# Naturalistic decision making and emotion in refereeing: affect at the heart of judgment

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## ABSTRACT

**Introduction**: This study examines emotions in decision making during sport refereeing. We study how emotions contribute to referees' judgment acts. We seek to determine whether 1) a negative affect arises from the referees' relationship to the unfolding game; 2) judgment acts are able to end this unsatisfactory situation. **Method**: We have investigated four games in a professional rugby championship. The game was filmed from the stands, the referee was equipped with a head-mounted camera, and a self-confrontation interview was realized. We analyzed the situations in which the referees reported negative affect. **Results/discussion:** In some cases, affective dissatisfaction was related to an abnormal situation. The referee showed what was abnormal and overcame his dissatisfaction through a judgment act. In other cases, affective dissatisfaction was related to a paradoxical situation. The return to a satisfactory state occurred when a norm became predominant to determine the normality/abnormality of the situation within its unfolding.

## KEYWORDS

*Decision Making; Sport Sciences; Appraisal; Judgment act; Self-confrontation interview; Rugby referee*

## INTRODUCTION

Referee decision making is an emblematic example of complex cognition occurring in real-world context; this context has all the characteristics of the environment in which the NDM movement is interested in (Mascarenhas, Collins, Mortimer, & Morris, 2005). Our contribution considers especially how emotions influence the process of decision making during refereeing performance.

According to the NDM community (Klein, 2008), referees' decision processes are studied in naturalistically settings to consider their complexity and effectiveness (Rix-Lièvre, Boyer, Récopé, 2011). Referees are not only the guarantors of the rules, but they also manage the game (Mascarenhas, et al., 2005). Referees' many goals must all be taken into account (Mascarenhas, O'Hare, & Plessner, 2006). Their judgments result from an active process of decision making that handles the entire context of the match (Mascarenhas, et al., 2009; Mascarenhas, et al., 2005; Rix-Lièvre, et al., 2011). Our study was conducted from this perspective: studying referees' naturalistic decision making.

Although many studies have focused on referee decision making, few have taken their emotions into account (Philippe, et al., 2009). Studies on referees' emotional state focused on the sources of stress and their coping strategies (Dorsch & Paskevich, 2007; Voight, 2008) and didn't support a strong relation between decision making and emotions. Few studies focused on the consequences of errors upon affective and cognitive processes of refereeing (Philippe, et al., 2009). Nevertheless, the emotions that arise during a game are rarely taken into account. When emotions are studied, they are generally assessed through questionnaires or scales filled out before or after the game. These studies are thus not able to document referees' affective and cognitive functioning during a game: they only provide information on how the referees usually relate to it. We address this issue.

Our study focused on referees' decisions considering them as judgment acts (Rix-Lièvre, et al., 2011). Referees' judgment acts show and impose on the players what is possible by making reference to both what is ideal and what is legal; in so doing, they establish and qualify events (Ricoeur, 2000). Every judgment act describes a situation in a very particular way; this description is performative in the sense that it brings forth what it describes the way it is described (Rix-Lièvre, et al., 2011). In other words, a foul is called not just in relation to the reality of a fact, but it also depends on the referee's relation to the players' actions. This does not mean that referees make the game or invent the goals, but it does underline that even though players' activities pre-exist judgment acts, it's the way referees show them that makes them game events —goals, tries, fouls, etc. To understand how referees construct what they show and impose on players, the relationship between referees and

players' actions must be examined. However referees do not deal with an objective world of objects and events: individuals compose their own situations. The environment to which actors react is thus originally centred on and by them. According to Canguilhem (1989), a situation is always experienced as an ordeal in the affective meaning of the term; that is, an individuated relation to what is normal or abnormal for the person, depending on his or her own norms. These are the expression of a preference and an instrument of the intention to substitute a satisfactory state for a disappointing one. Every perception is already an evaluation of an affective nature (Lazarus, 2001); every situation is in this way more or less satisfactory/unsatisfactory according to the actors' own norms. This perspective suggests the interest of studying referees' decisions or judgment acts by focusing directly on affective functioning. Although emotion is often considered as a bias, a disturbance, that alters cognitive functioning, we examine what affects referees —what is satisfactory and unsatisfactory for them or the valence that they spontaneously confer on players' activity— and how it contributes to what they show and impose to the players. We sought particularly to study: (1) how referees' negative affects arise especially whether these arise from their relationship to the unfolding game, (2) whether a judgment act helps them –or not– to put an end to an unsatisfactory situation.

## METHOD

This study used a long-term ethnographic approach and other more specific methods. We worked with four experienced rugby referees. These investigations took place during official games in the top level French professional rugby championship.

For each investigation, (1) the game was filmed from the stands and (2) the referee was equipped with a head-mounted camera to record a perspective close to his own subjective view of the situation. After the game, a *subjective re situ* interview (Rix & Biache, 2004) was conducted. The referee was asked to describe his activity and tell the researcher what had been important for him during his actions. The head-mounted video fosters "an experiential immersion" (Omodei, Wearing, & McLennan, 1997). This interview allowed the referee to share his experience and let the researcher understand what made sense for the referee at the moment he was refereeing, what compelled him, what affected him, and what mattered to him.

The referee's verbalizations during the interview were first transcribed. Next, we removed from the corpus all the justifications and general comments. We then identified and selected those passages in which the referee made note of a state of dissatisfaction, a negative affect. At last, we combine the interview excerpt with the description of the corresponding moment in the game. For each excerpt, we then proposed an interpretation as close as possible to what the referee had made explicit during the interview, emphasizing what was unsatisfactory for him and what his acts of judgment imposed.

## RESULTS

The analysis of the interview excerpts in which the referees reported a dissatisfaction, negative affect, revealed two distinct cases. In the first case, dissatisfaction was related to an abnormal situation. The referee showed what was not normal for him and put an end to the situation: the dissatisfaction was resolved by a judgment act. In the second case, dissatisfaction was not only related to an abnormal situation, but also to a paradoxical relationship to the environment.

### Dissatisfaction regarding an abnormal situation

The first category concerned all cases where dissatisfaction was related to an abnormal situation. In each case, the interpretation indicated what was affecting the referee, the source of his dissatisfaction —the nature of a contact, modes of play for grounding the ball, scrum positioning— and what he did in order to make the situation satisfactory again. In such cases, the negative valence of the situation depended on the game that was produced.

This affect was based on a value that defined what is normal and abnormal: norm depreciates everything that the reference to it may not hold for normal (Canguilhem, 1989). The norm and its strength were manifested strong conviction during verbalization, expressed by abrupt sentences (Récopé, Fache, & Rix, 2008): *"we have to, have to, have ...", "stop, stop, stop ...".* In such cases, it should be noted that the abnormality of the situation was related to a single norm. In these moments, the players' activity was characterized with reference to a norm that predominated and imposed its requirements. The referee ended the abnormal situation by blowing his whistle. The judgment act resolved his dissatisfaction and brought the game back within a normal scope: it substituted a satisfactory state for a disappointing one for him. This leads to the conclusion that what affects the referee provides the basis for his judgment acts and what he shows and imposes on the players. The referee, in and by his judgment acts, points what is abnormal and indicates this to the players to better circumscribe what is possible within the dynamics of the game.

### Discomfort regarding a paradoxical relationship to the environment

In the type of case described above, the negative valence of the situation is relative to the abnormality of the game as it is unfolding and the judgment act substitutes for the referee a satisfactory state for an unsatisfactory state. But other cases were observed. In these cases, dissatisfaction arose from a paradoxical relationship to the

environment and a tension experienced by the referee regarding what he needed to do in order to act properly *hinc et nunc*. The referee experienced tension between two poorly compatible, even contradictory, perspectives that he was simultaneously aware of. This situation was quite paradoxical: normal by one value and abnormal by another. The referee thus experienced ambivalence arising from the tension between different norms. The norms may have concerned what is acceptable in a game; what a referee has to do to perform properly; what is important to progress in refereeing levels; what players, spectators, supervisors are expecting; and so on. We did not identify clearly competing norms, but rather frequent tensions between different norms. The tension between norms produced a negative affect that persisted until the resolution of the norms debate (Schwartz, 2011). The return to a state of satisfaction required that one quality became more salient in the dynamics of the situation. Thus, the normality of the situation is established. If it became clearly abnormal, the referee ended it by blowing the whistle. Compared with the previous result, the judgment act was being constructed within a larger time frame. What the referee considered as abnormal was not captured in the instant, but had been developing within the dynamics of the situation. If the situation became normal, the referee allowed the game to go on. The negative affect arising from the tension between norms thus did not necessarily lead to an intervention by the referee. The discomfort persisted as long as the situation aroused ambivalence and remained unclear.

## DISCUSSION

The results of this exploratory study are discussed in three parts: (a) the origin and place of affect in the judgment acts of referees, (b) the connections between perception, decision, and emotion in refereeing, (c) the role of norms and values in the judgment activity of referees.

Our second result leads us to reconsider how referees' negative affects arise. If the referees' negative affects are sometimes related to their relationship to the unfolding game, it could also be embedded in their evaluation of their paradoxical relationship to the environment in his entirety. In other words, the origin of referees' negative affects can be understood from a meta-level. Similarly, complexity must be considered to conceptualize the place of affect in referees' judgment acts. As we expected, some judgment acts instantaneously clear up referees' dissatisfaction and get the play back into a normal framework. But every negative affect did not give place to judgment acts. The case of negative affect related to norms debate shows this: the negative feeling fades when the debate is resolved and the situation becomes clear. If an abnormal situation is confirmed or is becoming amplified and more prevalent, a judgment act ends the persisting negative affect. But if normalcy is becoming more predominant, a judgment act is no longer needed to lift a referee's negative affect. However negative affect appeared to be at the heart of the referees' judgment acts, several processes are distinguished. We established that the situations showed by the judgment acts are characterized as abnormal spontaneously in the instant or within a longer time frame that was related to the dynamics of the referee's situation.

About the connections between perception, decision, and emotion in refereeing, Dosseville et al. (2011, p58) suggested that "the perception of [players'] action provokes an emotion that will guide the decision". Our results support partially this proposal. Negative affect was the basis for the referees' judgment acts: what is perceived as abnormal in the moment or in the dynamics of the situation leads the referee to blow the whistle. But it is not the perception of action that causes an emotion; affect is at the very heart of referees' perceptions of player activity. The notion of "appraisal" helps to clarify our position: every perception is an assessment of what is happening in terms of personal well-being (Lazarus, 2001). This appraisal is not the result of reflection, calculation, or deliberation; it is instantaneous and results from a mostly unconscious and embodied process. These proposals might lead some authors to denounce bias in refereeing judgments and to find an affective explanation of biases in perception and/or categorization. Instead we emphasize the "implacable logic of emotion" and its rationality (Ibid, p59). According to Lazarus, it is in fact this rationality that is needed to investigate. As this rationality is based on tacit and embodied knowledge, more researches are necessary to better understand this rationality-in-action in the subjective experience of referees. More broadly, this leads to consider the interest of a cross-fertilization of naturalistic decision making movement and appraisal approach. Indeed, appraisal could provide an understanding of situation awareness' process and emotion should be incorporated as knowledge in decision making. It seems to be an alternative to an algorithmic rationality (Kahneman, Klein, 2009).

The referees' norms and values were established early on as references for what was affecting them (Canguilhem, 1989). Our results show that a referee's negative affect qualify/denote the unfolding of the play; abnormal play is specified relatively to a norm, with this norm providing core of the referee's relationship to his environment centred on the game unfolding. But our results also suggest that negative affect may be related to the ambivalence that referees experience: their situation may be normal according to a certain norm –the game has to manage itself- and abnormal for another –the game have to be cleared. Negative affect therefore originates in norms and in norms debates. Although we did not identify any particular tensions between norms, Schwartz (2011) noted the importance of examining the nature of the norms debate. He distinguished between prescribed/exogenous norms and endogenous norms, which are those specific to an actor and constructed by experience. He assumed that activity refers to a polemical relationship between exogenous and endogenous norms. This orientation suggests perspectives for future work on the activity of referees. Refereeing is based on many exogenous norms: game rules, federation guidelines, the criteria used to assess refereeing performance, and so on. Although Schwartz (2011) acknowledged that humans cannot possibly be completely directed by

exogenous norms, it is equally unthinkable to referee without these norms being more or less operative. Therefore, future researches have to undertake the norms debates at the heart of refereeing activity, to identify their nature, and to study how they could be resolved. The study of how referees' judgment acts are constructed in connection with both what is legal and the referees' personal norms and values should help to provide empirical support for the proposals of Ricoeur (2000).

## ACKNOWLEDGMENTS

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