributions were collected.

**Table 71: Time of season in which attributions made.**

<table>
<thead>
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<th>Time of season</th>
<th>All attributions %</th>
<th>Coaches’ attributions %</th>
<th>Performers’ attributions %</th>
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<td>Training phase</td>
<td>66.2</td>
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<td>Early competitive</td>
<td>10.0</td>
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<tr>
<td>Main competitive</td>
<td>23.9</td>
<td>29.5</td>
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Appendix 9

Descriptive data (individual dyad data)
Descriptive data for individual dyads' interview transcripts

Individual dyads results

In the following tables, descriptive data are presented for each dyad, allowing contrast between individual dyad members' scores.

Profile: C1.0/P11

Table 72: Saliency

<table>
<thead>
<tr>
<th>Salience</th>
<th>C1.0 Attributions %</th>
<th>P11 Attributions %</th>
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<tbody>
<tr>
<td>Positive</td>
<td>34.7</td>
<td>37.1</td>
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<tr>
<td>Negative</td>
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<td>35.3</td>
</tr>
<tr>
<td>Neutral</td>
<td>34.7</td>
<td>27.6</td>
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</table>

Both C1 and P11 appear to attribute evenly across positive, neutral and negative outcomes.

Table 73: Emotion

<table>
<thead>
<tr>
<th>Emotion</th>
<th>C1.0 Attributions %</th>
<th>P11 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>3.5</td>
<td>11.8</td>
</tr>
<tr>
<td>Negative</td>
<td>1.7</td>
<td>8.6</td>
</tr>
<tr>
<td>No emotion</td>
<td>94.8</td>
<td>79.6</td>
</tr>
</tbody>
</table>

Performer 1 makes more attributions containing an emotional content, both positive and negative, than does Coach 1.

Table 74: Specificity of outcome

<table>
<thead>
<tr>
<th>Outcome</th>
<th>C1.0 Attributions %</th>
<th>P11 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event specific</td>
<td>52.0</td>
<td>62.4</td>
</tr>
<tr>
<td>Non-event specific</td>
<td>48.0</td>
<td>37.6</td>
</tr>
</tbody>
</table>

Performer 11 tends to make more references to specific events within attributional statements than does Coach 1, although the difference is relatively small.

Table 75: Time of season

<table>
<thead>
<tr>
<th>Time of the season</th>
<th>C1.0 Attributions %</th>
<th>P11 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of season</td>
<td>43.4</td>
<td>32.1</td>
</tr>
<tr>
<td>Early competitive</td>
<td>14.5</td>
<td>21.3</td>
</tr>
<tr>
<td>Main competitive</td>
<td>42.5</td>
<td>46.6</td>
</tr>
</tbody>
</table>

A greater percentage of Performer 11's attributions are made during the competitive season, early and main, than Coach 1.

Table 76: Reference to dyadic partner

<table>
<thead>
<tr>
<th>Reference to dyadic partner?</th>
<th>C1.0 Attributions %</th>
<th>P11 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>79.2</td>
<td>5.9</td>
</tr>
<tr>
<td>No</td>
<td>20.8</td>
<td>94.1</td>
</tr>
</tbody>
</table>

As expected, Coach 1 makes far greater reference to the performer than does the performer to the coach.
Profile: C1.1/P12

Table 77: Saliency

<table>
<thead>
<tr>
<th>Saliency</th>
<th>C1.1 Attributions %</th>
<th>P12 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>46.5</td>
<td>41.6</td>
</tr>
<tr>
<td>Negative</td>
<td>19.8</td>
<td>16.9</td>
</tr>
<tr>
<td>Neutral</td>
<td>33.7</td>
<td>41.6</td>
</tr>
</tbody>
</table>

Generally similar scores between Coach 1.1 and Performer 12.

Table 78: Emotion

<table>
<thead>
<tr>
<th>Emotion</th>
<th>C1.1 Attributions %</th>
<th>P12 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>10.5</td>
<td>3.4</td>
</tr>
<tr>
<td>Negative</td>
<td>5.8</td>
<td>2.2</td>
</tr>
<tr>
<td>No emotion</td>
<td>83.7</td>
<td>94.4</td>
</tr>
</tbody>
</table>

In contrast to C1/P11, here Performer 12 displays less emotion than Coach 1.1 in the attributional statement.

Table 79: Specificity

<table>
<thead>
<tr>
<th>Outcome</th>
<th>C1.1 Attributions %</th>
<th>P12 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event specific</td>
<td>29.1</td>
<td>78.7</td>
</tr>
<tr>
<td>Non-event specific</td>
<td>70.9</td>
<td>21.3</td>
</tr>
</tbody>
</table>

Many more of Performer 12’s attributions refer to a specific event than do those of Coach 1.1. This is contrast to the patterns of attributions made by P11.

Table 80: Time of season

<table>
<thead>
<tr>
<th>Time of the season</th>
<th>C1.1 Attributions %</th>
<th>P12 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of season</td>
<td>45.3</td>
<td>55.1</td>
</tr>
<tr>
<td>Early competitive</td>
<td>44.2</td>
<td>44.9</td>
</tr>
<tr>
<td>Main competitive</td>
<td>10.5</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Most attributions made by Coach 1.1 and Performer 12 are made either in the ‘out of season’ or ‘early competition’ phases.

Table 81: Reference to dyadic partner

<table>
<thead>
<tr>
<th>Reference to dyadic partner?</th>
<th>C1.1 Attributions %</th>
<th>P12 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>96.5</td>
<td>5.6</td>
</tr>
<tr>
<td>No</td>
<td>3.5</td>
<td>94.4</td>
</tr>
</tbody>
</table>

C1 makes even greater reference within her attributions to P12 than she does for P11. P12 makes a similarly large percentage to P11 of attributions making no reference to the coach.
Profile: C2/P21

Table 82: Saliency

<table>
<thead>
<tr>
<th>Saliency</th>
<th>C2 Attributions %</th>
<th>P21 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>18.1</td>
<td>17.9</td>
</tr>
<tr>
<td>Negative</td>
<td>44.9</td>
<td>58.2</td>
</tr>
<tr>
<td>Neutral</td>
<td>37.0</td>
<td>23.9</td>
</tr>
</tbody>
</table>

The attributions made by Coach 2 and Performer 21 refer to a similar pattern of perceived outcomes, with a large percentage of negative outcomes relative to other dyads.

Table 83: Emotion

<table>
<thead>
<tr>
<th>Emotion</th>
<th>C2 Attributions %</th>
<th>P21 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>0.0</td>
<td>10.4</td>
</tr>
<tr>
<td>Negative</td>
<td>0.0</td>
<td>11.9</td>
</tr>
<tr>
<td>No emotion</td>
<td>100.0</td>
<td>77.6</td>
</tr>
</tbody>
</table>

The attributions made by Coach 2 contain no emotional sentiment, whereas a fifth of those made by Performer 21 contain a balance of positive and negative emotion.

Table 84: Outcome

<table>
<thead>
<tr>
<th>Outcome</th>
<th>C2 Attributions %</th>
<th>P21 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event specific</td>
<td>37.8</td>
<td>41.8</td>
</tr>
<tr>
<td>Non-event specific</td>
<td>62.2</td>
<td>58.2</td>
</tr>
</tbody>
</table>

Both Coach 2 and Performer 21 make more attributions for non-event specific outcomes than for event specific ones.

Table 85: Time of season

<table>
<thead>
<tr>
<th>Time of the season</th>
<th>C2 Attributions %</th>
<th>P21 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of season</td>
<td>65.4</td>
<td>64.2</td>
</tr>
<tr>
<td>Early competitive</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Main competitive</td>
<td>34.6</td>
<td>35.8</td>
</tr>
</tbody>
</table>

There are similar numbers of attributions made by Coach 2 and Performer 21 for out of season and competitive season phases.

Table 86: Reference to dyadic partner

<table>
<thead>
<tr>
<th>Reference to dyadic partner?</th>
<th>C2 Attributions %</th>
<th>P21 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>78.0</td>
<td>9.0</td>
</tr>
<tr>
<td>No</td>
<td>22.0</td>
<td>91.0</td>
</tr>
</tbody>
</table>

Once again, the performer makes little reference to the coach, whereas approximately a fifth of Coach 2’s attributions make reference to Performer 21.
Profile: C3.0/P31

Table 87: Saliency

<table>
<thead>
<tr>
<th>Saliency</th>
<th>C3.0 Attributions %</th>
<th>P31 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>55.2</td>
<td>52.6</td>
</tr>
<tr>
<td>Negative</td>
<td>22.1</td>
<td>26.7</td>
</tr>
<tr>
<td>Neutral</td>
<td>22.7</td>
<td>20.7</td>
</tr>
</tbody>
</table>

A similar pattern exists for outcome saliency for Coach 3’s and Performer 31’s attributions.

Table 88: Emotion

<table>
<thead>
<tr>
<th>Emotion</th>
<th>C3.0 Attributions %</th>
<th>P31 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>5.5</td>
<td>16.4</td>
</tr>
<tr>
<td>Negative</td>
<td>0.0</td>
<td>2.6</td>
</tr>
<tr>
<td>No emotion</td>
<td>94.4</td>
<td>81.0</td>
</tr>
</tbody>
</table>

Despite similar outcome saliency scores, attributions made by Performer 31 contain more emotion than do those of Coach 3.

Table 89: Outcome

<table>
<thead>
<tr>
<th>Outcome</th>
<th>C3.0 Attributions %</th>
<th>P31 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event specific</td>
<td>70.6</td>
<td>50.9</td>
</tr>
<tr>
<td>Non-event specific</td>
<td>29.4</td>
<td>49.1</td>
</tr>
</tbody>
</table>

Attributions made by Coach 3 are more event specific than are those of Performer 31, and are more event specific than the attributions made by Coach 3 for Performer 32. The tendency by Coach 3 to make attributions for event specific outcomes may reflect the number of attributions made for competitive outcomes.

Table 90: Time of season

<table>
<thead>
<tr>
<th>Time of the season</th>
<th>C3.0 Attributions %</th>
<th>P31 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of season</td>
<td>65.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Early competitive</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Main competitive</td>
<td>34.4</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Coach 3 makes a greater percentage of attributions for competitions than does Performer 31, whose attributions are all for training events.

Table 91: Reference to dyadic partner

<table>
<thead>
<tr>
<th>Reference to dyadic partner?</th>
<th>C3.0 Attributions %</th>
<th>P31 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>79.1</td>
<td>2.6</td>
</tr>
<tr>
<td>No</td>
<td>19.6</td>
<td>97.4</td>
</tr>
</tbody>
</table>

Profile: C3.1/P32

Table 92: Saliency

<table>
<thead>
<tr>
<th>Saliency</th>
<th>C3.1 Attributions %</th>
<th>P32 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>31.4</td>
<td>50.8</td>
</tr>
<tr>
<td>Negative</td>
<td>57.1</td>
<td>32.2</td>
</tr>
<tr>
<td>Neutral</td>
<td>11.4</td>
<td>16.9</td>
</tr>
</tbody>
</table>

Coach 3’s attributions contain a large percentage of perceived negative outcomes compared with other coaches and Performer 32.
Despite the saliency scores, Coach 3’s attributions contain little emotion.

Most of the attributions made by Coach 3 are for competition outcomes, whereas nearly all Performer 32’s attributions are for training outcomes.

A similar pattern exists for both coach and performer for positive outcomes but performers offer more negative outcomes than does the coach.

The vast majority of attributions made by Coach 4 and Performer 41 contain no emotions.
Table 99: Outcome

<table>
<thead>
<tr>
<th>Outcome</th>
<th>C4.0 Attributions %</th>
<th>P41 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event specific</td>
<td>48.8</td>
<td>70.0</td>
</tr>
<tr>
<td>Non-event specific</td>
<td>51.2</td>
<td>27.5</td>
</tr>
<tr>
<td>Default</td>
<td></td>
<td>2.5</td>
</tr>
</tbody>
</table>

The performer offers more event-specific attributions than does the coach.

Table 100: Time of season

<table>
<thead>
<tr>
<th>Time of the season</th>
<th>C4.0 Attributions %</th>
<th>P41 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of season</td>
<td>76.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Early competitive</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Main competitive</td>
<td>23.3</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Almost a quarter of Coach 4’s attributions are for competitive outcomes, whereas all attributions made by Performer 41 are for training outcomes.

Table 101: Reference to dyadic partner

<table>
<thead>
<tr>
<th>Reference to dyadic partner?</th>
<th>C4.0 Attributions %</th>
<th>P41 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>93.0</td>
<td>17.5</td>
</tr>
<tr>
<td>No</td>
<td>7.0</td>
<td>82.5</td>
</tr>
</tbody>
</table>

Profile: C4.1/P42

Table 102: Saliency

<table>
<thead>
<tr>
<th>Saliency</th>
<th>C4.1 Attributions %</th>
<th>P42 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>43.8</td>
<td>44.8</td>
</tr>
<tr>
<td>Negative</td>
<td>23.4</td>
<td>31.3</td>
</tr>
<tr>
<td>Neutral</td>
<td>32.8</td>
<td>23.9</td>
</tr>
</tbody>
</table>

Coach and performer offer a similar percentage of positive outcomes, but the performer offers more negative outcomes than does the coach.

Table 103: Emotion

<table>
<thead>
<tr>
<th>Emotion</th>
<th>C4.1 Attributions %</th>
<th>P42 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>15.6</td>
<td>10.4</td>
</tr>
<tr>
<td>Negative</td>
<td>3.1</td>
<td>6.0</td>
</tr>
<tr>
<td>No emotion</td>
<td>81.3</td>
<td>83.6</td>
</tr>
</tbody>
</table>

A large number of attributions, relative to other participants, contain (largely) positive emotion.

Table 104: Outcome

<table>
<thead>
<tr>
<th>Outcome</th>
<th>C4.1 Attributions %</th>
<th>P42 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event specific</td>
<td>53.1</td>
<td>70.1</td>
</tr>
<tr>
<td>Non-event specific</td>
<td>46.9</td>
<td>26.9</td>
</tr>
</tbody>
</table>

A larger number of Performer 42’s attributions, compared with Coach 4, relate to specific events.
Table 105: Time of season

<table>
<thead>
<tr>
<th>Time of the season</th>
<th>C4 Attributions %</th>
<th>P42 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of season</td>
<td>81.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Early competitive</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Main competitive</td>
<td>18.8</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Table 106: Reference to dyadic partner

<table>
<thead>
<tr>
<th>Reference to dyadic partner?</th>
<th>C4.1 Attributions %</th>
<th>P42 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>81.3</td>
<td>0.0</td>
</tr>
<tr>
<td>No</td>
<td>18.8</td>
<td>100.0</td>
</tr>
</tbody>
</table>

None of Performer 42’s attributions make reference to the coach.

Profile: C5/P51

Table 107: Saliency

<table>
<thead>
<tr>
<th>Saliency</th>
<th>C5 Attributions %</th>
<th>P51 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>46.5</td>
<td>51.2</td>
</tr>
<tr>
<td>Negative</td>
<td>29.1</td>
<td>26.2</td>
</tr>
<tr>
<td>Neutral</td>
<td>24.5</td>
<td>22.6</td>
</tr>
</tbody>
</table>

Similar patterns exist for all outcome categories, with a large number of positive outcomes in comparison with other dyads.

Table 108: Emotion

<table>
<thead>
<tr>
<th>Emotion</th>
<th>C5 Attributions %</th>
<th>P51 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>4.5</td>
<td>28.6</td>
</tr>
<tr>
<td>Negative</td>
<td>5.5</td>
<td>4.8</td>
</tr>
<tr>
<td>No emotion</td>
<td>90.0</td>
<td>66.7</td>
</tr>
</tbody>
</table>

A large percentage of Performer 51’s attributions contain emotions, primarily positive.

Table 109: Outcome

<table>
<thead>
<tr>
<th>Outcome</th>
<th>C5 Attributions %</th>
<th>P51 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event specific</td>
<td>69.1</td>
<td>71.4</td>
</tr>
<tr>
<td>Non-event specific</td>
<td>30.9</td>
<td>28.6</td>
</tr>
</tbody>
</table>

Table 110: Time of season

<table>
<thead>
<tr>
<th>Time of the season</th>
<th>C5 Attributions %</th>
<th>P51 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of season</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Early competitive</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Main competitive</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Table 111: Reference to dyadic partner

<table>
<thead>
<tr>
<th>Reference to dyadic partner?</th>
<th>C5 Attributions %</th>
<th>P51 Attributions %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>62.7</td>
<td>1.2</td>
</tr>
<tr>
<td>No</td>
<td>37.3</td>
<td>98.8</td>
</tr>
</tbody>
</table>

A relatively large percentage of Coach 5’s attributions make no reference to Performer 51.