“AN INVESTIGATION OF PROFESSIONAL BALLET DANCERS EXPERIENCES OF FLOW AND MOTIVATIONAL PERSPECTIVES”

by

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A thesis submitted to

The University of Birmingham

In part fulfilment for the degree of

MASTER OF PHILOSOPHY

School of Education

The University of Birmingham

Date: 29 October, 2012

ABSTRACT

This study investigates professional ballet dancers' experiences of flow: an extraordinary state of consciousness, reached by the dancers when fully immersed in their performance, which allows them to function at the limit of their physical and mental abilities, enhancing levels of achievement. Dancers' flow experiences and motivational tendencies were analysed by quantitative and qualitative methods in order to test the theoretical relationship between intrinsic motivation and flow, to understand the performers' subjective experiences of this optimal psychological state, and to identify factors that may help or hinder the achievement of flow in ballet settings. Fifty-four elite professional ballet dancers completed questionnaires measuring motivation and flow, and four participants were interviewed on their subjective experiences. The results demonstrated that intrinsic motivation was only weakly associated with the occurrence of this optimal state. The most self-determined form of extrinsic motivation, integrated regulation, was the most effective form of motivation associated with the frequency and intensity of the dancers' experience of flow. Clear Goals, concentration on the task at hand, and autotelic experience were the most endorsed dimensions of flow, while challenge-skills balance, unambiguous feedback, sense of control and autotelic experience were the most representative characteristics of the interviewees' optimal experience. Confidence was found to be the most influential psychological facilitator or inhibitor of their optimal experience. Lights, setting, floor, props, costumes, and musical conductor, were unique environmental and social inhibitors specific to the ballet world.

ACKNOWLEDGMENTS

I would like to thank all of the dancers that agreed to participate in this study, and so willingly shared their personal experiences. I would also like to thank my tutor Professor Tansin Benn, Ian Boardley and at last, but not least, Charles Jenkins for the encouragement, generous feedback, advice and support throughout all the challenges of the study. I also would like to thank my friends who provided moral support throughout the journey, for sheer endless computer problem solving, and the incredible amount of patience they had with me in the last year. It's time to start on the list of things to do "Yes, I will do it…. after my thesis".

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CHAPTER 1.

INTRODUCTION

Striving for the ultimate performance, and trying to extend my own artistic and technical abilities through commitment and determination, has been my daily professional and personal preoccupation for the last 23 years as a principal ballet dancer. A sense of accomplishment and self-satisfaction, often felt while achieving new heights, awakened my interest in the concept of flow as a means towards understanding the achievement of optimal performance. Flow is a positive psychological experience, often referred to by athletes as the ultimate "zone" of optimal functioning, that leads to a number of experiential qualities such as complete absorption on the task at hand and total control over thoughts and actions in performance (Jackson and Csikszentmihalyi, 1999). Therefore this study, located in social psychology, investigates fellow dancers' flow experiences at one of UK's leading classical ballet companies in order to:

a) establish the role that intrinsic motivation may play in the development of flow experiences;

b) understand and document ballet dancers' subjective experience of flow;

c) identify, through analysis of dancers' personal accounts and perceptions of optimal experience, the facilitators and inhibitors of flow specific to the context of dance.

The rationale for this investigation was my intrinsic and pragmatic interest in understanding the motivational behaviour underlying positive performance states, key antecedents and ongoing conditions associated with its achievement, in order to help dancers, as a future

coach, to improve quality of performance and increase their levels of enjoyment and satisfaction.

Flow is defined operationally as a positive state of consciousness that typically occurs when there is a perceived balance between one's competencies and the demands of a task (Csickszentmihalyi, 1975). It is only when a balance between ability and demand is achieved that the individual is free from concerns about the outcome, that he/she is able to immerse him/herself totally in the activity, allowing his/her mind and body to perform harmoniously and effortlessly at the limit of his/her capacity which in turn brings out the potential for exceptional human performance (Jackson and Csickszentmihalyi, 1999). Csikzentmihalyi (1990) refers to flow as an optimal experience, and uses the two terms interchangeably, because it represents an enjoyable state of consciousness which has been related to several positive performance outcomes (Jackson and Roberts, 1992; Csikzentmihalyi and Rathunde, 1993). This optimal psychological condition is potentially one of the most valuable explanatory attempts to conceptualise the phenomenon, which was first refined in the analysis of high performance in sport (McInman and Grove, 1991; Jackson and Roberts, 1992).

Previous sport psychology literature demonstrated anecdotal and empirical evidence suggesting that peak performance is dependent on the intensity and experience of the flow state (Jackson and Roberts, 1992; Jackson & Csikszentmihalyi, 1999). Therefore, based on the assumptions that when in flow "the human organism is functioning at its fullest capacity" (Csikzentmihalyi, 1975, p. 55), and that "flow is the psychological process underlying peak performance" (Jackson and Marsh, 1996, p. 18), it is imperative as a dancer to investigate,

gain a deeper understanding of this phenomenon, and learn how to facilitate flow experiences in our discipline.

Since the Hungarian psychologist Mihaly Csikszentmihaly first articulated this elusive and desirable state of consciousness in the early 1970s, linking the subjective experience of flow to the achievement of peak performance, athletes, coaches and psychologists have tried to apply this concept to sport and to identify its antecedents in order to realise its potential in training for the achievement of superior performance.

As described by Hays (2002), many similarities exist between sports and dance: in both spheres, lifelong dedication, sacrifice and commitment characterize the lifestyle of these performers. Elite athletes and professional ballet dancers train their bodies intensively from a very young age striving for high standards of technique and fitness in order to achieve elite levels. They are both performers and their bodies are the instrument of the profession. Furthermore, along with the benefits of being elite performers, competition, critical social and professional environments, injury, mental processes and professional identity foreclosure have parallel risks in term of social, behavioral and emotional development within both spheres (Pearson and Petitpas, 1990). Therefore, due to the paucity of dance psychology literature and neglect of the concept of flow in ballet, this study utilised qualitative and quantitative research (e.g. Jackson, 1992; 1995; 1996; Jackson and Roberts, 1992; Jackson et al., 1998; 2002; 2004a; 2008) into the concept of flow in sport in order to critically examine the extent to which it could be adapted and applied heuristically to underpin this investigation of the experience of flow in dance.

Jackson and Csikszentmihalyi (1999) state that achieving flow and peak performance is the ultimate goal for many elite performers. It is self–evident that the achievement of excellence in sport, as in dance, requires a huge investment of time and energy for which a high level of motivation is sine qua non (Orlick and Partington, 1988; Ericsson, 1997; Greenleaf et al., 2001). Motivation represents the "internal and external forces that produce the initiation, direction, intensity and persistence of behavior" (Vallerand and Thill, 1993, p. 18). Two main types of motivation have been intensively researched and reported in the literature: intrinsic and extrinsic motivation (Deci and Ryan, 2000; Vallerand, 2007). Dancers engage in their activity for different reasons some of which are extrinsic: to be promoted, well regarded by others, to have a secure income, and others which are intrinsic: as a mean of self-expression, to challenge their physical limits, to master skills, or for pure enjoyment that the activity provides (ibid), but whatever motivates them, the essence of their activity remains the quality and the exhilaration of the experience it provides (Jackson and Csikszentmihalyi, 1999). Evidence suggests that enhanced motivation promotes learning, performance, enjoyment, persistence (e.g. Wilson, 2005; Weiner, 2005), and among other benefits, the occurrence of flow (Jackson and Roberts, 1992; Jackson, 1995; Jackson and Marsh, 1995; Jackson et al., 1998; Martin et al., 2006; Mallet et al., 2007; Kowal and Fortier, 1999).

Linked to flow is the concept of intrinsic motivation, which is believed to be, among all forms of motivation, the most conducive to the achievement of the optimal experience (Jackson and Eklund, 2004; Csikszentmihaly, 1990). Several qualitative and quantitative studies specifically examined the relationship between motivation and flow found that individuals who were motivated by intrinsic reasons (for the pleasure and satisfaction associated with the activity) reported the highest incidences of flow (Jackson, 1995; Jackson

& Marsh, 1995; Jackson & Roberts, 1992; Martin and Cutler, 2002; Shernoff et al., 2003; Seifert and Hedderson, 2009). Jackson and Csikszentmihaly (1999) explain that when the athletes are too focused on the outcome and extrinsic aspects of the experience they tend to lose concentration and track of the task at hand, missing out on feelings of enjoyment in performance and their opportunity to achieve flow. Pursuing an experience as an end in itself is the main characteristic of intrinsic motivation (Deci and Ryan, 1985, 2000), which perfectly complements the nature of flow experiences, that are rewarding in themselves because they reinforce behaviour in the absence of other rewards (Csikzentmihalyi, 1975). Therefore, the performer motivated by intrinsic reasons (who engages in dance for no apparent reward other than the satisfaction and pleasure he/she gets from the activity itself) is likely to feel totally involved in the activity and exhibit a narrow focus on the task at hand (Deci and Ryan, 2000), which are features of the optimal experience (Jackson and Csikszentmihalyi, 1999).

1.1 Purposes and Significance of the Study

Central to this study is an exploration of the experience of flow in the lives of elite ballet dancers and the conditions associated with the occurrence of this optimal state with the aim to produce interesting insights of this under researched context. The anticipated outcome of this applied study is the increased understanding of the nature of flow experience and its reciprocal or concomitant relationship with optimal performance in dance, to increase the self-awareness of the performer seeking perfection and efficacy of training and performance. A comprehensive understanding and application of the framework of the flow theory and the identification of its antecedents and inhibitors could enable the dancers (of this particular

company), who strive for perfection and seek challenges, to consistently achieve optimal performance and enjoy more fully their careers, and enable the director, ballet masters and choreographers to help their dancers to achieve their potential. The successful application of these theories and their respective measures to dance would enhance their generalizability and validity in another achievement domain. The long-term objective is to advance knowledge in the field of positive psychology through furthering understanding of the optimal experience and its relationship to dancers' motivational propensity in the field of dance. Three aims were addressed in the ensuing study:

1) to examine the theoretical relationship between intrinsic motivation and flow by identifying the kind of motivation that is the most conducive to the achievement of the optimal experience for the particular group of elite ballet dancers selected for the study;

2) to investigate dancers' subjective experiences of flow and their relationship with Csikzentimihalyi's (1990) flow model;

3) to identify factors which help or prevent dancers from achieving flow.

CHAPTER 2.

LITTERATURE REVIEW

Based on previous research in sport, this study utilized specific constructs on motivation and flow with theoretical relevance as a guide to the investigation of professional ballet dancers' optimal experiences.

2.1. Flow

Csikszentmihalyi (1975), was the first scientist to research and develop the concept of flow following the examination of enjoyable and self-motivating activities in contexts such as rock climbing, dancing, playing chess and surgery, which provided a progressive level of difficulty and the opportunity to increase one's skills to meet new challenges. Jackson's qualitative studies (1992; 1995) of elite national and world-class athletes directed flow research specifically into sport, and led Jackson and colleagues (Jackson and Marsh, 1996; Jackson and Roberts, 1992; Jackson, 1996) to seek understanding of nine higher-order themes that matched Csickszentmihalyi's (1990) flow theory dimensions. According to Jackson and Csikzentmihalyi (1999), this optimal psychological state is composed of a number of positive experiential qualities, some of which, depending on the activity, set the stage for flow and act as an antecedent, whereas others describe the actual experience. Moreover, each dimension epitomizes a particular quality of the flow experience, while the ninth component (autotelic experience) is the end product and full expression of a flow state (Jackson, 1992). The nine fundamental dimensions that help to achieve a positive mind-set in

Csikzentmihalyi's flow theory (1975, 1990) are described below.

1. Challenge/skills balance is the most generic characteristic of flow, and it is only when endorsing this dimension that the other characteristics became evident. Perception of one's own ability and the subjective understanding of the difficulty are critical to flow. It is only when the individual believes in his/her ability to achieve a goal, that his/her behaviour is initiated and sustained until the goal is achieved. Other experiential states would occur and keep one from experiencing flow if the skill/challenge ratio is unbalanced: if the goal seems unattainable the individual experiences anxiety. If one's skills are perceived to be far beyond the available challenge, boredom will occur (Csikzentsmihalyi, 1975,1990).

2. Action-awareness merging dimension is characterized by feelings of total absorption in the activity and automaticity of movements. The individual often experiences oneness between actions and performance (Jackson and Csikszentmihaliy, 1999).

3. Clear goals component is achieved by clarity of purposes in performance. The individual is fully connected to the task and the undimmed intentions occur ahead of time or on a moment-by-moment basis while he/she is performing (ibid).

4. Unambiguous feedback dimension is endorsed when the person is aware of how well he/she is progressing towards the goal and able to integrate seamlessly this information without getting distracted from the task (ibid).

5. Concentration on the task at hand is experienced when the performer is able to focus all his/her psychic energies on the task, limiting his/her stimulus field (ibid).

6. Sense of control is endorsed when one perceives control over the mind and body in performance especially in difficult or novel situations (ibid).

7. Loss of self-consciousness is experienced when the person is completely involved in the

activity and there is no room in consciousness for worries about the self or how one is perceived or evaluated by others (Csikszentmihaliy, 1990).

8. Transformation of time involves a sense of distortion of time that either seems to speed up or slow down (ibid).

9. Autotelic (intrinsic) experience it is the most intense and highly enjoyable experience of flow because it summarize all the eight experiential qualities of the optimal experience (ibid). In sport, it represents "those moments when everything comes together for the performer" (Jackson and Eklund, 2004, p.3) because it allows the athlete to increase his/her mental and physical abilities to a state of exceptional functioning, allowing him/her to achieve higher levels of performance and profound satisfaction (ibid).

The results of several qualitative studies in sport have shown that athletes from a wide range of activities experience and describe flow in a similar way using different analogies (e.g. Jackson, 1992, 1996; Seifert and Hedderson, 2010), while corroborating findings of qualitative and empirical researches (e.g. Jackson and Marsh, 1996; Jackson et al., 1998; Kowal and Fortier, 1999; Marsh and Jackson, 1999) demonstrated that some of the dimensions of flow were more salient for certain activities than others. For example, transformation of time is not often endorsed in sports such as swimming (Kowal and Fortier, 1999) where awareness of time is a critical part of the evaluation of performance. Similarly, a figure skater needs to be concerned with how she presents herself in performance (Jackson, 1992), therefore the dimension of loss of self-consciousness will not be as relevant to her achievement of flow. Loss of self-consciousness and time-transformation are transient dimensions in sport compared to components such as challenge/skills balance, clear goals or concentration on the task at hand (Jackson and Marsh, 1996; Jackson et al., 1998). In the light

of these results, Jackson and Eklund (2002) have encouraged researchers to investigate each specific component versus a global factors approach for accuracy of results.

2.2 Theoretical Relationship between Flow and Intrinsic motivation

Csikszentmihalyi's (1975, 1988) studies of flow were motivated by an interest in understanding why people engaged in activity out of pure enjoyment and how they felt in these intrinsically motivated situations. The results of his investigations demonstrated that the participants who experienced the highest frequency of flow, rated the intrinsic enjoyment of the activity far more rewarding than the extrinsic gains. Since then, intrinsic motivation and flow have been strongly linked, and sparked the interest of many researchers in the area of optimal experience (e.g. Jackson and Roberts, 1992; Jackson et al., 1998; Kowal and Fortier, 1999; Martin and Cutler, 2002; Martin et al., 2006; Mallet et al., 2007; Jackson et al., 2008). Analogous results were found from these studies, which strengthened over time the hypothesized positive relationship between the two constructs.

Flow has often been considered in the literature as the highest expression of intrinsic motivation (Deci and Ryan, 1995; Csikzentmihalyi, 1975; Privette and Bundrick, 1991). This conceptual link is evident, and perfectly captured by the purest form of flow: Autotelic experience (from the Greek auto=self and telos=goal), which has a built-in goal and needs no other justification to be undertaken (Csikzentmihalyi, 1990). In fact, during an autotelic experience the individual stretches his/her capacity to the full extent, integrates mind and body, and immerses him/herself in the activity, only because it provide him/her with rewards

that are personally valuable (ibid).

Kimiecik and Harris, (1996) have suggested that the optimal and enjoyable experience of flow leads to positive affect which generates a positive motivational cycle. In developing new skills and meeting new challenges, the individual reinforces positive feelings about the self, produces positive emotions, and in turn enhances intrinsic motivation (desire to perform an activity for the enjoyment that it provides), which ultimately culminates in a flow experience (Kimiecik and Harris, 1996; Csikszentmihalyi and Rathunde, 1993). The activity becomes so gratifying that he/she wants to repeat it for its own sake, and those feelings of intrinsic satisfaction are so pleasurable that he/she seeks to return to this positive mind-set over and over again (Csikzentmihalyi, 1975; 1990). This assumption has also been supported by Jackson's qualitative studies (1992, 1996) of elite athlete, which found that the performers considered flow as a source of motivation to continue in their sport.

According to Deci and Ryan (1985, p. 59), " when highly intrinsically motivated, organisms will be extremely interested in what they are doing and experience a sense of flow". That is because, the individual who is interested in the task would have a narrow focus, experience total absorption, high level of concentration, and feelings of control, which are all characteristics of a flow state (Csikszentmihalyi, 1990). Jackson and Csikzentmihalyi (1999) explain that developing and demonstrating competence and enjoyment are two of the most important reasons for engaging in any artistic or competitive endeavour. Similarly, these are also the main rewards that account for intrinsic motivation (Deci and Ryan, 2007), and are both precursors of flow (Jackson and Csikzentmihalyi, 1999), therefore making dance a potentially rich environment for the achievement and investigation of optimal experiences.

2.3 Motivation

This study uses the Self-Determination Theory (SDT; Deci and Ryan, 1985, 2000, 2002) to structure the investigation of dancers' motivational perspectives. This motivational approach has been used in several studies in sport to investigate the relationship between motivation and flow (e.g. Jackson et al., 1998; Kowal and Fortier, 2000; Mallet et al., 2007) because it distinguishes between different forms of motivation accounting for the quality of motivation that regulates behaviours, as well as the process that facilitates or undermines motivational development (Deci and Ryan, 2002). Deci and Ryan (1985) postulated that three distinct motivational forces influence behaviours: intrinsic motivation, extrinsic motivation, and amotivation. SDT also proposes that motivation can be *autonomous* (or *self-determined)*, when the behaviours and actions are initiated freely and originated within the self; *controlling* (or *non-self-determined)*, when they are instigated by pressure or controlled by external forces (Deci and Ryan, 1985).

The Organismic Integration Theory (OIT), a subsidiary theory of SDT, describes the degree of internalization of extrinsically motivated behaviours (actions that are initiated to receive something positive or avoid something negative) (Deci and Ryan, 2002). Ryan and colleagues (Ryan and Connell, 1989; Ryan and Deci, 2000, 2002) identified four specific forms of extrinsic motivation, which lie along a continuum between intrinsic motivation and amotivation, depending on the level of self-determination (Deci and Ryan, 2000, 2002). From the least self-determined to the most autonomous the six forms of motivation are: amotivation, external regulation, introjected regulation, identified regulation, integrated regulation, and intrinsic motivation (ibid), which are defined as

follows:

Non self-determined motivation

- *Amotivation* is considered to be a behaviour that is represented by lack of interest or intention to pursue something. It is characterized by the absence of intrinsic or extrinsic motivation (Deci and Ryan, 1985, 2000, 2002).

- *External regulation* is the most controlling type of extrinsic motivation and is defined as engaging in an activity as a means to the end, because it refers to behaviours regulated by external forces such as rewards, pay or pressures (ibid).

- *Introjected regulation* is also a non-self determined form of motivation, and even if the individual has internalized an external regulation, the person does not experience the behaviour as part of the self. The behaviour is performed to avoid guilt or anxiety, or desire to enhance the ego (ibid).

Self-determined motivation

- A more autonomous form of extrinsic motivation is *identified regulation* where the regulation has being recognized as valuable, accepted, and owned because of personal importance. The individual engages is an activity because he/she holds the outcomes of the behaviour to be personally significant, even if not enjoyable (ibid).

- Finally, *integrated regulation* is the most autonomous form of extrinsic regulation. In this type of regulation the person has assimilated the regulations fully into the self and they became part of his/her value, needs and goals. Therefore, the behaviours are similar to intrinsic motivation, but still extrinsic in nature because they are done to attain separable outcomes rather than inherent enjoyment (ibid).

- *Intrinsic motivation* refers to engaging in an activity for its own sake, out of interest, and for the pleasure derived from the experience itself (Deci and Ryan, 1985). It is the most autonomous form of motivation, and it is characterize by the inherent human tendency to seek out novelty, master challenges, explore novel stimuli, extend and exercise one's capacities (Deci and Ryan, 2000).

SDT focuses on psychological, biological, and social needs as a foundation for explaining human behaviour and posits that competence, autonomy, and relatedness are universally essential for optimal human development, motivation, and integrity (Deci and Ryan, 1985). They go on to claim that the perception of *autonomy, competence, and relatedness* are motivational mediators that positively influence intrinsic motivation. Perception of *competence* in sport refers to a feeling that one has the ability and the opportunity to be successful in an achievement domain (ibid). Perception of *autonomy* indicates feelings of choice and volition, and those choices determine one's actions (ibid). *Relatedness* refers to the individual's desire to feel cared for and connected with others (e.g. coach, peers), and to experience a sense of belonging in a social context (ibid). Ryan and Deci (2002) posit that social environmental factors can directly influence motivational mediators, which in turn influence motivation. The satisfaction of these three psychological needs has been shown to

predict positive outcomes such as intrinsic motivation (e.g. Hollembeak and Amorose, 2005), and flow (e.g. Jackson and Roberts, 1992; Jackson, 1995; Stein et al., 1995; Kowal and Fortier, 1999).

Deci and Ryan (1985, p. 32) states that intrinsic motivation involves the 'innate, organismic need for competence and self-determination'. The authors further explain that, when the individual feels in control of his/her actions (self-determined) and feels competent in his/her skills, he/she is more likely to be intrinsically motivated and there is an association between flow and intrinsic motivation (Deci and Ryan, 1985).

2.4. Inhibitors and Facilitators of Flow

Previous qualitative and quantitative researches have tried to identify facilitators and inhibitors of flow investigating athletes' subjective experiences, and assessed, by empirical means, patterns of relationship between flow and constructs logically related to the optimal experience.

2.4.a Empirical Studies

Mallet and colleagues (Mallet et al., 2007), examined correlations between the Sport Motivation Scale-6 (SMS-6) with the Dispositional Flow Scale (DFS-2), to evaluate the concurrent validity of the SMS-6 on a sample of elite athletes. Results demonstrated, in

accordance with the flow theory (Csikszentmihalyi, 1990), that intrinsic motivation was positively and substantially correlated with flow, while the external motivation and amotivation factors had negative or no significant correlations with the flow factors.

Jackson and Roberts (1992) investigated the relationships between *perception of competence, goal orientation, peak performance* and flow, in a quantitative study of collegiate athletes. The results demonstrated that participants who exhibited high levels of perceived competence experienced flow more often those who reported low levels. Athletes who tended to focus in competition on the task at hand and relied on self-referenced concept of ability (task-orientated) (Duda, 1992; Duda and Nichollson, 1992), reported higher incidences of flow and were more likely to experience peak performance. While athletes, who tended to focus on the outcomes, compared their ability and based their success on outperforming others (ego-orientated) (ibid), reported high levels of apprehension, no incidences of flow and poor quality of performance. Moreover, athletes during peak performance experienced high levels of flow, demonstrating that "flow may be necessary for the achievement of peak performance" (Jackson and Roberts, 1992, p.62).

Moreover, Kowal and Fortier (1999) examined empirically the association between flow and motivation in the swimming context, and found significant positive relationships: a) between flow and intrinsic motivation, and flow and self-determined extrinsic motivation; b) between flow and the three situational motivational determinants: *autonomy, competence, and relatedness*. Among the three psychological needs, relatedness and competence exhibited the strongest association to flow. These results agreed with the postulates underling the SDT (Deci and Ryan, 1985) and the flow theory (Csikszentmihalyi, 1990), demonstrating that

when the swimmers perceived themselves competent, connected with others, and engaged in their sport for intrinsic interests, they were most likely to experience frequent episodes of flow.

Parallel results were found by Jackson and colleagues (Jackson et al., 1998) in a study examining psychological correlates of flow (*intrinsic and extrinsic motivation, perceived ability, and trait anxiety*) on a sample of master athletes. Intrinsic motivation and perceived competence were found to be significant predictors of the optimal experience. Furthermore, concomitant with the flow theory, perceived ability had the highest correlation with the challenge/skill balance subscale of flow, demonstrating that the individual who believed in his/her ability, was likely to perceive a balance between challenge and skills, and able to achieve flow (Csikszentmihalyi, 1990). Competitive trait anxiety, which is the "tendency to perceive competitive situations as threatening and to respond to these situations with feelings of apprehension or tension" (Martens, 1977, p.23), exhibited a significant negative correlation with flow. This result demonstrates that freedom from worry and distraction, combined with perception of competence made a significant contribution to the athletes' flow experiences.

Due to theoretical relevance, Jackson and colleague (Jackson et al., 2001) tested the relationship between flow, athletic *self-concept*, *psychological skills* and *performance*, and found positive association between these constructs. Self-concept (a construct related to perceived ability) was used in the study to examine the athletes' perceived skills side of the flow equation (challenge/skill). Psychological skills, such as regulating arousal, processing information, and managing emotions, which have been shown in the literature to be crucial

for athletes in performance (Thomas et al., 1999), were predicted to facilitate flow experiences. Optimal performance and flow were expected to be associated due to the previous link found in the literature between peak performance and flow (Jackson and Roberts, 1992). A stronger relationship was reported between flow (especially autotelic experience and challenge-skills balance) and performance levels. Positive perception of self as an athlete, and the use of psychological skills were found to be associated with the occurrence of flow in performance. Competence, performance, and skills were the strongest predictor of flow. The results obtained by Jackson and colleagues, provided evidence that the use of psychological skills, perception of competence in skills were related to optimal performance and flow, highlighting the importance of psychological factors related to optimal sport experience and flow. These results were in accordance with the findings of previous studies (Jackson and Roberts, 1992 and Jackson et al., 1998) and reinforced Csikszentmihalyi's (1990) assumption that control of the mind and attention are psychological skills required for the achievement of flow.

In a non-sport context, Martin and Cutler (2002), examined theatre actors' experience of flow and their motivation characteristics, and found, concordant with the flow theory (Csikszentmihalyi, 1990), that flow was more strongly correlated to intrinsic motivation than to extrinsic motivation and unrelated to amotivation.

Overall, results of previous empirical studies supported the link between intrinsic motivation and flow (Csikszentmihalyi, 1990), the importance of the three psychological needs satisfaction (particularly perception of competence), the use of psychological skills in sport to the achievement of flow (Csikszentmihalyi, 1990; Csikszentmihalyi and Nakamura, 1989),

and confirmed the association between peak performance and flow (Jackson and Roberts, 1992; Jackson and Csikzentmihalyi, 1999).

2.4.b Qualitative Studies

Central to the present investigation, is the qualitative study of flow in dance by Hefferon and Ollis (2006), which explored the optimal experiences of nine dancers from different training backgrounds (jazz, ballet, contemporary and Irish dance). Through in-depth interpretative analysis of the interviews, the authors found that the dancers who experience flow regularly were highly intrinsically motivated, because they danced for the sheer enjoyment and reward of performing. Confidence in self and skills was the stronger facilitator of flow. In line with Csikszentmihalyi's (1990) flow theory, when the dancers perceived their abilities to be equal to the challenge presented (challenge-skill balance), they felt extremely confident in themselves and able to focus exclusively on the choreography while performing, leaving no room in their consciousness for worry or self-doubts about their skills, and thus likely to achieve flow. As expected, lack of confidence was the primary inhibitor of their optimal experience. When the dancers perceived the challenge of the choreography to be higher that their abilities, feeling of anxiety and incompetence occurred hindering their ability to get into flow. Other facilitators were: concentration on the task at hand, which eliminated any irrelevant stimuli and negative thoughts while performing; comfortable relationships with others (relatedness), that enhanced their confidence in the social environment in which they worked (Deci and Ryan, 1985; Harter, 1981b), and constructive feedback from important others (ibid) such as choreographers or coaches, which enabled them to feel more confident in their ability as a dancers (competence), and in turn facilitated their potential propensity to

achieve flow episodes. As Jackson (1992) had found, audience size and perception of a responsive crowd had a direct effect on the dancers' flow experiences. Moreover, feeling connected with the music, at ease with the choreography, familiar with the settings and stage, and wearing comfortable costume in performance were unique facilitators specific to the dance context. The reverse of these conditions acted as inhibitors of their flow experience.

Jackson interviewed figure skaters (1992), and elite level athletes from different sports (1995) about factors that helped or disrupted their achievement of flow. A similar set of factors arose from the analysis of transcripts of both studies providing insight into conditions that may influence whether or not athletes achieve flow. Some of the more salient factors perceived by the athletes as facilitators were: physical and mental preparation, which has been recognized in the literature to be essential to optimal performance (e.g. Orlick, 1998; Gould et al., 1993, 1993a, 1993b); confidence and optimal arousal level, as would be expected from the challenge/skill balance equation; and focus, which is related to the dimension of concentration on the task at hand. Other facilitators were: how the performance felt and progressed, which represents the characteristics of unambiguous feedback; and as expected, optimal motivation which was shown by the quantitative studies just mentioned earlier, to directly affect flow. Factors that prevented or disrupted flow were: lack of physical preparation or readiness, physical problems such as injuries or fatigue, negative mental attitude and lack of confidence, inappropriate focus as thinking too much, worrying or not focusing enough. Other factors were: lack of motivation, non optimal environmental or situational conditions such as undesirable weather, uncontrollable event influences, and distracting interaction before or during the event with others. Above all confidence, or lack of it, was found to be the most powerful facilitator or inhibitor of the athletes' experience of

flow.

Seifert and Hedderson (2010) interviewed and observed skateboarders in their natural context to examine their intrinsic motivation and flow experiences. The results of this ethnographic study showed that heightened concentration, and feelings of autonomy and competence were antecedents of the participants' flow experiences. The skateboarders were not asked about facilitators or inhibitors of flow, but while describing flow episodes, several antecedents surfaced naturally from their accounts. The authors had chosen to investigate this spontaneous context because the participants were mostly confronted by self-challenges and the activity lacked the externally regulating structure of other disciplines. The skateboarders demonstrated a strong sense of self-determination in the interviews, because they talked about striving to learn new tricks and master old ones, which are all characteristics of intrinsic motivation (Deci and Ryan, 1985). According with the SDT (Deci and Ryan, 1985) and the flow theory (Csikszentmihalyi, 1990), the descriptions of flow given by the skateboarders included feelings of volition and choice (autonomy); perceived competence in their abilities gained while testing and improving their own skills (challenge/skills balance); and heightened concentration (concentration on the task at hand) which resulted in the transcendental experience of flow. This study therefore confirmed the theoretical relationship between intrinsic motivation and flow (Csikszentmihalyi, 1990), and perceived autonomy, competence and flow (Kowal and Fortier, 1999).

Overall, parallels can be drawn between the factors that influence flow identified by qualitative work (Jackson, 1992, 1996; Hefferon and Ollis, 2006; Seifert and Hedderson, 2010) and quantitative studies (Jackson and Roberts, 1992; Kowal and Fortier, 1999; Jackson

et al., 1998, 2001; Martin and Cutler, 2002; Mallet et al., 2007). The most salient conditions arising from the interviews were: confidence, intrinsic motivation, physical and mental preparation (readiness) and maintenance of appropriate focus, while the matching or connecting set of factors found by quantitative studies were: intrinsic motivation, perceived ability (confidence), task orientation and use of psychological skills (which are linked to appropriate focus and concentration on the task).

2.5 Descriptions of Flow

Rich information about athletes' flow experiences has been generated mostly by Jackson's (1992 and 1996) qualitative work, which aimed to establish the relevance of Csikszentmihaklyi (1990) framework to the elite sport context, and gain information about optimal moments in sport. Athletes, from these studies, described flow as an extremely enjoyable experience that stood out as being optimal, and superior to their usual level of accomplishment which was represented by feelings of clarity, awareness, automaticity, narrow focus, feeling in control of the situation, and things happening in slow motion. Loss of self-consciousness and transformation of time were the dimensions less endorsed by both groups of athletes.

Skateboarders, in Seifer and Handerson study (2010), described flow as a transcendent experience, characterized by euphoria, total concentration, narrow focus, unity of mental and physical energy, distortion or suspension of time, and elevated levels of confidence bordering on invincibility. For the skateboarder, being in the zone was an intense subjective experience,

and occasion of peak performance.

Finally the dancers interviewed by Hefferon and Ollis (2006) described flow as a moment of pure belief in oneself, where everything 'just clicks' and the experience is sought out simply for intrinsic enjoyment. When they were in this zone of optimal functioning, which they called the 'bubble', the sense of self faded away, time felt distorted, and complete concentration and intense focus were channelled in a single direction. Predominantly, the dancers' incidences of flow were described as an intrinsically rewarding experience (autotelic experience), perception of adequate ability when facing challenges (challenge-skill balance), and intense concentration on the task at hand in performance.

Similarities in the descriptions of flow experiences across different activities has showed that attaining flow is a thoroughly enjoyable and exhilarating experience linked to optimal mental and physical functioning and the achievement of superior performance. As Jackson and Roberts (1992, p. 168) state "Flow may make the difference between a good performance and a great performance".

2.6 Hypotheses

This study investigates professional ballet dancers' motivational perspectives and their flow frequency, to determine which type of motivation was the most related to the optimal experience. Based on the theoretical relationship, promulgated in qualitative and empirical literature between intrinsic motivation and flow (e.g. Mallet et al., 2007; Jackson et al., 2001;

Hefferon and Ollis, 2006), it was hypothesised that the professional ballet dancers reporting the highest incidences of flow would engage in dance for intrinsic reasons and personal satisfaction, such as enjoyment of the dance while performing, conquering and mastering challenges and perceived themselves competent in their ability as dancers. While dancers who engaged in their activity for extrinsic reasons, such as receiving praise, rewards and recognition, to outperform others to feel successful, or to avoid punishments and feelings of guilt were expected to rarely experience flow. Amotivated dancers were expected to be unable to experience flow. Furthermore, it was also expected that the dancers would be familiar with flow experiences because, as in sport, dance “has rules that require learning a skill, it sets up goals, provides feedback and makes control possible” (Csikszentmihalyi, 1990, p.72). It involves a "blend of performing and competitive aspects, creativity, flowing movements, and continuity of movement" (Jackson, 1992, p.165). As an art form, it is a kind of flow enhancing activity because it “provides a sense of discovery, a creative feeling of transporting the person into a new reality” (ibid, p. 74). Therefore, it was hoped that this research will contribute to developing a better understanding of the professional ballet dancers’ subjective experiences of flow and the particular conditions linked to their achievement of this phenomenon.

The research questions were as follows:

Q1: *What is the relationship between intrinsic motivation and flow in ballet performance?*

Q2: How do professional ballet dancers perceive and articulate the flow experience?

Q3: What are the perceived environmental, social, physical and psychological inhibitors and facilitators of the flow experience?

CHAPTER 3.

METHODOLOGICAL CONSIDERATIONS AND RESEARCH METHODS

This research was guided by methodological choices, embracing pragmatism as the world-view to direct the investigation of professional ballet dancers' experience of flow. The philosophical assumption of this paradigm is that several approaches may be employed in a single study, including valuing objective and subjective knowledge, to address research problems (Tashakkori and Teddlie, 2003a). Both qualitative and quantitative approaches have provided a unique understanding of flow and factors associated with optimal experiences. Jackson (2000), who has been internationally recognized as having made significant contributions to the flow research for the last eighteen years, states that as with all experiential phenomena, flow cannot adequately be quantified numerically or elucidated only by investigative interviewing, and recommends the use of a multi method approach to extend knowledge in the field.

Therefore, the present investigation was designed as a case study, because it concentrated on a small population of professional ballet dancers (54) in the context of one ballet company, at one particular time (Allan and Skinner, 2002) and employed multiple methods of investigation "to obtain different but complementary data on the same topic" (Morse, 1991, p. 122). The study was focusing on professional ballet dancers' flow experiences, their motivational trends linked to the achievement of this optimal state, and the knowledge of conditions influencing positively or negatively flow in dance. Therefore quantitative and qualitative methods were embraced in the investigation to address different but complementary questions, enhancing the interpretability of the results, reducing inappropriate

certainty and to gain a better estimate of the answers (Robson, 2002). The mixed method design consisted of two phases: the first phase allowed measurement of trends, prevalence, and outcomes, while the second qualitative phase allowed examination of meaning, context and process (Grix, 2004).

Quantitative data were collected and analyzed to test a theory and to identify suitable participants for the second phase. The qualitative data were then collected and analysed for alternative tasks: to explore the dancers' subjective experiences of flow and the inhibitors and facilitators of their experiences. The second phase also helped to explain and elaborate on the previous statistical results allowing an interpretation by qualitative account and validation or expansion of quantitative results by analysis of narrative accounts of connections and divergences between the two sets of data (Creswell and Plano Clark, 2007). Overall, this strategy was employed to improve the strength of the study using numbers and narrative, exploiting the benefits of the quantitative method (large sample size, trends and generalization) and of the qualitative method (small number, details, in depth) and non-overlapping weaknesses (Patton, 1990).

Research questions	Research methods
Q1: *What is the relationship between intrinsic motivation and flow in ballet performance?*	Self-completion questionnaires
Q2: How do professional ballet dancers perceive and articulate the flow experience?	Semi-structured open-ended interviews
Q3: What are the perceived environmental, social, physical and psychological inhibitors and facilitators of the flow experience?	Semi-structured open-ended interviews

3.1 Participants

A sample of fifty-four professional ballet dancers, enrolled in one of the most prestigious ballet companies in United Kingdom, participated in the first phase of the study. Of these, 27 were female and 27 were male, from various training regimes and different nationalities, with means of 7.5 years working for the current company, and 8.6 years of professional experience. Participants' ages ranged from 18 to 40+ years (twenty dancers were 18 to 24 years old, seventeen were between 25 to 30 years old, sixteen were 31 to 35 years old, no one was 36 to 40 years old, and only one participant was over 40. The second phase of the study included two female and two male participants who were purposively selected for the interviews. Of the four participants three were aged 25 to 30 years, and one was in the age group 31 to 35 years. The interviews comprised two first artists, one soloist, and one principal, with professional experience ranging from 8-15 years.

3.2. Questionnaire Design

Questionnaires were used to explore the first research question by identifying and investigating the respondents' self- evaluation of motivation and frequency of flow experiences, in order to reveal the relationship between intrinsic motivation and flow. The secondary purpose was to identify suitable participants for the second phase of the study according to their degree of motivation and tendency to experience flow.

The similarities in performance expectations of elite sport performers and dancers suggested that it was feasible to apply instruments to the current study, which were developed and

tested in physical activity contexts. The Sport Motivation Scale-6 (SMS-6) (Mallet et al., 2007) and the Dispositional Flow Scale-2 (DFS-2) (Jackson et al., 2008), which have been shown in past research in sport to be valid and reliable measures, were therefore employed in the present investigation to assess motivational trends and flow experiences in the dance context.

Dispositional Flow Scale-2 questionnaire

The DFS-2 (Jackson and Eklund, 2004) is a self-report instrument, theoretically grounded in Csikszentmihalyi's (1990) nine dimensional conceptualisation of flow, that assesses the participant's dispositional tendency to experience flow on the nine flow dimensions of which the construct is comprised. The scale contains 36 items, four for each of the nine dimensions of flow. Respondents were asked to remember the frequency with which they experience flow in their activity and to rate their responses on a 5-point Likert scale, ranging from 1 (never) to 5 (always) (e.g. " I do things spontaneously and automatically without having to think"). In previous studies the DFS-2 has demonstrated satisfactory levels of reliability, and confirmatory factor analyses showed support for the nine-factor model (Jackson and Eklund, 2004). The DFS-2 did not need to be modified as the items were designed to assess flow across diverse physical activities (see Appendix 1).

Sport Motivation Scale-6 questionnaire

The SMS-6 (Mallet et al., 2007) is a sport-specific self-report instrument, grounded in Deci and Ryan's SDT (1985, 2000) that assesses six forms of motivation reflecting the various degrees of self-determination along a motivation continuum. The SMS-6 was developed

through the revision of the original SMS (Pelletier et al., 1995) with the inclusion of items measuring integrated regulation, concurring with the postulate of Deci and Ryan' SDT (1985). The scale contains 24 items, four for each of the six factors representing the various forms of motivation. Minor adaptations were required: to change the word 'sport' to 'ballet' or 'dance' and 'ballet dancer' to the generic term 'athlete' (see Appendix 2). Respondents were asked why they engage in dance with items such as "because is an extension of me or "for the prestige of being a ballet dancer". Participants responded using a five-point Likert scale ranging from 1 (does not correspond at all) to 5 (corresponds exactly). Inter-factor correlations demonstrated satisfactory levels of construct validity of the SMS-6 in a study by Mallet and colleagues (Mallet et al., 2007). While the concurrent validity was evaluated by examining correlations between the SMS-6 and DFS-2, demonstrating significant positive correlation between the intrinsic motivation factor and factor of the DFS-2, whereas the external and amotivation factor showed negative or no significant correlation (Mallet et al., 2007). These results supported Deci and Ryan's (1985) hypotheses that the individual who is intrinsically motivated is more likely to experience flow because he/she will be interested in the task at hand.

The self-report measures were also employed in the investigation as screening devices to identify suitable participants for the qualitative phase of the study. The dancers were selected on their motivational tendencies and respective frequency to experience flow. The aim was to choose participants exhibiting traits supporting the theoretical relationship between motivation and flow (high motivation-high flow and low motivation-low flow) and possibly, respondents who demonstrated characteristics conflicting with tenets of the flow theory (high motivation/ low flow and low motivation/ high flow).

3.3. Interview Design

After a show, dancers are struck by the diverse personal experiences of their individual performance, and the only way to find out how they felt when entering into a flow state, is to ask them. Interviews were employed to allow the researcher to focus on the meaning of particular phenomena to the participant, gain knowledge of conditions influencing their experiences, and help to clarify and validate quantitative measures in allowing the interviewer to see if the participant's experiences concurred with the rating on the previous measures (Robson, 2002).

The interview schedule had six predetermined questions on flow (Appendix 3), but the order of the questions was modified in the interview process based upon the interviewer's perception of what seemed most appropriate to the emergent discussion, and additional ones were included (Oppenheim, 1966, 1992). The dancers were asked to remember their best and least successful performances to evoke rich descriptions of their flow experiences, and yield information about favourable or adverse conditions for the achievement of this optimal state of consciousness. The researcher listened carefully to the dancers' past experiences of flow whilst performing and rehearsing, and subsequently interpreted the subjective meanings he/she expressed about the occurrence as shaped by his/her own understanding. At the end of the interview, the participants were also asked why they engaged in dance and what ballet meant to them, to check if their motivational tendencies concurred with the results of the previous measure.

3.4. Recruitment and Consent

Once written permission was obtained from the director of the ballet company, the dancers were addressed personally by the researcher and briefed about the procedure and the purpose of the study. To ensure they understood the nature of their participation and to gain their voluntary agreement to participate, willing dancers signed a consent form before completing the questionnaires (Appendix 4). Immediately following a ballet class the two questionnaires (SMS-6 and DFS-2) were distributed to the company. The qualitative phase of the study comprised semi-structured interviews with four participants, each lasting approx. 60 minutes, designed to explore their subjective experiences of flow. Voluntary consent was gained through signing a consent form prior the interviews (Appendix 5). Furthermore, at the end of the investigation, a summary report of the findings from the study will be made available to all the dancers who requested a copy.

3.5 Ethical Considerations: Confidentiality and Anonymity

Questionnaires were coded and pseudonyms were used for the interview data. In line with University of Birmingham Code of Conduct, ethical clearance for research degrees was gained and procedures followed, for example, all data were kept on a password secure computer. Any hardcopies of material were kept in a locked cabinet. The subjects were assured they would not be referred to by name in reports or presentation. Preserving anonymity of the respondents and confidentiality in the questionnaires was unproblematic because of the numerical codes used to identify subjects. The participants were also informed

of their right to withdraw up to the point of submission in the information sheet and consent form, and were assured that if they decided to withdraw from the study, their data would be shredded if in paper copies and deleted from any computer drives if in electronic form.

Every attempt was made to protect the anonymity of the interviewees, but the dancers were internationally known performers and it might be possible to identify them from information in the interview about roles etc. While this is highly unlikely, the respondents vetted their own transcripts and removed anything with which they were uncomfortable (BERA, 2004).

3.6. Self-completion Questionnaires Process

The questionnaires and consent forms were delivered personally to fifty-five dancers, and respondents were left alone to complete the questionnaire, and given a deadline to complete it (2 week). Fifty-four participants returned the questionnaires by the deadline. One dancer found the topic to be distressing at the time, due to injury, and preferred not to be part of the research. The topic seemed to be of interest to the respondents, and several dancers asked to be informed of the results of the study, as a means of improving their performance. Respondents were asked to give feedback on their understanding of the questionnaires. Most of the participants understood the questions and were able to respond, only four participants, three of whom were not English, asked for clarifications on some of the questions of the SMS-6. Not all respondents were willing to complete some of the items, especially the "time at each rank", which they found intrusive and unnecessary. Both questionnaires appeared to translate well across to ballet, but unfortunately none of the participants volunteered

additional personal narrative comment in the box added at the end of the questionnaires for further comments, which it was hoped would help to elucidate and interpret quantitative data.

Completed questionnaires were analysed using SPSS software. Means, standard deviations, range of scores, alpha coefficients were calculated to assess the internal consistency of both scales, a normality test was conducted to select the most appropriate analysis of association, inter-factors correlations were calculated to examine discriminant validity, and correlation between SMS-6 and DFS-2 factors to test the relationship between motivation and flow. This method of data collection ensured a high response rate, accurate sampling and minimum of interviewer bias (Grix, 2004).

3.7. Interview Process

The use of interviews was chosen to enable the researcher to explore, interpret and understand the experience of flow from the dancer's expert position. This kind of inquiry seemed the most suitable because it offered the flexibility to react to the participant's answers, probe for more detailed explanation and allowed the respondent to articulate and elaborate on his/her own experiences and feelings in his/her own words (Allan and Skinner, 2002). Some answers were probed to enable the researcher to gain a better understanding of inhibitors and facilitators of the dancers' optimal experience or to enable cross-referencing with questionnaire's results.

The face-to-face interview was arranged at a time convenient for the participants while the

company was on tour, in a quiet room in the theatre between shows or in the dancer's hotel room to make them feel most comfortable in an uncritical atmosphere. Once the respondents seemed at ease, they were asked to complete the interview consent form where the main purpose of the research was explained. At that point the participants were aware that the interview could last up to an hour and were ready and prepared to talk about their personal experiences of optimal performance.

A brief introduction was made to thank the participants for taking part in the study and confirm permission to tape-record the interview. The interview schedule comprised a first simple opening question asking the participants if they ever experienced, while dancing, a performance that stood out as being special in some way and made them feel good about themselves. The participants were given only a general idea of the topic to promote a spontaneous reaction to the questions and the author kept her role to an absolute minimum to avoid bias and leading the respondent (Oppenheim, 1992; 1996).

Due to the flexible nature of this kind of inquiry, sometimes it was difficult to follow the order of the questions. Most of the respondents were very articulate and fluent, broaching most of the topics from the first question, relegating the role of the interviewer to an attentive friend and colleague who was interested to listen to their memories and feelings attached to those experiences. Every effort was made to interfere as little as possible, sometimes allowing pauses or repeating what has just been said to allow the participants to develop further their own experiences (Allan and Skinner, 2002).

All the dancers seemed at ease during the interview, and opened up easily to the interviewer, not only to the most memorable experiences, but (surprisingly) also to very intimate and sometimes painful events in their careers. The author enjoyed and felt very comfortable in her new 'social role', maybe because she was interviewing peers and friends, while still being able to keep an objective view on their accounts and giving them a sense of relief by voicing certain issues. That may well be different or more complex in future research where the interviewer may not be within the same familiar environment, and not able to gain the participant's trust, and where differences in age, gender and rank could be an important variable in the relationship (Oppenheim, 1992; 1996). To increase eye contact, give full attention to what was being said, and not disrupt the flow of conversation, hand written notes were taken only at the end of each interview, to remember the facial expressions, physical set and reactions of the participants to some of the topics (that were not revealed in the recording and transcription of the interviewees' oral responses).

Transcribing the interviews was as expected a time consuming process, but this procedure forced the interviewer to get close to the data and become familiar with the text prior to the formal analysis. The analytical tool employed in the study was content analysis, which is "a research method for subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (Hsieh and Shannon, 2005, p. 1278). In extracting objective content from texts to explore meanings allowed the researcher to understand social reality in a subjective but scientific manner (Zhang and Whildemuth, 2009).

Each transcript was read carefully several times, and salient themes were highlighted on the

transcript. The themes were compiled into a set of raw data themes for each of the main questions of the interview (nine flow dimensions, facilitators and inhibitors). Some units of text were assigned more than one category simultaneously (Tesch, 1990). All the main themes were summarized for each interview, and idiographic profiles were created for the four participants. Dancers' quotations were used to explain the raw data themes to ensure that the analysis reflected as close as possible the dancers' meanings. Finally, the raw data themes were synthesised into higher order themes. The analysis procedure involved a succession of analyses from inductive, to understand how dancers experience flow and conditions linked to the experience, to deductive, to ascertain whether the dancers' experiences fitted into the theoretical conceptualization of flow proposed by Csikszentmihalyi (1990), and if the inhibitors and facilitators of flow found in the ballet context fitted the coding schemes developed in previous studies in dance and sport (e.g. Hefferon and Ollis, 2006; Jackson, 1996) (transcripts and analysis: Appendix 12, 13 and 14).

CHAPTER 4

PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

Questionnaires and interview data were analyzed in order to address the research questions posed above:

- To answer the first research question (Q1: *What is the relationship between intrinsic motivation and flow in ballet performance?*) 54 questionnaires on motivation and 54 questionnaires on flow were analyzed statistically to understand the relationship between intrinsic motivation and flow. The statistical analysis tested the null hypothesis that there is no relationship between intrinsic motivation and flow.

- To answer the three remaining questions (*Q2: How do professional ballet dancers perceive and articulate the flow experience? (Q3-Q4: What are the perceived environmental, social, physical and psychological inhibitors and facilitators of the flow experience?)* 4 in-depth semi-structured interviews were analyzed, though qualitative content analysis, to gain a deeper understanding of the flow state through the eyes of elite ballet dancers.

- The quantitative and qualitative data were integrated where relevant to triangulate the results of the fifty-four questionnaires on motivation and flow and the findings of the four interviews. Between-subject comparisons were also made from the detailed qualitative information.

4.1. Statistical Analysis of the Relationship between Motivation and Flow

Analysis of the relationship between motivation and flow is the central aim of the study. The first stage of the analysis of questionnaire data is presented in detail in Appendix 6 (motivation), and 7 (flow). Cronbach's Alphas were calculated for each motivation and flow dimension to assess the reliability of the scales, a normality test was conducted to assess if the data could approximate to a normal distribution, and the most appropriate statistical analysis of association for this type of data was selected. Descriptive statistics and inter-factors correlations were calculated for the two scales. In summary the measures of reliability showed that Kendall's tau b was the most appropriate analysis of association.

Table 1 displays the correlation between the motivation and flow dimensions. Pearson's coefficients are reported in the Appendix 8 Table 10 for comparison.

Table 1 Kendall tau b coefficient of association between motivation and flow

	Amotivation	External regulation	Introjected regulation	Identified regulation	Integrated regulation	Intrinsic motivation	SDI	Years of professional experience
Challenge of skill balance	-0.34*	0.24*	0.06	0.15	0.18	0.16	0.21*	0.02
Merging of action and awareness	-0.27*	0.2	0.12	0.23*	0.23*	0.12	0.16	-0.09
Clear goal	-0.35*	0.14	0.07	0.07	0.25*	0.35*	0.37*	-0.23*
Unambigious feedback	-0.04	0.23*	0.06	0.13	0.14	0.01	-0.1	-0.04
Concentration of task at hand	-0.32*	0.02	-0.11	0.08	0.01	0.06	0.19	-0.18
Sense of control	-0.31*	0.12	0.02	0.28*	0.16	0.1	0.14	-0.11
Loss of self-consciousness	-0.02	-0.06	-0.15	-0.02	-0.05	-0.08	0.01	-0.07
Transformation of time	-0.09	0.15	0.14	0.25*	0.15	0.07	0.08	-0.05
Autotellic experience	-0.39*	0.1	0.15	0.3*	0.33*	0.32*	0.35*	-0.27*
Total score DFS2 excl LSC	-0.37*	0.21*	0.09	0.25*	0.26*	0.18	0.22*	-0.17

Significant correlation coefficients at 5% are flagged by ""*

In summary Table 1 showed that:

- The relationship between *Intrinsic motivation* and *Total score DFS-2* was surprisingly not significant (0.18). However, a high degree of association was found with *Clear goals* (0.35) and *Autotellic experience* (0.32), which is the purest form of flow.
- *Integrated regulation*, the most self-determined form of extrinsic motivation, had the highest positive association with the *Total score DFS-2* (0.26). Significant relationships were also found with *Merging of action and awareness* (0.23), *Clear goals* (0.25), and *Autotellic experience* (0.33).
- *Identified regulation*, an extrinsic, but autonomous form of motivation, also had a significant positive association with *Total score DFS-2* (0.25), *Autotelic experience* (0.3), *Sense of control* (0.28), *Merging of action and awareness* (0.23), and *Transformation of time* (0.25).
- *Introjected regulation,* which is a controlling form of motivation, had no significant association with any of the flow dimensions.
- *External Regulation*, the least autonomous form of motivation, was found to have a significant, but unexpected positive relation with the *Total score DFS-2* (0.21), *Challenge skill balance* (0.24) and *Unambiguous feedback* (0.23).
- Among the motivation dimensions, *Amotivation* had the highest negative association with *Total score DFS-2* (-0.37). Significantly negative associations were also observed between *Amotivation* and each of the flow characteristics, with the exception of *Unambiguous feedback, Loss of self- consciousness and Transformation of time*.
- Consistently with the results from the analysis of correlations for flow, *Loss of self-consciousness* was not associated with any of the motivation subscales.

Some studies of motivation and flow in sport disciplines calculate an index as a summary measure of all motivation dimensions: the self-determination index (Vallerand, 1997). The self-determination index (SDI) is calculated as the weighted sum of six motivation characteristics (including Integrated regulation): *SDI = -3xAmotivation-2xExternal regulation-1xIntrojected regulation +1xIdentified regulation+2xIntegrated regulation+3xIntrinsic motivation*

The SDI was calculated for our sample and its relationship with the flow dimensions was analyzed. Significant correlations were found between the SDI and the flow dimensions of Challenge/skill balance (0.2), Clear goals (0.38), and Autotelic experience (0.36) and the overall score of *DFS-2* (0.22). However, the interpretation of the associations should be treated with caution due to the low reliability of some motivation dimensions, and since *External regulation* and *Introjected regulation* showed an opposite sign relationship compared to the one assumed by the SDI. Finally, the results of Kendall-tau b correlation demonstrated that the associations, although significant, were generally weak.

4.2. Discussion of Quantitative Results

The empirical part of this study was motivated by an interest in understanding the relationship between intrinsic motivation and dancers' flow experiences. To recapitulate briefly, previous qualitative and quantitative research in physical activity settings found a positive relationship between intrinsic motivation, self-determined extrinsic motivation, and flow (e.g. Jackson and Roberts, 1992; Jackson, 1995; Jackson and Marsh, 1995; Jackson et al., 1998; Mallet et al.,

2007; Kowal and Fortier, 1999; Gagne' et al., 2003). These studies also showed that non-self-determined extrinsic motivation and amotivation factors had a negative, or no significant correlation with flow. Since the dancers exhibited highly self-determined profiles, these relationships were expected to be replicated in the current study.

The results of the correlation analysis partially reflected the theoretical relationship between motivation and flow. Concurring with previous studies, and congruent with the theoretical postulates underlying SDT (Deci and Ryan, 1985, 1991, 2000, 2008) and the Flow theory (Csikszentmihalyi, 1990), the analysis demonstrated significant correlation between self-determined forms of motivation and flow, showing specifically that *Intrinsic Motivation*, *Integrated Regulation* and *Identified Regulation* were positively associated with several flow dimensions. The dancers who were motivated by *Intrinsic* reasons, such as the excitement and the challenge of the dance, experienced incidents of *Clear goals* and *Autotelic experience*, characterized by clear intention that helped them to focus their attention, avoid distraction and experience a surge of enjoyment and intrinsic pleasure whilst achieving personal goals. The dancers who were motivated by *Integrated* intentions, such as valuing and perceiving ballet as an integral part of their life, also endorsed the dimensions of *Clear goals* and *Autotelic experience*, and furthermore experienced the flow dimension *Merge of action and awareness*, which allowed them to feel a sense of oneness with their movement while performing. The dancers who engaged in the activity by *Identified* means, which were instrumentalities, but accepted and owned as personally important and entailed by personal endorsement and volition, experienced while dancing an heightened *Merge of action and awareness,* a strong *Sense of control* over thoughts and actions, a sensation of *Time Transformation* and found the experience highly enjoyable and self-rewarding *(Autotelic experience)*. Coherently with the

results so far, the dancers who were *Amotivated*, who lacked any kind of motivation to engage in their profession, did not experience flow. Results of correlations among motivation subscales demonstrated, a significantly positive association between *Intrinsic motivation* and *Integrated regulation:* this result is expected and supports the theory that *Integrated regulation* is the most self-determined form of motivation after the *Intrinsic motivation* (Deci and Ryan, 1985, 1991).

Contrary to the expectation *Intrinsic Motivation* was not significantly correlated to the *Total score DFS-2*. The two autonomous forms of extrinsic motivation, *Integrated* and *Identified regulations,* were found to be the most positively and significantly associated to the total flow. Demonstrating that, the dancers with the highest flow experiences found ballet highly rewarding, and perceived it also as a way to achieve personal and external goals, which in being identified as personally valuable or harmoniously integrated with the self, led to gratifying feelings (Deci and Ryan, 1985, 2008). Scrutiny of the scores and specific items measuring *Integrated regulation* showed that the participants who had the highest incidences of flow, engaged in ballet because it was consistent with their deepest principles, it was an integral part of their life, it was an extension of themselves, and it was part of the way in which they had chosen to live their life (Appendix 1). The second highest association to the overall flow was found among the dancers who engaged in their activity by *Identified* means, such as: to maintain good relationships with friends, because ballet was one of the best way they have chosen to develop other aspects of their life or to learn things which were useful in other area of their life (ibid). Furthermore, Identified Regulation, which obtained the lowest average score from the dancers' responses, was found to be associated with the highest number of flow dimensions (4). These results showed that fostering autonomous extrinsic

motivation among this sample of dancers would be highly beneficial to their achievement of flow experiences.

Although *External Regulation* reached very low average score from the dancers' responses, it obtained a surprisingly significant positive correlation to the Total DFS-2 and the *Challenge-skill balance* and *Unambiguous feedback* dimensions of flow. This unexpected association suggested that the participants motivated to engage in ballet in order to demonstrate their competence to others, or for the material and/or social benefits of being a ballet dancer, were also able to experience flow because confident in their abilities in the presence of challenges and able to monitor and correct their actions in performance (see Appendix 9 for further interpretation). This unusual result was also found in previous research. Mannell, Zuzanek, and Larson's study (1988), found that extrinsically motivated individuals who engaged in leisure activity, reported high instances of flow. This finding contradicts those of other studies and according to Mannel and colleagues it has raised questions about the theoretical relationship between extrinsic motivation and flow (Mannel et al., 1988).

It was also found that *Years of professional experience* had a significant negative association with *Intrinsic motivation, Clear goals, and Autotelic experience,* and high positive correlation with *Amotivation*, indicating that with time, participants were likely to decrease their motivation to dance, lose the clarity of their goals and enjoyment of performing. A defining characteristic of intrinsic motivation is the need to master and conquer optimal challenges (Deci and Ryan, 1985; 2000). Dancers may find it hard to pursue former goals, and enjoy performing towards the end of their career when technical levels start declining and challenging roles became too demanding. When the dancers lose confidence in their ability,

their feeling of competence is thwarted and consequently has a negative impact on their motivation (Vallerand, 1997).

It was also observed that the items measuring *Introjected regulation* were not highly correlated to any of the flow's dimensions, and were not as relevant to the dancers' motivation profiles, showing that they were unlikely to participate in dance to avoid feelings of guilt, anxiety or to attain ego enhancements (Deci and Ryan, 2000). An unexpected result of correlations among motivation subscales was also detected. *External regulation* and *Introjected regulation* had a positive sign relationship with a more self-determined form of motivation. This result is surprising since we would expect *External regulation* and *Introjected regulation* to have an opposite sign relationship with a more self-determined form of motivation. Therefore there remains a possibility that generally weak associations, and association indicators that contradict expectations may also have influenced the results.

4.3. Interpretative Analysis of the Interview Data: Dancers' flow experiences

This part of the study investigates in greater detail professional ballet dancers' subjective experience of flow using Csikszentmihalyi's (1990) conceptual model as a base. To understand a ballet dancer's experience of flow and to ascertain a dancer's awareness of the flow experience, four selected participants were interviewed, and their transcripts analyzed by means of qualitative content analysis. To reiterate, the purposive sample of four dancers comprised two who demonstrated motivational characteristics and respective propensity to experience flow which was congruent with the theoretical relationship between motivation

and flow (High Motivation/High Flow and Low Motivation/Low flow), and two who did not comply with the flow theory (Low Motivation/High Flow and High Motivation/Low flow) (see Appendix 10 for profiles). To double-check their motivational profiles, the dancers were asked in the interviews why they engaged in dance and what makes them go on dancing. The dancers' narrative comments offered in interviews corroborated the responses obtained from self-completion questionnaires (Appendix 11).

As the main aim of the qualitative inquiry is to investigate dancers' episodes of flow, drawing on their personal experiences, the participants were asked to remember a performance or rehearsal that stood out as being optimal, and to describe in their own words how it felt to be in the optimal state. All four dancers mentioned themes that fitted at least into three or more dimensions of flow, with participant HM/HF covering seven out of the nine dimensions (Appendix 12). Some dancers described simultaneously several flow dimensions in their accounts of optimal experience. Despite individual differences in intensity and frequency, all the dancers seemed to be familiar with the flow experiences, and valued them very highly. The participant LM/LF, who had extremely high amotivation, experienced the lowest flow incidences. On these rare occasions (only when reassured by positive comments from other people) she experienced feelings of joy and accomplishment only as a kind of afterthought (LM/LF line 18), but not whilst she was dancing.

According to Jackson (2000) flow is not easy to achieve, but once attained the individual knows clearly that what he/she is experiencing is an optimal psychological state. Flow involves nine particular characteristics that create this very positive state of consciousness,

and lead to an enjoyable, intrinsically rewarding experience. It is also known from the literature that the experiences of flow lead to positive affect, which in turn predict happiness (Maddux, 1997; Jackson, 2000). The dancers felt a surge of enjoyment when experiencing flow and described their most vivid memories as special times in their dancing career describing them as "*performances that stick in my mind"* (HM/HF) or "*just a memory I will never forget*" (LM/HF), and "*always the ones that I have in my mind, it's like I want to get back there*" (HM/LF). Jackson and Csikzentmihalyi (1999) believe that the positive emotions associated with flow experiences are a source of motivation for individuals undertaking physical activity, because once experienced they often seek to return to that optimal state. The aspect of flow that was the most salient to this particular group of dancers was: *Challenge skills balance, Unambiguous feedback, Sense of control* and *Autotelic experience.* All the flow dimensions described in the transcripts are reported in the following sections to give us a broader picture of the dancers' experiences of flow.

Challenge skills balance

Analysis of the dancers' transcripts and the results of the quantitative survey showed that Challenge skills balance was one of the most dominant dimensions with a surprisingly positive association with the least self-determined form of motivation (*External Regulation).*

According to Jackson and Eklund (2004), to experience the first dimension of flow, the dancers require a positive balance between the challenges they are about to face and the skills they think they have. If they perceive that the challenge is too low, they are likely to be bored and lose interest, if it is too high they probably experience anxiety (Csikszentmihalhyi, 1990).

It is only when the challenge and skills are equally matched, or just above one's ability, that they are able to go beyond their personal levels and reach flow (ibid). The structure of dance at elite level provides daily opportunities to extend one's potential while striving for higher and more complex physical, technical, mental and artistic challenges, therefore presenting an ideal setting to experience this dimension of flow.

From the information gathered in the interviews, the dancers felt that the roles they were given were generally within their capability and on a level commensurate with their skills. Moreover, three dancers were confident in their ability to meet challenges beyond their present level, through hard work, persistence and determination. These were the type of dancers whom Jackson and Csikszentmihalhyi (1999), referring to athletes, were able to convert difficult or novel situations into challenges to overcome rather than insurmountable obstacles to progress. A highly motivated male dancer (HM/HF) recognized the personal significance of challenge, a theme emphasized by most of the interviewees:

> *"I like the challenge, yeah, I always have done, and I think for me, as I say, Swan Lake was one of those cases where I had it on such a high pedestal that I knew that my expectation of someone doing that role was very high, so I had to really raise my game and my level, my standard really to reach that. So that's why, for myself, I had to put in a lot of effort and extra work to do that, to get there" (HM/HF 455-459).*

Employing a sporting metaphor, another highly motivated female dancer (HM/LF), recalled the importance of setting challenges in rehearsal and clearly expressed the way she felt in the following quotation:

> *"You get that moment in rehearsal, revelation, like 'I can do this, I can really do it', and if you can sort of keep that, keep feeding that feeling, so I keep raising the bar and make it harder or expect more from yourself and keep meeting those*

challenges, then that's a really good way to build up for a performance I think" (HM/LF 309-312).

Furthermore, the importance of challenges in career development was recognized by this male soloist and well captured by his statement:

" I feel like a lot of the roles that get given to me are a challenge. In fact, every role that gets given to me is a challenge, so my ability is just below that. I work, put effort in so that I reach that level. So as long as I do put the practice in and the effort in and the rehearsal time in, most of the time I'll reach that level, I think" (HM/HF 440-444).

As it will be discussed later and further explained, the male dancer with low motivation, who practices daily Buddhist meditation, is able to endorse through control of his mind five of the nine flow characteristics, including a positive balance of skills while facing challenging situations: *"What I thought was sort of asking the impossible suddenly became possible …things started to work, you know, I felt I could do things. I started to realize that I did actually have the potential somewhere to be able to do this". (LM/HF 27-31)*

Jackson and Csikszentmihalhyi (1999) stressed that when challenge is perceived to be severe, confidence becomes a critical component in the challenge-skill equation. The dancers' perceived skills' (that is their self-estimate) of what he/she has to achieve in order to accomplish a goal rather than their actual objective natural skills that is essential to success (ibid). Realistically, perhaps even pessimistically, a highly motivated, but low flow principal female respondent seemed to underestimate her achievement and lacked confidence in her ability to succeed. This quotation may explain the low incidences of flow experiences of HM/LF participant:

> *"I think I always feel there's quite a challenge. Erm, I think I never perceive anything as easy I don't think, especially even if you think it's quite easy you try and make it something far more and try and… But I think, you know, generally I always… I think I always feel under, never quite having made it (HM/LF 325-329).*

Jackson and Csikzentmihalyi label the challenge-skill dimension as the "golden rule of flow" (1999, p. 16), since none of the other dimensions can be experienced without it. It was observed from the transcripts, that most of the dancers have a positive attitude towards challenges, are able to increase their skills and push their boundaries of accomplishment through hard work, therefore increasing their chances to endorse more of the other flow characteristics.

Action awareness merging

Although this dimension was one of the most salient that emerged from the analysis of the quantitative data, it was mentioned only by one interviewee. Furthermore, and to reiterate, the statistical analysis of the questionnaires data showed a significant correlation between *Action awareness merging* and *Integrated Regulation, Identified Regulation,* and a significant negative association with *Amotivation*. This indicates that the dancers with self-determined extrinsic motivation are likely to endorse this dimension of flow, while the ones who completely lack motivation experience it less. The dancer LM/HF described the flow experience as totally absorbing, producing complete unawareness of and isolation from anything around him and the complete absence of self-evaluation: "*I think in terms of emotional feeling it didn't really click until the end of the variation when people did show their appreciation and applause. When I'm actually dancing I was really just sort of in the zone, I was concentrating on the job*". *(LM/HF 69-71*)

Clear Goals

Jackson and Csikszentmihalhyi (1999) emphasized that a performer's physical preparation is essential to the achievement of flow and increasing skills, together with clear aims and specific strategy for goal attainment. A goal to be achieved needs to be believed 100%, desired and thought beforehand (ibid). The crucial importance of setting clear goals was emphasized by both dancers with high motivation profiles (HM/HF and HM/LF).

Empirical work had shown in this study that *Clear Goals* was the dimension of flow most frequently experienced by this sample of 54 dancers (mean score= 15.80), and was significantly correlated with both self-determined forms of motivation: *Intrinsic* and *Integrated Regulation*. The interviewees who operated with clear goals, were well aware of the significance of foresight and clear thinking in striving to achieve optimal performance, which was perfectly described by the highly motivated female principal:

> *"I was dancing but I was thinking ahead… it just lasted all the way through…I was very conscious of everything that was going on and had, as I say, a very clear thought pattern ahead of what I wanted to do, erm… and I didn't feel the nerves that I'd normally felt, I was just like 'Go for it, just do it', yeah" (HM/LF 17-33).*

Unambiguous feedback

Of equal importance, according to Csikszentmihalhyi (1990) in addition to clear goal setting is continual monitoring of performance and progress towards these goals. Clear and unambiguous self and independent evaluation monitors progress and structures personal strategy (Jackson and Csikszentmihalhyi, 1999).

As expected *Unambiguous feedback* was one of the three most prevalent dimensions

mentioned in the interviews. The quantitative analysis found that this dimension displayed an unpredicted significant positive correlation with *External Regulation,* suggesting that the dancers with least self-determined kind of motivation are able to experience this particular characteristic of flow. The unambiguous feedback dimension was interrogated by means of a general open question on loss and regaining of concentration. Three interviewees identified unambiguous feedback with feelings of heightened awareness, strong mental control after setbacks, and clarity of thoughts. A highly motivated male soloist responded pensively:

> *"I almost lost it, like almost came back to reality, it was in the very end, the coda, you have to run round the stage, and I like slipped and nearly fell over, but then straight after that I did the most amazing pirouette of my career, so I guess… I don't know if that helped me, to bring it back, yeah" (HM/HF 41-44).*

The dancers were also asked if they were able to monitor their own performance. The male first artist, with low overall motivation, seems to have acquired thought meditation total mental control and awareness in performance, which was clearly expressed in the following statements:

> *"When I would aim for that particular, erm, aspect or correction, when I've met it then I know the step will work, you know" (LM/HF 74-76. "It's about awareness isn't it, erm, and I am aware of it…I am aware of everything (LM/HF422-425). If something does go wrong, which like I said it will do at some point, it just means that I can bring the concentration straight back and it doesn't affect me" (LM HF 438-440).*

<u>*Concentration on the task at hand*</u>

In response to a question direct by control and confidence, all four dancers felt that they were able to achieve control over their mind and body in performance only when totally focused on a specific task. In agreement with Csikszentmihalhyi's (1990) model of flow, when in this

state the subjects felt that they were able to exclude any external or internal, physical or psychological distraction and maintain this narrow focus throughout the performance. Paradoxically while concentrating totally on the task in hand, and immersed in the self, they all experienced an extraordinary and inexplicable awareness of everything and everyone around them, a kind of peripheral psychological perception, which neither distracted or influenced them in any way.

The importance of concentration on the task was emphasized by most of the 54 respondents to the flow questionnaire, generating the second highest mean score, which was endorsed in the interviews. All four interviewees affirmed the priority they attached to total task orientation. Whilst feeling in tune with his performance, and totally absorbed on the task, a highly motivated soloist said that although he was aware of the audience he: *" just completely got into it, completely just do it…I really cut them out (audience)…. You could see actually who was there, but to me they weren't there" (HM/HF 37-40).*

The participant LM/HF, through daily mental training, is able to reach very deep concentration states, which allows him to collect means and have control over his actions in performance. Therefore, despite a low motivation score, this male first artist dancer reported a strong focus on the task and perhaps not surprisingly a complete absence of emotional involvement:

> *"I was concentrating on the job, and the only things that I was thinking about was… I was thinking very little, I was thinking minimal amounts and just key points, like bullet points, you know, I was thinking these things, which S. had pointed out to me, what I needed to aim for. These were the only things that I was focusing on. I didn't have any kind of emotion, it was just a very sort of neutral…. It was quite a deep form of… it was quite a deep concentration, I had particularly good concentration" (LM/HF 72-80). "I've got complete*

awareness…awareness of the body is heightened, awareness of… special awareness is heightened, hearing, sight, whatever, its all heightened" (LM/HF 429-433).

He further explained that he knew when he was in full flow and how he handled distractions: *"I can sort of push that thought away and then move my attention back to that point" (LM/HF 465-4). "My mind is fully focused and I'm in that zone" (LM/HF 211).*

Sense of control

The result of the quantitative data demonstrated that *Identified Regulation* had the highest association with this dimension of flow. From the results of the questionnaire, the four interviewees reported very low levels of identified regulation, but clearly articulated in the interviews their sensitivity to the exercise of total control over their performance, which was accompanied by complete self-confidence and secure self-esteem. The dancers' sense of control derived initially from their confidence in their ability to accomplish the task in hand, which Jackson and Csikszentmihalhyi (1999) had observed protects performers from making mistakes and from fear of failure. The four dancers recalled feeling calm, relaxed, confident and well prepared to face the unexpected:

"Yeah, I felt in control of it" (LM/LF 31-33); "I felt able to relax" (HM/LF 57); "Stress just went completely out of me" (HM/HF 24); "I feel pretty confident" (LM/HF 489); "I felt more confident than I expected" (LM/LF 26); "I didn't feel the nerves that I'd normally felt" (HM/LF 33); "I'd controlled the nerves, I ended up doing things that I'd never done in rehearsal" (HM/HF 353-356); "I knew there was a lot of pressure on it but, I didn't let it effect me" (HM/HF 58-59); "I remember just being completely… I just didn't care about anything, and everything I did I was like I did that my best" (HM/LF 13-14).

The male soloist (HM/HF), had a pragmatic approach to 'nerves' and harnessed the energy

released:

> *"It's important to know that that's a normal feeling of nerves and not to be scared of it, and kind of embrace it almost, and I think that's what I tried to do with the Swan Lake show" (HM/HF 341-342). "If I have a little stumble I'm always very aware of it, but even though I'm aware of it I try not to let it affect the rest of my performance, because I've had performances where something goes wrong and straight afterwards almost tried to make up for it instead of letting it affect the rest of my performance and worrying about it, you know" (HM/HF 377-380).*

Surprisingly responses to the questionnaire, showed that, at least for these 54 dancers, correlation between *Sense of control* and *Years of experience* was not significant, though two of the interviewees emphasized the importance of experience and professional maturity:

> "*I don't know whether it came through experience or age, maturity, I've learned to… you know, that nerves are not necessarily a bad thing and with nerves comes adrenalin, and adrenalin can be destructive if you don't know its coming or if its there and you don't know how to use it" (HM/HF 333-336).*

and

> "*Erm, I'm more in control now, it used to be really hit and miss, I wouldn't know if something would work, but now I think things are a lot calmer and I've learned kind of how to control my body a lot more" (LM/LF 350-352).*

Often levels of expectations and pressure increase with experience. Thus, control may not have increased with experience, but the dancers may be able to control more and more demanding situations the longer they have been dancing.

Loss of self-consciousness

Jackson and Eklund (2004) observed, in their investigation of different disciplines, that *Loss*

of self-consciousness was weakly rated by dancers, ice skaters and gymnasts for whom it was important to be continually aware of the body and self during performance. In line with their claim, the results of the interviews confirmed that this dimension was not a significant component of the dancers' flow experiences. Furthermore, statistical analysis of the questionnaire data showed that this dimension returned the lowest scores, and was eventually excluded from the total score of flow because it was not correlated with any other flow dimensions.

Transformation of time

According to Jackson and Eklund (2004) transformation of time is generally strongly endorsed by performing artists. Contrary to our expectations, the result of the analysis of the questionnaires, showed that *Transformation of time* was the second to least (after loss of self-consciousness) experienced by our sample of dancers, and was only associated with *Identified Regulation*. Only one participant mentioned this dimension in the interviews and described it as the *"Time stood still a little bit" (HM/LF 30).* This feeling of altered perception of time gave her in turn clarity of thinking and confidence in her ability to execute the steps:

> *"When rehearsal's are going really well or a show, you know, as I said, time stands still a little bit, it all slows down and there's time to, erm, think ahead and be really conscious of what's going on, and 'Oh I'd really like to do this, I'd really like to do that', and you somehow manage, you have time to fit it all in, erm, yeah, those few occasions" (HM/LF 340-343).*

Autotelic experience

Enjoyment, central to flow, is captured in the ninth dimension, termed autotelic experience. As the end product of the other eight dimensions the experience is highly enjoyable and

intrinsically rewarding (Csikzentmihalyi, 1990). This dimension had one of the highest mean scores in the analysis of the questionnaires, and was positively correlated, with all self-determined types of motivation. It was also one of the most salient dimensions to emerge from the dancers' interviews. In response to the question about the actual subjective experience of performing while in flow the dancers used a wide range of terms to describe this exhilarating experience. For example: *" The best, one of the best moments…it was a feeling of euphoria… it was a great feeling" (LM/HF), " I just enjoyed it, just enjoyed the performance 100%...you feel amazing… massive sense of achievement"(HM/HF)*. Others describe it evocatively as no pain, empowerment and inexhaustible energy:

> *"It made me feel, erm, amazing, and just want to get back on stage and carry on dancing and, you know, do it all over again, and you feel invincible and you feel, er, proud. Yeah, just immense satisfaction, and I wasn't tired or I didn't feel, you know, sore toes or sore legs, I wasn't as out of breath, I was… had much more stamina. Yeah, it was good, good times" (HM/LF 24-27).*

The experience of being in flow was unanimously described as a joyful and personally rewarding moment. When the mind and body are in complete harmony and performance approaches levels above personal average, enjoyment is intense and often the most well remembered aspect of the flow experience. Jackson and Roberts (1992) found quantitative correlational support for a link between flow and peak performance, operationally defined as one's best ever performance. The HM/HF perceptive observation captures the transcendent essence of the autotelic experience:

> *"It was the best I'd danced, ever… and I did things that I didn't manage to do in rehearsal. I remember I pulled in for one pirouette and did eight, yeah, and everything just worked. I ended up having more strength at the end of the coda. I didn't feel tired at that point. Yeah, it was weird, it was weird [laughs]… that was the first time I experienced that feeling of 'everything works'… I was enjoying it, just really enjoyed it" (HM/HF 26-31).*

4.4. Inhibitors and Facilitators of Flow

The second aim of the qualitative enquiry was to identify factors that may positively or negatively influence professional ballet dancers' flow experiences. Jackson (1996) selected 'elite-level' athletes for her qualitative investigation of flow based on the assumption that participants at high levels skills were likely to set themselves challenging tasks and would, therefore be more familiar with the concept of flow. Thus, it was expected 'experienced' dancers to have a rich resource base from which to identify the potential antecedents and inhibitors of flow. Throughout interpretative and deductive analysis of the four transcripts it was possible to identify and categorize themes from which to conceptualize a sequence of psychological, social, physical, and environmental factors that were salient in the dancers' experience of flow. Analysis of the dancers' responses suggests that certain inhibitors and facilitators were conflated under more than one factor. For example, physical, environmental and social factors, although analytically distinct, could interact empirically to exert a psychological impact on their optimal experiences.

Psychological Factors

Confidence

Concordant with the findings of Jackson's (1992, 1996) qualitative work, which found confidence a major contributor to the athletes' experiences of flow, the dancers perceived *confidence* to be one of the most predominant facilitators or inhibitors of the optimal experience. Confidence is defined in the literature as the certainty that the individual is equal to the task at hand as result of an absolute belief of his ability to succeed (Bandura, 1997:

Vealey and Knight, 2002). In line with Csikszentmihalyi's flow theory (1990), the interviewees felt able to achieve flow, only when they felt confident and believed in their abilities to:

- Meet the physical challenge of the choreography (challenge-skills balance);
- Be able to focus and maintain concentration during performance (concentration on the task at hand);
- Be able to regain focus promptly after setbacks (sense of control and unambiguous feedback).

The dancers' responses suggested that they were able to enhance their confidence through *total commitment* and *intensive rehearsal period* (physical and psychological factor), which allowed them to *plan ahead*, *visualize* every detail of their performance and made them feel *mentally prepared* and *focused*. Knowing that the steps worked enough times in rehearsal increased their belief in their ability to be successful in performance, allowed them to concentrate on the aesthetic side of the choreography, immerse themselves in the role, able them to relax and enjoy the full experience, and consequentially increase their chances to get into flow. A male respondent replied without hesitation describing his ideal build up to a successful performance:

> *"Feeling that I've prepared and practiced the steps… Yeah, just visualizing each part of the performance, that's important for me...I think the preparation...in practicing each step you become more comfortable with them, and then in turn more confidently you can do them…confidence that you can do it, yeah, it gives you even more confidence. Yeah, if you feel confident that you can do a good show you're able to relax into it and enjoy it" (HM/HF 212-224).*

Supportive and constructive *feedback from the coach* (social and psychological factor) was also crucial to the level of confidence achieved by the dancers in rehearsal and performance. Speaking for their colleagues the male soloist dancer clearly state: *"… my confidence? I guess feedback from the management, they can instil you with confidence or let you know how you're doing, and I think that's something that's important really" (HM/HF 420-422).*

When the coach displayed discouraging or unclear feedback towards the dancers, exhibited a lack of engagement and interest in their preparation towards performance, or was not perceived as knowledgeable, the interviewees' confidence was often undermined and acted as an inhibitor to their flow experience. A female first artist described how her evaluation of a negative feedback affected psychologically her perceived ability to succeed in performance:

> *"Erm, the only time I feel not able to do it is when my confidence has been knocked by management …Its only when someone's said something, you know, then I think 'Oh my God, no, I'm not good enough, I can't do it, I can't do it' (LM/LF 294-300). And then it came to the shows and every single show ….I just couldn't, I just went to pieces because he'd had a go at me in rehearsal, and then that was it, and its been years and years that I've had problems (LM/LF 53-56). Maybe it's his bad management that makes us fall over by speaking to us in such a way" (LM/LF 171-174).*

A central characteristic of flow is one's perception of his/her ability to meet the demands of a task (Csikszentmihalyi, 1975). Jackson and Roberts' (1992) quantitative study on collegiate athletes, and Jackson and colleagues (Jackson et al., 1998) qualitative study of masters athletes, revealed a significant association between flow and perceived ability, demonstrating that participants of high-perceived ability experienced flow more often than the ones of low perceived ability. The interviewed dancers unanimously felt that through constructive

corrections, praise or criticism the coach was able to direct them by giving feedback on progress and instilling self-belief.

Poor Concentration

Another significant psychological factor, which inhibited the dancers from achieving flow, was *poor or lack of concentration* in performance. The participants with the highest incidences of flow (HM/HF and LM/HF), as shown by the quantitative and qualitative data, were often confident in their ability to maintain and regain concentration during rehearsals and performance (concentration on the task at hand, sense of control and unambiguous feedback). The dancer with HM/HF perceived challenging or novel situations as a mean to push his boundaries of accomplishment and increase skills, and he is able to overcome them by narrowing his attention and rejecting irrelevant cue from his consciousness; while participant LM/HF, through meditation, is able to achieve total control of his actions and thoughts in performance and rebound from setbacks promptly refocusing his mind on the task. Dancers with low flow experiences (HM/LF and LM/LF) often felt their attention drifting away and were aware of self-doubt during performance. These participants were conscious of irrelevant thoughts, which made them feel anxious and panic. They were often unable to recover from mistakes, and consequently unable to enjoy their performance and achieve flow. The female first artist, with low motivation and low flow experiences stated that when facing setbacks: *" I do find myself kind of spiralling down and I do find it harder and harder to pick myself up (LM/LF 58-62).* While, employing a metaphor, the highly motivated female principal perfectly described her volatile concentration on stage:

> *"I think my mind just sometimes doubts itself too much on stage… all the*

questions in your mind and 'what if', you know. I think sometimes that makes me lose my focus (HM/LF 269-273)…I am like a butterfly I think on stage, my mind is flapping about (HM/LF 278-279)… I can't really focus, and that's something I'd like to be better at, is just to sort of be able to not focus on what I haven't done but actually focus on what I have done and what's gone well and let that channel me through (HM/LF 221-225).

She furthermore expresses her despair and her inability to regain focus in adverse conditions:

"Even if one thing's gone wrong, it's sort of everything after that, even if everything after that doesn't go wrong its affected mentally (HM/LF 36-37) ...when its going well I think I can tell, and that feeds me and then that sort of pushes you on… generally its either going well or its not"(HM/LF 250-257).

The interviewee has shown throughout the transcript to be familiar with the optimal experience, describing eloquently several flow episodes over the first few minutes of the interview. Unfortunately, poor concentration and inability to recover from mistakes in performance were recurrent emerging themes from the participant' transcript, which clearly acted as inhibitors of her flow experiences.

Two of the interviewees were unable to achieve flow because they tended to lose concentration when experiencing 'stage fright': a term commonly used in the performing arts to describe performance anxiety, which is defined as "a state of nervousness or apprehension concerning performing before an audience" (Clark, 1989, p. 30). The male first artist recalled episodes of apprehension throughout his career, addressing his problem through daily meditation. Evoking past memories he explained that:

"Fear can be crippling as a performer, I mean, stage fright can cripple people, and it has to me in the past, to the point where I couldn't do anything, I could hardly walk. … it was disabling, I couldn't think, I couldn't focus, I couldn't learn anything, erm, really not good at all (LM/HF 120-129)… Its like that sort

> *of feeling, I don't know, like when you're in a theme park and you're going to go on a scary ride and you're really nervous, and basically it starts and then its just all over with in a second, and then that minute or two minutes of that ride, you can't even remember it, you know, because your anxiety has just blocked the experience out of your mind completely" (LM/HF 293-297).*

Resonating with this poignant reverie, Lockwood's (1989) study of musicians showed that the somatic aspects of performance tension, as well as the cognitive and emotional reactions, affected the concentration, memory and the overall outcome of the performance of those artists. The interviewees from the present study who experienced high levels of anxiety in performance were unable to achieve flow because they lacked total focus on the activity, complete task absorption and sense of control, which are defining characteristics of the optimal experience (Csikszentmihalyi, 1975). With a sorrowful expression a female participant reflecting on her harrowing experience of distress and despair:

> *Just absolute panic, and kind of almost… I don't know, sort of removed from myself because I didn't want to experience it, so like my head would be kind of like floating off somewhere else but I'd be trying to focus, but I'd be kind of drifting …I didn't want to be there (LM/LF 254-255). When I'm scared of something… I just kind of go through the motions… what I thought was going to happen happened', because I'd given up pretty much before I've gone on (LM/LF 224-227).*

This traumatic account of stage fright will be familiar, to a certain extent, to almost everybody who has performed professionally. To alleviate anxiety and maintain control and focus, most dancers developed pre-performance routines. Some used meditation, Pilates, warm up sequences, stretching, or listened to music while putting their makeup on to zone out from everybody else and avoid banter in the dressing rooms. Others just relaxed, had a catnap to regain energies, mentally rehearsed or visualized the choreography or had to be ready on stage

in plenty of time to go over steps. Previous studies in sport have shown that pre-performance routines, such as relaxation or imagery, used prior to competition have great benefit on the athletes' overall performance (Cohn, 1990; Gould et al., 1999; Greenleaf et al., 2001). Imagery, which is often used by athletes as a preparation strategy, has shown to affect positively motivation, quality of the experience (Short et al., 2004), and enhance performance (Murphy and Martin, 2002). A higher achiever (highly motivated male soloist), emphasize the importance of pre-performance routine, by visualizing his perfect performance before to go on stage:

> *"I'm a person that I imagine the perfect, in inverted commas 'perfect', perfect performance, I try to visualize it beforehand, and usually I visualize a lot higher than my capabilities, but that helps me to reach for better I think (HM/HF 302-304).*

Lack of Psychological Skills

Three of the interviewees drew attention to the lack of psychological support and professional mental training in dance (which only focuses on the artistic and technical preparation), as an inhibitor of their optimal experience. Csikzentmihalyi (1990) stated that flow experiences are not as easy to attain, and to be able to achieve them the individual requires a certain level of psychological skills, such us ability to control attention. Therefore, the more proficient dancers are using psychological skills, the more likely they will be able to experience flow due to developing greater concentration and control over their thoughts and emotions during performance. One of the dancers emphasized that when dancing:

> *"It's strange because it's like… I don't know, like physically, like ability-wise in control of, rehearsals and on stage, they're kind of the same, but then its more*

the mental thing that will knock me" (LM/LF 352-354), and another one was convinced that: *"more support on the psychology side would be good" (HM/LF 225).*

Furthermore a male interviewee added that unfortunately: "*One thing that isn't addressed in this career is the mind… everything is focused on the body…we're not taught how to take care of the mind and it's really important" (LM/HF 325-332).*

Both athletes and dancers perform in a social and professionally critical setting, and require mental skills such as thought control, concentration, and anxiety management, to be able to perform well (Maisel, 1994; Murphy, 1996), and ultimately achieve flow. Psychological skills (especially optimal arousal and tension management) were found to be critical to the athletes' achievement of flow in Jackson and colleagues (Jackson et al., 2001) quantitative work. Schoen and Estanol-Jonson (2001) state that psychological services, which are fairly new in dance, are mainly pathology-focused than performance-enhanced. They further explain that the challenge to expand the knowledge of sport psychology into the performing arts must be addressed by skilful consultants, which to achieve credibility and gain the confidence and understanding of the professional ballet community will need to carefully translate, with the use of pertinent language, sport analogies to the dance population.

Social Factors

Relationship with the Coach

Support and feedback from a *coach* was a theme broached by all four participants when asked

to reflect on factors, which could enhance or inhibit their optimal experience. The female principal dancer clearly stated: *"For me mentally being ready is number one, and having the support from, you know, a coach that I trust and, yeah, that they've really sort of gone into detail with me, I think, yeah, consistency of input from other people" (HM/LF 167-169).*

This sentiment was shared with the male soloist who described how an experienced and compassionate ballet master was able to improve the quality of his experience in performance:

> *"I think whoever's coaching you, that they can have a big influence on your performance. … I could feel that he cared about my show as much as I did, and he was working just as hard as me to get me to do the best performance I could, and that really helped, really helped. I got the impression he was quite proud, because he'd coached me and the performance did go very well" (HM/HF 252-263).*

Partner Relationships

The information gathered from the dancers' interviews coincided with the findings of Jackson's (1992) qualitative study of skaters, which showed that the relationship and chemistry between *partners* was perceived as a vital facilitator of their flow experience in performance. The dancers felt the need to be comfortable and at ease with their partners, to trust them in performance, and having their physical and emotional support. Furthermore, being perfectly synchronized and fully absorbed in the choreography helped them to immerse each other into the characters and enabled them to achieve flow. A male soloist described how his partner positively affected the quality of his experience and performance:

> "*I really enjoyed performing with A., she made me feel comfortable, and also she is the sort of person that really gets into a role and really immerses herself in the*

> *role, and that's how… that inspired me…. (HM/HF 117-119) if somebody's opposite you acting 100% believing… you can kind of remove yourself from reality and put yourself into a different character that you actually believe" (HM/MF 130-132).*

This perceptive observation reflects Csikszentmihalyi's (1990, p. 74) claim that "the activities that provided a sense of discovery, a creative feeling of transporting the person into a new reality" are the ones, which enhance flow. Therefore the dancer should be likely to experience flow when engrossed in an imaginary character and deeply involved in his/her surreal world while performing.

Music Conductor and Orchestra

Music was perceived both as an inhibitor or facilitator of the dancers' optimal experience. The dancers loved performing with a live orchestra, and found that the music often enhanced their performance because it can "*inspire you…it can be utterly moving and it can rally you (HM/LF 87-90), and … It keeps you literally on your toes (LM/LF 376)… it can really drive you and push you" (HM/LF 347-348).*

Occasionally, when the conductor played an unexpected and unrehearsed tempo, the music was perceived as a distraction, and therefore one of the most influential inhibitors of their flow experience. The interviewees found that:

> *"If the conductor is running away from you or doing a completely different thing… it can completely destroy you…he pull out the music or speed it up, he can just flick your mind out of the moment and suddenly you start to go into worry mode again (HM/LF 345-353)… he can spoil or make a performance for you" (HM/HF 172).*

Peers

Relationship with the other members of the company had direct effect on the flow experiences of both low motivated dancers (LM/HF and LM/LF). The male first artist, who practices meditation, perceived the moral support from other dancers as highly inspiring and acted as a facilitator of his optimal experience. While the extremely amotivated female was constantly affected by the pressure and comments of other people, and while seeking acceptance and overstating her colleagues' judgments, she had completely lost belief in her abilities and consequencially any chance to achieve flow. This participant stated that she danced "*mainly for the approval of people…just so then, socially, you can kind of be accepted…"(LM/LF 180-182)*. Conversely, the two highly motivated participants (HM/HF-HM/LF) believed that if they were mentally and physically ready for the show, social or external problems were not a distraction to their performance.

Physical Factors

Preparation, Injuries and Fatigue

All four dancers believed that in order to achieve flow they needed to feel *physically prepared* for the performance through *intensive rehearsal*, feeling *in tune with the body* and being *injury free*. The dancers volunteered that they took great care of their bodies, ate wisely and ensured that they had enough sleep the night before the show. They all attached particular importance to the warm up, flexing and stretching muscles and joints and performing cardio-vascular exercises immediately prior to performance. The female principal recognized unequivocally that to perform at the best of her ability and increase her chances to achieve flow she needed to *" mentally know I've done everything I can…physically being fit and*

working hard, so that you feel strong enough to tackle a role, I think that makes me feel confident about myself"(HM/LF 295-297).

Conversely, when feeling *unprepared* because of inadequate rehearsal or unfamiliarity with the choreography; if carrying an *injury* or *fatigued,* all four dancers felt that they were unable to concentrate fully on the performance and were unlikely to experience flow. Remembering a less successful performance, a male soloist described how fatigue and pain had affected his focus on stage:

> *"I was a bit more tired… I maybe relaxed a little bit, yeah, maybe got a little bit content… I didn't have the same energy or standards and I didn't get the same feeling out of it…I probably wasn't as focused, I probably didn't prepare as well, probably a bit more blasé going into the performance… I probably didn't commit myself 100% to it, if you know what I mean, like physically and mentally.... I remember my legs being very tired and my body was hurting a lot, so that could have been why I wasn't 100% focused on it" (HM/HF 88-101).*

Environmental Factors

Stage settings

As might be expected, performing in *unfamiliar settings* was the most predominant environmental inhibitor of flow. Lack of time to rehearse on stage to get used to the new size of the *stage,* bright and blinding *lights,* slippery or sticky *floor* and *props,* were all environmental elements which seemed to be detrimental to the dancers' ability to experience flow. One of the participants reflected on what is a universal professional preoccupation:

> *"I've had performances where I haven't had a stage call and just gone into the show, and it's really hard because you turn around and the wing is a foot closer than you expect it to be, or there's a prop that you didn't think was going to be there and stuff like that, or the lights affect you more than you thought they would. If you don't have any experience of feeling that environment then it can inhibit your performance" (HM/HF 443-547)*

This particular ballet company undertakes frequent country and world tours, which confront the dancers with unfamiliar theatres and very little time to adjust. The respondents all emphasized the vital importance of consistency in transfer from rehearsal to stage, particularly to comparable *floor* surfaces, which often affect the quality of their dancing and level of confidence in performance.

Costumes and Shoes

Costumes and ballet shoes play an important symbolic role in ballet mystique and have always excited the public imagination, but they are also critical technical components of the art. The respondents, whiteout exception highlighted the need to feel comfortable and unrestrained in *costumes* and *footwear* so that they could concentrate fully on their performance. The principal dancer was an advocate for the profession:

> "*Costume plays a big part, and I think certainly, you know, say if it's too tight or it doesn't bend …the studio rehearsals are going fantastically and then suddenly we practice with the costume and, you know, the whole movement element changed and the pas de deux was so difficult with it… that's a big factor, but I think that can be eliminated by rehearsal time in costume (HM/LF 82-86).*

The only dancer, who was not affected by any of the environmental factors, was the male first artist who emphasized again the power of a meditative state over all external distractions. When asked to recognize any possible perceived environmental inhibitors, he responded immediately:

> "*You can blame the floor and you can blame the audience and blame the lighting, whatever, erm, but essentially mind, these are inputs to the mind and it's how we process this, … say if I let myself be affected by external factors then it will be a detriment to the performance… its come from the mind (LM/HF 233-*

236)…when I'm meditative there is no factor outside of me which will distract my performance, no factor. It doesn't matter what it is, whether it's a strong light or whatever, because the mind is always going to be there, I'm always going to pull the mind back to the concentrated state" (LM/HF 226-228)

4.5. Reflections on Qualitative Results

Inductive and interpretative analysis of the interviews data demonstrated the unequivocal importance of the most influential components, which enhanced or constrained dancers' flow experiences. Without priority these were: *confidence, maintaining an appropriate focus, mental and physical preparation, adequate rehearsal time, fitness and freedom from injuries, constructive feedback and good relationship with the coach, positive interaction with a partner, dancing on an expected and comfortable speed* (live orchestra). The obverses of these qualities, plus non-optimal environmental conditions (stage, light, floor, props, costumes and shoes), were all recognized by the dancers as obstacles to the achievement of flow.

The aim of the qualitative investigation was to explore in depth professional ballet dancers' articulation of the experience of flow. The analysis of the interviews revealed that the dancers experienced flow echoing the descriptions of the previous literature (Jackson, 1992, 1996). Also, high association to Csikszentmihalyi's (1990), and Jackson and Csikszentmihalhyi's (1999) conception of flow, were observed from the dancers' accounts of the optimal experience.

The analysis of the interviews provided a detailed dance specific picture of flow state in professional ballet dancers. *Clear goals, Concentration on the task at hand* and *Autotelic experience,* were generally the dimensions most endorsed by the total sample of 54 dancers. While, out of the seven dimensions emerged from the transcripts, *Challenge-skill balance*, *Unambiguous feedback, Sense of control* and *Autotelic experience* were the most representative to the participants being interviewed. The perceived abilities to succeed toward goals (*Challenge-skill balance*) and highlighted awareness of actions in performance (*Unambiguous feedback*) gave the dancers total control over their mind and body (*Sense of control*), transforming the dancing into a highly enjoyable and intrinsically rewarding experience (*Autotelic experience*). The vivid and articulated descriptions of flow demonstrate that the dancers were familiar and very fond of these experiences.

Overall, this investigation extended the examination of the flow construct from sport to dance, expanding the knowledge base about antecedents and consequences of this optimal mental state.

CHAPTER 5.

CONCLUSION

This study explored dancers' experiences of flow and described their motivational characteristics aiming specifically:

- To measure empirically how motivation articulates with dancers' ability to experience flow and closely examine the relationship between intrinsic motivation and flow;
- To understand a flow experience from a ballet dancer's perspective;
- To identify factors that potentially facilitates or inhibits the achievement of this optimal state.

Motivation and flow were examined at a contextual level through self-completion questionnaires and semi-structured interviews based on the theoretical postulates underlying Deci and Ryan's SDT (1985, 2000) and Csikszentmihalyi's flow theory (1975, 1990). The information gained through the empirical part of the study gave an overall picture of motivational trends and the frequency of flow experiences of the entire sample, creating a foundation and structure, within in which to continue and develop the investigation. The qualitative data gained from the interviews provided an in-depth interpretation of four dancers' subjective experiences of flow, and made it possible to ask supplementary questions to follow up interesting responses and probe more deeply into relationships between the dancers' attitudes and behaviour in order to qualify and elucidate questionnaire responses.

Overall, the predictions made with respect to the relationship between motivation and flow

was supported. Analysis of the questionnaire data demonstrated that the dancers with self-determined profiles experienced higher incidence of flow than the participants with non-self-determined profiles, while amotivated dancers were unlikely to experience flow. Descriptive statistics indicated that the participants engaged in ballet mainly for *Intrinsic* reasons, such as for the pleasure and excitement of performing, and for the personal satisfaction felt while mastering and perfecting skills. Although, this type of motivation was highly associated with the dimensions of Autotelic experience and Clear Goals, it was not found to be the most beneficial to the overall attainment of the dancers' flow experiences. *Integrated motivation* attained the most significant association with the Total score, demonstrating that the dancers moved by autonomous extrinsic intentions, which were fully internalized and integral with their own principles as ballet dancers, were able to achieve the highest frequency of flow incidents. The statistical results also demonstrated that the dancers' optimal experiences were mostly characterized by clarity of goals *(Clear goals)*, narrow focus of attention *(Concentration on the task at hand)*, and intrinsically rewarding and enjoyable feelings of accomplishment *(Autotelic experience)*. The dancers to a certain degree experienced all nine dimensions of flow; *Loss of self-consciousness* and *Time transformation* were the least relevant characteristics of their optimal experience.

The second part of the study allowed the author to go beyond quantitative constraints allowing her to interpret and understand the experience of flow from the dancers' expert position. Fitting into Csikszentmihalyi's (1990) proposed model of flow, the subjective accounts of dancers' optimal experience provided rich descriptions of flow specific in dance furthering the knowledge of factors associated with the achievement of this optimal psychological state.

The most representative characteristics of the interviewees' optimal experiences were found to be: perceived balance between the challenges of a situation and capacity to accomplish the demands *(Challenge-skill balance),* continual monitoring of performance and progress towards goals, and ability to surmount difficult situations *(Unambiguous feedback),* total control over their performance *(Sense of control),* and exhilarating feeling of self-reward gained from the experience *(Autotelic experience).* As expected, and congruent with the results of the quantitative data and with the theoretical relationship between motivation and flow, the analysis of the interviews demonstrated that the participant with the highest self-determined motivation (HM/HF) had the highest incidences of flow, while the most amotivated dancer in the sample (LM/LF) had very rare experiences of flow throughout her career. Considering the unusual correlation between motivation and flow observed in the results of the empirical data, two participants who exhibited unexpected associations between their motivation tendency and propensity to experience flow were also interviewed. Contrary to the theory, the analysis of their transcripts revealed that the highly motivated participant (HM/LF), had sporadic flow experiences due to lack of belief in her ability to reach the challenge (weak *Challenge/skills balance*), poor concentration (weak *Concentration on the task at hand*), lack of control over her actions and thoughts in performance (weak *Sense of control*), and most of all, incapability to regain focus after setbacks (weak *Unambiguous feedback*). In contrast, a (predominantly self-determined) low motivated dancer had high incidents of flow due to his total mental and physical control acquired through meditation (*Sense of control),* extremely narrow focus in performance (*Concentration on the task at hand*), and highlighted awareness of actions (*Unambiguous feedback*). Therefore, to a certain degree, not only motivational differences seemed to have influenced their propensity to experience flow, but also innate or educated psychological skills.

Through analysis of the dancers' subjective accounts and perceptions of optimal experience, agreement was found with previous research of the inhibitors and facilitators of flow experiences in sport (Jackson, 1992, 1995, 1996; Jackson and Roberts, 1992; Jackson, et al., 1998; Jackson, et al., 2001). Psychological factors such as confidence were found in this study, as in previous research of flow in sport, to be the most influential inhibitors of the dancers' optimal experience. To experience flow the dancers needed to feel confident in their ability to meet the challenge, confident to be able to take control of their actions and thoughts in performance, and confident in their ability to focus and regain concentration when needed. The participants stated that they were able to enhance and foster their self-belief by receiving constructive and supportive *feedback* from the management, and feeling *physically and mentally prepared* for the performance (through extensive rehearsals time). Furthermore, concordant with the findings of Hefferon and Ollis' (2006) study on flow in dance, unexpected tempi from the *conductor, lights, settings, floor, props* and *costumes* were all dance specific social and environmental inhibitors of the dancers' optimal experience. While disagreeing with their results, the audience (social factor) did not have a direct effect on the dancers' flow experiences. The knowledge of factors associated with the attainment of this optimal mental state could be an important tool in the future, to those (dancers themselves, director, choreographers and coaches) interested in the quality of dancers' experience and performance.

5.1. Limitations of the Study

The results of this study are limited by the scope of this investigation, which examined flow from a strictly motivational perspective based on the theoretical postulates underlying SDT,

on a particular group of dancers of one specific ballet company. We recall that our sample has a relatively small size (54 dancers) and, hence, not representative of the whole population of professional ballet dancers. We cannot exclude the possibility that the poor reliability of some subscales may also have influenced the results. The motivation scale was not developed with this specific population (elite ballet dancers), therefore making some of the subscales unclear for the participants, or maybe not appropriate and applicable to dance. For example the content of the introjected regulation's items were irrelevant to these participants, suggesting that dancers did not engage in their activity to avoid feelings of guilt or as a way to keep in shape (e.g. "Because I must exercise regularly" or "Because I would feel bad if I was not taking time to do it"). This may also explain surprising associations between some subscales of motivation, and consequentially between motivation and flow. Mallet et al. (2007) argued that measuring motivation is problematic due to the difficulty of finding the correct words for the subscales to capture the essence of the different forms of motivation. Therefore, an additional revised version of the motivation scale with items pertinent to dance would be beneficial to future investigations in the ballet world.

The two research methods employed in this study required different theoretical and empirical approaches to design implementation and analysis, each of which generated complementary data. The phenomenon of Flow is a subjective optimal experience, which like most experiential phenomena, cannot easily be pinned down by objective psychometric tools. On the other hand whilst the qualitative approach has provided rich descriptions of flow and investigation of its associated factors, the results are only representative of the four dancers interviewed. The weakness of the research was that being an insider and having a previous working relationship with the participants may have actually constrained the dancers'

responses and affected the author interpretation of their answers, because of her own pre-conceptions (Robson, 2002). However, as an insider, the researcher was able to empathise with the dancers' lives and experience. Having gained the dancers' trust, she obtained an extremely high response rate and rich data, which would have been difficult for an outside researcher to achieve. Subjective experiences are illusive and difficult to research; hopefully the methods used in this study have produced authentic explanatory data and insight into the under-researched construct of flow in ballet.

5.2. Directions for Further Research

Overall, it was essential to examine specific motivational constructs with theoretical relevance in order to understand what kind of motivational or psychological process might be contributing to the quality of the dancers' optimal experiences. Moreover, understanding the factors that accompany successful dancers' flow experiences, as implied by Jackson (1995), would provide a basis for individualized training programs and coaches' feedback based upon the dancers' personal need and input, designed to help them experience flow, and make this optimal mental state more accessible in future. There is support in the literature for the assumption that flow is a precursor of peak performance (e.g. Jackson and Roberts, 1992; McInman and Grove, 1991), therefore the more frequently dancers are able to experience flow, the more likely they will be to execute a superior performance. Finally, it would be interesting to replicate this study on other samples of ballet dancers working within similar institutions to compare results and experiences found in this specific style of dance. And, furthering that, data could be analysed using a multiple regression analysis to ascertain which type of motivation predicts each singular characteristic of flow or the overall flow experience.

To complement the limited number of variables that were assessed in this study, future investigations could also examine additional variables such as perceived ability, psychological skills, and motivational climate to further elucidate the understanding of flow in dance.

APPENDICES

APPENDIX 1

MOTIVATION QUESTIONNAIRE

MOTIVATION QUESTIONNAIRE

Please provide some information about yourself:

Sex F M	Years of professional experience ……..
Age 18/24 25/30 31/35 36/40 40+	Rank in the company ……
Nationality……..	Numbers of years with the current company ……
Place of training ……	Time at the rank or in each rank .....

WHY DO YOU ENGAGE IN DANCE? Different people have different reasons for engaging in dance. Please indicate, using the scale below, to what extent each of the following items corresponds to one of the reasons for which you are presently involved in dance. Please note that there are no right or wrong answers and no trick questions. We simply want to know how you personally feel about dance. Please answer honestly. Your responses will be held in confidence and only used for the research purposes.

DOES NOT CORRESPONDS AT ALL	CORRESPONDS A LITTLE	CORRESPONDS MODERATELY	CORRESPONDS A LOT	CORRESPONDS EXACTLY
1	2	3	4	5

1) For the excitement I feel when I am really involved in the activity	1	2	3	4	5
2) Because it's part of the way in which I've chosen to live my life	1	2	3	4	5
3) Because it is a good way to learn lots of things which could be useful to me in other areas of my life	1	2	3	4	5
4) Because it allows me to be well regarded by people that I know	1	2	3	4	5
5) I don't know anymore; I have the impression of being incapable of succeeding in ballet	1	2	3	4	5
6) Because I feel a lot of personal satisfaction while mastering certain difficult training techniques	1	2	3	4	5
7) Because it is absolutely necessary to do ballet if one wants to be in shape	1	2	3	4	5
8) Because it is one of the best way I have chosen to develop other aspects of my life	1	2	3	4	5
9) Because it is an extension of me	1	2	3	4	5
10) Because I must do ballet to feel good about myself	1	2	3	4	5
11) For the prestige of being a ballet dancer	1	2	3	4	5

12) I don’t know if I want to continue to invest my time and effort as much in ballet	1	2	3	4	5
13) Because participation in ballet is consistent with my deepest principles	1	2	3	4	5
14) For the satisfaction I experience while I am perfecting my abilities	1	2	3	4	5
15) Because it is one of the best ways to maintain good relationships with my friends	1	2	3	4	5
16) Because I would feel bad if I was not taking time to do it	1	2	3	4	5
17) It is not clear to me anymore; I don’t really think my place is in ballet	1	2	3	4	5
18) For the pleasure of discovering new performance strategies	1	2	3	4	5
19) For the material and/or social benefits of being a ballet dancer	1	2	3	4	5
20) Because training hard will improve my performance	1	2	3	4	5
21) Because participation in dance is an integral part of my life	1	2	3	4	5
22) I don’t seem to be enjoying ballet as much as I previously did	1	2	3	4	5
23) Because I must exercise regularly	1	2	3	4	5
24) To show other how good I am at ballet	1	2	3	4	5

Key for SMS-6:

Amotivation	Q: 5, 12, 17, 22
External regulation	Q: 4, 11, 19, 24
Introjected regulation	Q: 7, 10, 16, 23
Identified regulation	Q: 3, 8, 15, 20
Integrated regulation	Q: 2, 9, 13, 21
Intrinsic motivation	Q: 1, 6, 14, 18

APPENDIX 2

ACTIVITY EXPERIENCE SURVEY

ACTIVITY EXPERIENCE SURVEY

HOW DO YOU FEEL DURING TRAINING AND PERFORMANCE? These questions relate to the thoughts and feelings you may experience during participation in dance. Please answer the following questions in relation to your personal experiences in dance. Read the following statements carefully and circle the number that best represents how you feel. There are no right or wrong answers. Think about how often you experience each characteristic during training and performance and circle the number that best matches your experience. Please answer honestly.

NEVER	RARELY	SOMETIMES	FREQUENTLY	ALWAYS
1	2	3	4	5

1. I was challenged, but I believed my skills would allow me to meet the challenge.	1 2 3 4 5
2. I make the correct movements without thinking about trying to do so.	1 2 3 4 5
3. I know clearly what I want to do.	1 2 3 4 5
4. It is really clear to me how my performance is going.	1 2 3 4 5
5. My attention is focused entirely on what I am doing.	1 2 3 4 5
6. I have a sense of control over what I am doing.	1 2 3 4 5
7. I am not concerned with what others may be thinking of me.	1 2 3 4 5
8. Time seems to alter (either slow down or speed up).	1 2 3 4 5
9. I really enjoy the experience.	1 2 3 4 5
10. My abilities match the high challenge of the situation.	1 2 3 4 5
11. Things just seem to happen automatically.	1 2 3 4 5
12. I have a strong sense of what I want to do.	1 2 3 4 5
13. I am aware of how well I am performing.	1 2 3 4 5
14. It is no effort to keep my mind on what is happening.	1 2 3 4 5

15. I feel I can control what I am doing.	1 2 3 4 5
16. I am not concerned with how others may be evaluating me.	1 2 3 4 5
17. The way time passes seems to be different from normal.	1 2 3 4 5
18. I love the feeling of the performance and I want o capture it again.	1 2 3 4 5
19. I feel I am competent enough to meet the high demands of the situation.	1 2 3 4 5
20. I perform automatically, without thinking too much.	1 2 3 4 5
21. I know what I want to achieve.	1 2 3 4 5
22. I have a good idea while I am performing about how well I am doing.	1 2 3 4 5
23. I have total concentration.	1 2 3 4 5
24. I have a feeling of total control.	1 2 3 4 5
25. I am not concerned with how I am presenting myself.	1 2 3 4 5
26. It feels like time goes by quickly.	1 2 3 4 5
27. The experience leaves me feeling great.	1 2 3 4 5
28. The challenge and my skills are at an equally high level	1 2 3 4 5
29. I do things spontaneously and automatically without having to think.	1 2 3 4 5
30. My goals are clearly defined	1 2 3 4 5
31. I can tell by the way I am performing how well I am doing.	1 2 3 4 5
32. I am completely focused on the task at hand.	1 2 3 4 5
33. I feel in total control of my body.	1 2 3 4 5
34. I am not worried about what others may be thinking of me.	1 2 3 4 5

35. I lose my normal awareness of time.	1 2 3 4 5
36. The experience is extremely rewarding.	1 2 3 4 5

Would you be willing to be interviewed at later stage by appointment?

YES **NO**

If you answered 'Yes' please make contact with Ambra via pigeonhole.

Please feel free to write any further comments:

Thank you

Key for DFS-2:

1. Challenge-skill balance	Q. 1, 10, 19, 28
2. Merging of action and awareness	Q. 2, 11, 20, 29
3. Clear goals	Q. 3, 12, 21, 30
4.Unanbiguous feedback	Q. 4, 13, 22, 31
5. Concentration on the task at hand	Q. 9, 18, 27, 36
6. Sense of control	Q. 8, 17, 26, 35
7. Loss of self-consciousness	Q. 7, 16, 25, 34
8. Transformation of time	Q. 6, 15, 24, 33
9. Autotelic experience	Q. 5, 14, 23, 32

APPENDIX 3

INTERVIEW SCHEDULE DANCERS

INTERVIEW SCHEDULE-DANCERS

While dancing, have you ever experienced a performance that stands out as being special in some way for you and made you feel good about yourself?
Please think about your personal past experiences on stage and in rehearsal and answer the following questions in relation to them. I am interested in how you perceive and articulate the optimal experience in your "own words". Please feel free to speak about any particular conditions that you think can facilitate or inhibit the occurrence of those experiences.

1. *Are you aware of 'special performance' moments in your dancing experience?* (Prompts: If yes, how did they feel? description? When? Where? With? Etc.).

2. *Reflecting on these experiences are there special things about the environment that you think have an influence?* (Prompts: theatre or studio, music, partner, role, costume, audience, etc).

3. *Again reflecting on these experiences – are you aware of any special pre – state conditions, routines or events that you link with achieving optimal performance?* (e.g. preparation class, warm up, exercises, meditation…)

4. *From your personal perspective do you connect these experiences with any inner factors?* (Prompts such as levels of concentration, self-consciousness, skill challenge, familiarity with steps, awareness of others, sense of time, whose watching / passing judgement?).

5. *When you have a less successful performance are you aware of what changes?* (Prompts: environment, partner, role, audience, distractions, change of routines, self-consciousness, others passing judgement etc.).

6. Do you think more could be done to help you to achieve this optimum performance state more often? (Prompts rehearsal, environment, routines etc).

APPENDIX 4

QUESTIONNAIRES DANCERS' INFORMATION

SHEET & CONSENT FORM

QUESTIONNAIRES- DANCERS' INFORMATION SHEET & CONSENT FORM

My name is Ambra Vallo and I am conducting research for my M-Phil degree in dance at the University of Birmingham.

The main purpose of this study is to investigate factors that may affect the likelihood of classical ballet dancers achieving optimal performance. Optimal performance is defined as experiencing highest levels of technical and expressive competence in performance and I am interested in your views on this.

As part of this investigation I am asking classical ballet dancers to complete a questionnaire designed to assess their motivation and precursors of optimal experiences. Participation is voluntary and participants are asked to complete a consent form stating that they agree to participate before completing the questionnaire.

Questionnaires will be anonymous with only number codes to protect identities. All responses will be confidential and only made available to the lead researcher and her two supervisors. Data will be stored on a password secure computer and any paper copies will be kept in locked cabinets. Paper data will be shredded and computer based documents will be deleted from any hard drives ten years after the completion of the study.

Participants are free to withdraw from the study at any time until submission of the study. They will be provided with an overview of the study findings if they request one. This can be done by contacting the lead researcher using the contact detail provided below.

Phone: [redacted] Email: [redacted]

PARTICIPANTS' CONSENT FORM

I ….....agree to participate in this study, I understand that I may withdraw from the study at any time until the study is submitted and that my personal details and the data I provide will be confidential. I have read the participant information sheet and understand the purpose of the study, and what participation involves. Any questions I had have been answered to my satisfaction by the lead researcher.

Signed …..... Date ….....

Witnessed by: …..... Date ….....

APPENDIX 5

INTERVIEWS- DANCERS' INFORMATION

SHEET & CONSENT FORM

INTERVIEWS- DANCERS' INFORMATION SHEET AND CONSENT FORM

My name is Ambra Vallo and I am conducting a research for my M.Phil degree in dance at the University of Birmingham.

The main purpose of this study is to investigate factors that may increase or affect the likelihood of classical ballet dancers achieving optimal performance. Optimal performance is defined as experiencing highest levels of technical and expressive competence in performance and I am interested in your views on this.

As part of this investigation I am seeking four volunteer dancers who are prepared to talk with me for about an hour in an interview about their personal experiences of optimal performance. Identities will be protected. Pseudonyms will be used in writing up the study, transcripts of the interviews will be sent to participants for agreement and names of the dancers involved will remain confidential to the researcher. Participants are free to withdraw from the study at any time until the study is submitted.

Subject to informed consent, an interview time and place convenient to the Company and the dancers will be negotiated. Individuals will be encouraged to speak freely about their personal experiences for a maximum of 60 minutes. Subject to permission the interviews will be recorded using a Dictaphone and transcribed to a word document. Data will be stored on a password secure computer and any paper copies will be kept in locked cabinets. All data collected in paper form will be shredded, and computer based documents will be deleted from any hard drives, ten years after the completion of the study. Participants will have access to their own results and they will also be provided, on request, with a summary of the study findings. This can be done by contacting the lead researcher using the contact detail provided below.

Phone: [redacted]
Email: [redacted]

PARTICIPANTS' CONSENT FORM

I …..... agree to participate in this study, I understand that I may withdraw from the study at anytime and that my personal details and the data I provide will be confidential. I have read the participant information sheet and understand the purpose of the study, and what participation involves. Any questions I had have been answered to my satisfaction by the lead researcher.

Signed …..... Date ….....
Witnessed by: …..... Date ….....

APPENDIX 6

ANALYSIS OF MOTIVATION QUESTIONNAIRE

ANALYSIS OF MOTIVATION QUESTIONNAIRE

The first step in the analysis of the questionnaire was to assess the reliability of the scale. To recapitulate, the SMS-6 questionnaire included six motivation subscales that exist along a self-determination continuum (Deci and Ryan, 1985, 1991): *Amotivation, External regulation, Introjected regulation, Indentified regulation, Integrated regulation* and *Intrinsic motivation*. Each subscale was measured with a score calculated as the sum of the scores obtained from four items.

The Cronbach's alphas, a popular measure of reliability in psychology research, were calculated for each motivation dimension on the basis of its four-item scale. The reliability analysis, reported in Table 1 showed values below generally accepted levels. A general rule of thumb for the interpretation of the alpha suggests "good" alphas should be higher than 0.7 (see Nunnally, 1978). However, because of the relatively small sample size, all motivation dimensions with alphas greater than or equal to 0.56 were considered low, but adequate and were included in the analysis. A similar approach was found in Martin and Cutler's (2002) research of flow and motivation in theatre actors.

The column with header "Alpha Total" shows the Cronbach's alphas calculated for each motivation dimension on the basis of all the items. The column with header "Alpha without" shows the Cronbach's alpha calculated after excluding a specific item in a subscale.

Table 1. **Reliability analysis on motivation dimensions**

Item	Alpha Without	Alpha Total
Amotivation Q1	0.88	
Amotivation Q2	0.85	
Amotivation Q3	0.80	
Amotivation Q4	0.85	
Amotivation Total		*0.88*
External Regulation Q1	0.60	
External Regulation Q2	0.69	
External Regulation Q3	0.78	
External Regulation Q4	0.70	
External Regulation Total		*0.75*
Introjected Regulation Q1	0.50	
Introjected Regulation Q2	0.53	
Introjected Regulation Q3	0.64	
Introjected Regulation Q4	0.56	
Introjected Regulation Total		*0.62*
Identified Regulation Q1	0.24	
Identified Regulation Q2	0.33	
Identified Regulation Q3	0.33	
Identified Regulation Q4	0.56	
Identified Regulation Total		*0.44*
Integrated Regulation Q1	0.56	
Integrated Regulation Q2	0.45	
Integrated Regulation Q3	0.58	
Integrated Regulation Q4	0.49	
Integrated Regulation Total		*0.60*
Intrinsic Motivation Q1	0.80	
Intrinsic Motivation Q2	0.72	
Intrinsic Motivation Q3	0.68	
Intrinsic Motivation Q4	0.82	
Intrinsic Motivation Total		*0.81*

The alpha calculated for *Identified regulation* was extremely low at 0.44. *Integrated* and *Introjected regulation's* alphas were also low (0.60 and 0.62 respectively). Subsequently, the alphas were recalculated by excluding one item at a time within the subscales. This step was taken to assess if the reliability could be improved by modifying any of the sub-scales. The reliability of *Integrated regulation* could not be improved by deleting any of its sub-items. However, it was possible to improve the alpha of *Introjected regulation* from 0.62 to 0.64 by excluding the third sub-item (*Because I would feel bad if I was not taking time to do it*). The alpha of *Identified regulation* also improved from 0.44 to 0.56 after deleting the fourth sub-item (*Because training hard will improve my performance*).

Table 2 includes a statistical description and the Cronbach's alpha of the six motivation subscales. There were no missing responses, hence the motivation dimensions could be observed on all 54 dancers. The scores can vary from 4 to 20, since each item is graded on a scale from 1 to 5, and each dimension includes 4 items.

Table 2 **Descriptive statistics and Cronbach's alphas for the motivation dimensions**

	Minimum	Maximum	Mean	St deviation	Alpha
Amotivation	4	20	6.69	3.75	0.88
External regulation	4	15	7.43	3.05	0.75
Introjected regulation	3	11	5.69	2.27	0.64
Identified regulation	3	11	5.26	1.92	0.56
Integrated regulation	4	18	10.65	3.00	0.60
Intrinsic motivation	7	20	14.59	3.19	0.81
Years of professional experience	1	23	8.69	5.14	

It is noted that the respondents obtained the highest average scores for *Intrinsic motivation*, and *Integrated regulation*, therefore displaying, on average, high levels of self-determined forms of motivation. *External regulation, Introjected regulation* and *Amotivation* respectively

had lower scores. *Identified regulation* was the type of motivation attaining the lowest mean score. The sample included dancers with a high range in number of years' experience, from 1 to 23.

Rationale for selecting Kendall-tau b

In the next step of the analysis the relationship between each pair of motivation dimensions was examined. Pearson correlation coefficient, the most well-known association measure, detects any linear relationship between a pair of variable. However, Pearson's coefficient requires that the data are continuous and normally distributed. When the data are ordered, not normal and include ties (two or more respondents obtain the same score), Kendall's tau b is preferred to Pearson's coefficient. A normality test was conducted to assess if the data could approximate to a normal distribution. For most of the motivation variables the test was rejected (Table 3).

Table 3 **Normality test on flow and motivation dimensions**

	Coeff.	Sig. (2-tailed)
Amotivation	5.02	0.000
External regulation	1.75	0.000
Introjected regulation	1.22	0.003
Identified regulation	0.81	0.034
Integrated regulation	0.44	0.274
Intrinsic motivation	0.61	0.108
Years of professional experience	0.81	0.034
Challenge skill balance	0.97	0.014
Merging of action and awareness	0.43	0.302
Clear goals	0.74	0.051
Unambiguous feedback	0.75	0.047
Concentration on task at hand	0.73	0.053
Sense of control	0.70	0.064
Loss of self consciousness	0.57	0.131
Transformation of time	0.78	0.040
Autotelic experience	0.57	0.129

Hence, the associations between the motivation dimensions were calculated using Kendall-tau b (Table 4). Pearson's coefficients are reported in table 5 for comparison.

Kendall-tau b measures association between two variables on the basis of the similarity of their orderings, and can have values between -1 and 1. A value of 1 indicates a perfect positive association: for example, higher scores of *Intrinsic motivation* correspond to higher scores of *Integrated regulation*. A value of -1 indicates a perfect negative association: lower scores of *Amotivation* correspond to higher scores for *Intrinsic motivation*. A value of 0 indicates no association.

Table 4 **Kendall tau b coefficient of association for each pair of motivation dimensions and Years of professional experience** (lower diagonal).

	Amotivation	External regulation	Introjected regulation	Identified regulation	Integrated regulation	Intrinsic motivation
Amotivation						
External regulation	0					
Introjected regulation	0.07	0.68*				
Identified regulation	-0.01	0.55*	0.54*			
Integrated regulation	-0.15	0.48*	0.47*	0.38*		
Intrinsic motivation	-0.37	0.04	0.22*	0.14	0.59*	
Years of professional experience	0.22*	0.06	0.03	-0.09	-0.11	-0.37*

Significant correlation coefficients at 5% are flagged by ""*

Significantly positive association were found between *Intrinsic motivation* and *Integrated regulation*. Strong positive associations were detected between *Identified regulation, Integrated regulation, and Introjected regulation.* Finally, significant relationships were also reported between *External regulation, Introjected regulation, and Integrated regulation.*

However, the relatively low reliability of *Introjected*, *Identified*, and *Integrated regulations* need to be taken into account when interpreting these relationships.

Kendall tau between *Years of professional experience* and the motivation characteristics was calculated, showing interestingly that *Amotivation* had a significantly positive association with the *Years of experience*. This result is coherent with the significantly negative association that is observed between *Intrinsic motivation* and *Years of experience*.

Similar results were found with Pearson's correlations, which are reported below for comparison.

Table 5 **Pearson's Correlation for the motivation dimensions**

	Amotivation	External regulation	Introjected regulation	Identified regulation	Integrated regulation	Intrinsic motivation
Amotivation						
External regulation	0					
Introjected regulation	0.07	0.68*				
Identified regulation	-0.01	0.55*	0.54*			
Integrated regulation	-0.15	0.48*	0.47*	0.38*		
Intrinsic motivation	-0.37	0.04	0.22*	0.14	0.59*	
Years of professional experience	0.22*	0.06	0.03	-0.09	-0.11	-0.37*

APPENDIX 7

ANALYSIS OF FLOW QUESTIONNAIRE

ANALYSIS OF FLOW QUESTIONNAIRE

The questionnaire on flow captures nine dimensions. The numerical representation of the flow dimensions is similar to the questionnaire on motivation. Each dimension is represented by a score calculated as the sum of the scores obtained in each question. Scores can vary from a minimum of 4 to a maximum of 20, as each characteristic includes 4 questions with score values ranging from 1 to 5.

The reliability analysis (Table 6) showed generally high alphas, greater than or equal to 0.70. The column with header "Alpha Total" shows the Cronbach's alphas calculated for each flow dimension on the basis of all the items. The column with header "Alpha without" shows the Cronbach's alpha calculated after excluding a specific item in a subscale.

Table 7 includes a statistical description of the nine dimensions. On average, the highest scores are observed for *Clear goals*, *Concentration of task at hand* and *Autotellic experience*. As for the questionnaire on motivation, there were no missing responses.

Table 7 **Descriptive statistics and Cronbach's alphas for the flow dimensions**

	Minimum	Maximum	Mean	Std. Deviation	Alpha
Challenge skill balance	7	18.00	13.65	2.36	0.71
Merging of action and awareness	6	19.00	11.93	2.96	0.85
Clear goals	9	20.00	15.80	2.72	0.83
Unambiguous feedback	8	20.00	14.63	2.80	0.85
Concentration on task at hand	11	20.00	15.30	2.13	0.78
Sense of control	8	20.00	13.85	2.48	0.85
Loss of self consciousness	4	17.00	10.46	2.89	0.70
Transformation of time	4	19.00	11.89	3.12	0.84
Autotelic experience	9	20.00	15.26	2.76	0.85

Table 6. **Reliability analysis on flow dimensions**

Item	Alpha Without	Alpha Total
Challenge Skill Balance Q1	0.77	
Challenge Skill Balance Q2	0.58	
Challenge Skill Balance Q3	0.58	
Challenge Skill Balance Q4	0.62	
Challenge Skill Balance Total		*0.71*
Merging of Action and Awareness Q1	0.83	
Merging of Action and Awareness Q2	0.80	
Merging of Action and Awareness Q3	0.78	
Merging of Action and Awareness Q4	0.81	
Merging of Action and Awareness Total		0.85
Clear Goals Q1	0.81	
Clear Goals Q2	0.77	
Clear Goals Q3	0.72	
Clear Goals Q4	0.84	
Clear Goals Total		*0.83*
Unambigious Feedback Q1	0.88	
Unambigious Feedback Q2	0.75	
Unambigious Feedback Q3	0.76	
Unambigious Feedback Q4	0.85	
Unambigious Feedback Total		0.85
Concentration of Task Q1	0.74	
Concentration of Task Q2	0.78	
Concentration of Task Q3	0.74	
Concentration of Task Q4	0.65	
Concentration of Task Total		0.78
Sense of Control Q1	0.83	
Sense of Control Q2	0.78	
Sense of Control Q3	0.83	
Sense of Control Q4	0.81	
Sense of Control Total		*0.85*
Loss of self Consciousness Q1	0.64	
Loss of self Consciousness Q2	0.53	
Loss of self Consciousness Q3	0.75	
Loss of self Consciousness Q4	0.59	
Loss of self Consciousness Total		*0.70*
Transformation of Time Q1	0.71	
Transformation of Time Q2	0.73	
Transformation of Time Q3	0.73	
Transformation of Time Q4	0.84	
Transformation of Time Total		*0.79*
Autotelic Experience Q1	0.83	
Autotelic Experience Q2	0.84	
Autotelic Experience Q3	0.77	
Autotelic Experience Q4	0.76	
Autotelic Experience Total		*0.85*

Correlations between the flow subscales are reported in table 8. Significant positive relationships were found between most dimensions of flow. Based on their previous studies, Jackson and Elklund (2004) recommend excluding the time transformation scores from the global flow score due to its lack of substantial relationship with the higher order flow latent variable. However, since this result was not confirmed in our correlation analysis, time transformation's scores were included in the flow total. Furthermore, since *Loss of self-consciousness* was not correlated with any other flow dimension, it was excluded from further analysis. To summarize the "meaningful" flow dimensions, a total score for flow (Total Score DFS-2) was calculated as the sum of the scores of the flow dimensions minus *Loss of self-consciousness.*

Table 8 **Kendall-tau pairwise correlations for the flow dimensions (lower diagonal)**.

	CSB	MAA	CG	UF	CTH	SC	LSC	TT
Merging of action and awareness	0.39*							
Clear goals	0.36*	0.34*						
Unambiguous feedback	0.32*	0.23*	0.23*					
Concentration on task at hand	0.31*	0.31*	0.37*	0.27*				
Sense of control	0.5*	0.45*	0.39*	0.42*	0.33*			
Loss of self consciousness	0.02	0.17	-0.01	-0.03	0.04	0.04		
Transformation of time	0.35*	0.28*	0.24*	0.13	0.15	0.3*	0.02	
Autotelic experience	0.23*	0.36*	0.25*	0.11	0.27*	0.26*	0.04	0.22*

Significant correlation coefficients at 5% are flagged by "". CSB=Challenge Skill Balance; MAA= Merging of Action and Awareness; CG=Clear Goals; UF=Unambiguous Feedback; CTH=Concentration of Task at Hand; SC=Sense of Control; LSC=Loss of Self Consciousness; TT=Transformation of Time*

Similar results were found with Pearson's correlation, which are reported in Table 9 for comparison.

Table 9 **Pearson's correlation for the flow dimensions**

	CSB	MAA	CG	UF	CTH	SC	LSC	TT
Merging of action and awareness	0.53*							
Clear goal	0.55*	0.45*						
Unambigious feedback	0.5*	0.36*	0.42*					
Concentration of task at hand	0.44*	0.48*	0.39*	0.42*				
Sense of control	0.65*	0.57*	0.56*	0.6*	0.48*			
Loss of self-consciousness	0.02	0.26	0.01	-0.02	0.12	0.08		
Transformation of time	0.39*	0.32*	0.33*	0.11	0.17	0.31*	0.04	
Autotellic experience	0.32*	0.5*	0.38*	0.16	0.4*	0.4*	0.03	0.26*

APPENDIX 8

PEARSONS CORRELATION BETWEEN

MOTIVATION AND FLOW

Table 10 PEARSONS CORRELATION BETWEEN MOTIVATION AND FLOW

	Amotivation	External regulation	Introjected regulation	Identified regulation	Integrated regulation	Intrinsic motivation	SDI	Years of professional experience
Challenge of skill balance	-0.54*	0.22	0.1	0.18	0.23	0.28*	0.43*	-0.06
Merging of action and awareness	-0.28*	0.29*	0.18	0.34*	0.3*	0.14	0.23	-0.15
Clear goal	-0.52*	0.18	0.12	0.18	0.35*	0.52*	0.58*	-0.29*
Unambigious feedback	-0.16	0.33*	0.09	0.17	0.22	0.07	0.09	-0.06
Concentration of task at hand	-0.35*	0.04	-0.13	0.16	-0.01	0.03	0.22	-0.22
Sense of control	-0.43*	0.18	0.06	0.35*	0.25	0.2	0.37*	-0.15
Loss of self-consciousness	-0.01	-0.13	-0.2	-0.02	-0.04	-0.08	0.01	-0.13
Transformation of time	-0.1	0.21	0.18	0.31*	0.22	0.12	0.12	-0.08
Autotellic experience	-0.35*	0.21	0.18	0.37*	0.44*	0.41*	0.46*	-0.37*
Total score DFS2 excl LSC	-0.48*	0.31*	0.16	0.38*	0.37*	0.32*	0.45*	-0.25

Kendall-tau correlation between motivation and flow Table 1 page 48

	Amotivation	External regulation	Introjected regulation	Identified regulation	Integrated regulation	Intrinsic motivation	SDI	Years of professional experience
Challenge of skill balance	-0.34*	0.24*	0.06	0.15	0.18	0.16	0.21*	0.02
Merging of action and awareness	-0.27*	0.2	0.12	0.23*	0.23*	0.12	0.16	-0.09
Clear goal	-0.35*	0.14	0.07	0.07	0.25*	0.35*	0.37*	-0.23*
Unambigious feedback	-0.04	0.23*	0.06	0.13	0.14	0.01	-0.1	-0.04
Concentration of task at hand	-0.32*	0.02	-0.11	0.08	0.01	0.06	0.19	-0.18
Sense of control	-0.31*	0.12	0.02	0.28*	0.16	0.1	0.14	-0.11
Loss of self-consciousness	-0.02	-0.06	-0.15	-0.02	-0.05	-0.08	0.01	-0.07
Transformation of time	-0.09	0.15	0.14	0.25*	0.15	0.07	0.08	-0.05
Autotellic experience	-0.39*	0.1	0.15	0.3*	0.33*	0.32*	0.35*	-0.27*
Total score DFS2 excl LSC	-0.37*	0.21*	0.09	0.25*	0.26*	0.18	0.22*	-0.17

APPENDIX 9

FURTHER INTERPRETATION OF QUANTITIVE RESULTS

FURTHER INTERPRETATION OF QUANTITIVE RESULTS

In trying to interpret the results with an insider's view and observation of the ballet's world over the past 24 years, the unexpected association between external motivation (Q 24 Appendix 1: "to show other how good I am at ballet") and flow may be explained by the fact that dancers are constantly exposed to social judgments (e.g. audiences, directors, peers, press and media) and to increase their confidence and satisfy their need of competence they strive to demonstrate their skills (which is integral to Deci and Ryan's Basic Needs Theory, 1985, 2008 and Harter's Competence Motivation Theory, 1981). A previous study in dance by Quested and Duda (2010), found that perceptions of competence were highly salient in a ballet setting. This result was partially expected from the functional significance of feeling of competence in the physical domain. These authors also state that dancers seek to feel competent in their activity because the quantitative indicators of performance in dance are not as apparent and objective as they are in sport, where they can refer to scores or judge performance in relation to others (ibid). In dance, which is an art form, the parameter of abilities is partially subjective, making the outcomes of the dancers' careers often out of their control, as they are predominantly determined by the artistic, aesthetic and technical personal preference of directors, choreographers and critics. Therefore, in demonstrating their skills and receiving a positive feedback on their competence the dancers are able to gain confidence to perform well, and consequentially able to experience flow. Also, several participants sampled for the present study, left their home and home country to pursue their professional vocation. The high number of hours (up to 12 hours a day) dancers spend in their working and social environment may contribute toward the significance of feeling valued and competent in their context.

APPENDIX 10

INTERVIEWEES PROFILES

INTERVIEWEES' PROFILES

Scores from questionnaires	Agree with the theory	Agree with the theory	Disagree with the theory	Disagree with the theory
	HM/HF	**LM/LF**	**HM/LF**	**LM/HF**
AMOTIVATION	8	20	6	6
EXTERNAL REGULATION	6	6	9	4
INTROJECTED REGULATION	7	4	8	4
IDENTIFIED REGULATION	7	6	8	8
ITEGRATED REGULATION	14	9	15	7
INTRINSIC MOTIVATION	19	8	17	10
CHALLENGE-SKILLS BALANCE	17	9	12	15
MERGING OF ACTION	15	7	6	11
CLEAR GOALS	18	9	17	14
UNAMBIGUOUS FEEDBACK	16	12	16	18
CONCENTRATION ON THE TASK	16	12	11	15
SENSE CONTROL	14	10	11	16
LOSS SELF CONSCIOUSNESS	12	13	9	13
TRANFORMATION OF TIME	12	8	10	16
AUTOTELIC EXPERIENCE	19	9	12	14
TOT FLOW	139	89	104	132

APPENDIX 11

INTERVIEWEES MOTIVATIONAL CHARACTERISTICS

INTERVIEWEES' MOTIVATIONAL CHARACTERISTICS

From the statistical results of the questionnaires of our sample of dancers being interviewed we observed that both participants with high motivation (HM/HF and HM/LF) exhibit very high levels of self-determined motivation, scoring respectively 19 and 17 on a 20-point scale for *Intrinsic motivation* and 14 and 15 for *Integrated regulation*. The participant with low motivation and high incidences of flow (LM/HF), which motivation characteristics did not conform to the flow theory, displayed, a predominantly self-determined, but very low level of motivation across all regulations, with the highest score of 10 (on a 20-point scale) for *Intrinsic motivation*. The last participant, with low motivation and low flow (LM/LF), also showed from the results of the quantitative analysis very low levels of overall motivation, but attained the highest score (20) for *Amotivation*. Agreement was found between the transcripts and the results of the statistical analysis.

The dancers with high motivation participated in dance as a mean of self-expression, because it was stimulating and exciting and provided the opportunity to challenge their own physical limits and accomplish personal goals. Furthermore, the enjoyment, personal reward, and the adrenaline rush felt while performing acted as source of motivation to persist in their activity. These statements from a male soloist (HM/HF) and a female principal (HM/LF), exemplify their motivational tendencies:

> *"(I engage in dance for) the challenge of it, the expression of it and the feeling you get when you're performing…Yeah, it's the best, the best. If you do a good performance it's the best feeling in the world, I guess the biggest adrenalin rush that you can ever experience" (HM/HF 549-552). "I just love the feeling of being able to express yourself with your body, with your acting abilities, and I've always loved music, and to be able to dance to music, that's really… I love it [laughs]" (HM/HF 273-275);*

and

> *(Dance) it's a drug… I need, I need that fix of performing, of, erm, being on stage with a challenge….Yeah, I think the adrenalin and the feeling of, as I say, the hope of getting that feeling of satisfaction, personal, and I think its sort of… its to prove my worth to myself as well, like this is what I put it all in for and this is the result, I think its always there. Erm, it's that feeling, you know, how I perceive myself" (HM/HF 370-376).*

The participant with low motivation (mostly self-determined) and high incidences of flow, still enjoys some aspect of his activity, and also engages in ballet mainly for the challenge that it provides, but he had started to doubt the reasons for his participation in dance and persisted in the vocation partially for external motives (financial security). The following quotation from the male first artist exemplifies his decreasing commitment to dance:

> *"I think for the challenge. I think, it does give me a good feeling when the body is proactive" (334-336). "I don't know what's keeping me going. I think it's… if I really hated my job I wouldn't be here… It's a great job, you know… Its well paid and its supportive and it allows me to do other projects as well, which is another driving force for me to stay here, but I don't think it will be for much longer" (LM/HF 600-616).*

The participant with low overall motivation and extremely high amotivation, after years of disappointment had completely lost her will to participate in dance and can not find any reason to engage in the profession anymore. The statement drawn from the transcript of the female first artist displays her motivational state, and sadly reflects the harsh reality of this hierarchical vocation:

> *"(Ballet) Doesn't really mean anything" (161). "I can't see the point…I've been in the same parts for 12 years, going into my 13th year, so its like its so*

monotonous that I can't really get excited about it any more, its just a job" (LM/LF 128-132). "Even if someone says it was really good…I probably could have done it 10 times worse and I still would have been in line so no one would have noticed, you know. It's a struggle to keep yourself like 'I have to do this really, really well because, you know, it's my job and I want to, you know, move up the ranks and I want to succeed', but then when you get to my age its like 'Well, is there any point really' [laughs]" (LM/LF 132-138).

APPENDIX 12

PARTICIPANT HIGH MOTIVATION/ HIGH FLOW

PARTICIPANT HIGH MOTIVATION/ HIGH FLOW

CHALLENGE/SKILLS

440-444) I feel like a lot of the roles that get given to me are a challenge. In fact, every role that gets given to me are a challenge, so my ability is just below that. I work, put effort in so that I reach that level. So as long as I do put the practice in and the effort in and the rehearsal time in, most of the time I'll reach that level, I think.

455-459) I like the challenge, yeah, I always have done, and I think for me, as I say, Swan Lake was one of those cases where I had it on such a high pedestal that I knew that my expectation of someone doing that role was very high, so I had to really raise my game and my level, my standard really to reach that. So that's why, for myself, I had to put in a lot of effort and extra work to do that, to get there.

CLEAR GOAL

15-16) I was really, really, really prepared for it, I knew exactly every step and what to think about in every step.

322-324) I want to be successful in ballet and in life, and have a happy life, but I think for me to have a happy life I have to… one goal of mine is to be a very good dancer and a successful dancer, so that's important to my life.

SENSE OF CONTROL

24) Stress just went completely out of me

58-59) I knew there was a lot of pressure on it but, I didn't let it effect me

333-336) I don't know whether it came through experience or age, maturity, I've learned to…

you know, that nerves are not necessarily a bad thing and with nerves comes adrenalin, and adrenalin can be destructive if you don't know its coming or if its there and you don't know how to use it.

341-342) it's important to know that that's a normal feeling of nerves and not to be scared of it, and kind of embrace it almost, and I think that's what I tried to do with the Swan Lake show. **353)** I'd controlled the nerves

377-378) If I have a little stumble I'm always very aware of it, but even though I'm aware of it I try not to let it affect the rest of my performance.

481-483) I feel, yeah, in general quite in control…as long as I prepare mentally and physically then I feel like I'm ready to do the show.

LOSS OF SELFCONSCIOUSNESS

25) There's nothing I need to prove

412-413) I think by the time I come to the performance I try to let go of everything, you know…

427-428) Socially, I feel like it's important to put everything aside, no matter what's going on in your life, you know, you have to focus 100%, so yeah.

485-489) In performance? Obviously the rest of the company and the audience are there watching you, I feel even though I'm aware of it, obviously people are going to make judgement, by the time you get to a performance there's nothing, all you can do is just give your best. I think if you worry about that while you're doing it you end up doing a worse performance. Yeah, by that stage there's no turning back, you know, all you can do is give your best at that point.

UNAMBIGUOUS FEEDBACK

26-30) And I remember that performance was probably one of the best, up until that point it was the best I'd danced, ever, and I did things that I didn't manage to do in rehearsal….everything just worked….that was the first time I ever experienced that feeling of 'everything works'

41-44) I almost lost it, like almost came back to reality (slipped and nearly fell over)…. straight after that I did the most amazing pirouette of my career. I don't know if that helped me, to bring it back, yeah.

66-67) There were mistakes, but I don't know, it didn't bother me at all.

354-356) I ended up doing things that I'd never done in rehearsal….I remember I pulled in from the end of my grand pirouette with a pirouette and finished on demi-pointe, and I'd never done that in rehearsal before.

378-380) I've had performances where something goes wrong and straight afterwards almost tried to make up for it instead of letting it affect the rest of my performance and worrying about it, you know.

382-385) I just try to tell myself to forget it, literally in my mind to forget it. It's weird, I don't consciously… or maybe I subconsciously do try to do even better afterwards, just to make up for it, but yeah, I try to carry on with the performance and worry about it after the performance

CONCENTRATION ON THE TASK AT HAND

39-40) You could see actually who was there, but to me they weren't there (audience)

377-385) Yes. If I have a little stumble I'm always very aware of it, but even though I'm aware of it I try not to let it affect the rest of my performance…. I try to carry on with the

performance and worry about it after the performance

AUTOTELIC EXPERIENCE

10-11) I've definitely got some performances that stick in my mind as being both better and probably coincidentally I enjoyed more as well.

31) I was just enjoying it, just really enjoyed it.

36) I just really enjoyed it

66) it was really enjoyable, I just really enjoyed the whole performance

69-73) amazing, you feel… especially when you work so hard and you put a lot of effort and energy into making something as good as you can, you know, if you then have a good performance and you feel it yourself…massive sense of achievement….success almost I think

139-140) my debut of Swan Lake (prince), the first performance I ever did was probably my most enjoyable performance

351-356) I remember I just enjoyed it, just enjoyed the performance 100%.....I ended up having more strength at the end of the coda….I didn't feel tired at that point. Yeah, it was weird, it was weird [*laughs*].

PARTICIPANT LOW MOTIVATION/ LOW FLOW

CHALLENGE/ SKILLS BALANCE

26-33) Yeah, I felt in control of it…. I felt comfortable with because it was comedy and the steps weren't that hard…. I felt like… I don't know, it felt easier than I thought it was going to be, and especially in front of people, I felt more confident than I expected.

300-301) I'm cast and the parts I do I think are on a level with what I'm able to do.

UNAMBIGUOUS FEEDBACK

224) I think I'm very aware of what I'm doing

228) I was very aware of what I was doing

SENSE OF CONTROL

27-32) I didn't feel the pressure … it felt easier than I thought it was going to be, and especially in front of people, I felt more confident than I expected.

275-276) that was like the only time I've ever felt confident in the studio

350-352) I'm more in control now, it used to be really hit and miss, I wouldn't know if something would work, but now I think things are a lot calmer and I've learned kind of how to control my body a lot more.

PARTICIPANT HIGH MOTIVATION/ LOW FLOW

CHALLENGE/ SKILLS BALANCE

306-312) a great feeling is when you feel the challenge is too high and you rehearse and you meet that challenge in rehearsal… you get that moment in rehearsal, revelation, like 'I can do this, I can really do it', and if you can sort of keep that, keep feeding that feeling, so I keep raising the bar and make it harder or expect more from yourself and keep meeting those challenges, then that's a really good way to build up for a performance I think.

CLEAR GOALS

17-22) I was dancing but I was thinking ahead, and …everything happened ahead of me … I was able to do it, and it just lasted all the way through, and I came off and I was like 'Yeah, delivered, done'.

31-33) I was very conscious of everything that was going on and had, as I say, a very clear thought pattern ahead of what I wanted to do,

UNAMBIGUOUS FEEDBACK

31) I was very conscious of everything that was going on

253-256) when its going well I think I can tell, and that feeds me and I think 'Oh', you know, and then that sort of pushes you on. Its almost if you can get on that level of 'Oh its going well' then its easy, because everything else goes well after that…

53-54) it went well and everything we did worked as I wanted it to, everything that we'd planned

TRANSFORMATION OF TIME

30-31) Yeah, it was, you know, sort of time stood still a little bit. Yeah, I felt like I had more time to do everything and I was very conscious of everything that was going on

340-343) As I said, time stands still a little bit, it all slows down and there's time to, erm, think ahead and be really conscious of what's going on, and 'Oh I'd really like to do this, I'd really like to do that', and you somehow manage, you have time to fit it all in, erm, yeah, those few occasions.

AUTOTELIC EXPERIENCE

9-10) …always the ones that I have in my mind, it's like I want to get back there.

24-27) It made me feel, erm, amazing, and just want to get back on stage and carry on dancing and, you know, do it all over again, and you feel invincible and you feel, er, proud. Yeah, just immense satisfaction, and I wasn't tired or I didn't feel, you know, sore toes or sore legs, I wasn't as out of breath, I was… had much more stamina. Yeah, it was good, good times.

PARTICIPANT LOW MOTIVATION/ HIGH FLOW

CHALLENGE/ SKILLS BALANCE

27-32) what I thought was sort of asking the impossible suddenly became possible …I felt I could do things…I started to realise that I did actually have the potential somewhere to be able to do this… the best rehearsal I think of my entire career.

564-565) I think that the roles that I'm given are within my capability, my skill level, so I think there's a sort of even keel.

CONCENTRATION ON THE TASK AT HAND

70-80) When I'm actually dancing I was really just sort of in the zone, I was concentrating on the job, and the only things that I was thinking about was… I was thinking very little, I was thinking minimal amounts and just key points, like bullet points, you know, I was thinking these things which S. had pointed out to me, what I needed to aim for, and when I would aim for that particular, erm, aspect or correction, when I've met it then I know the step will work, you know. So that was the only thing, these were the only things that I was focusing on… I didn't have any kind of emotion, it was just a very sort of neutral…It was quite a deep form of… it was quite a deep concentration.

429) I've got complete awareness.

431-433) awareness of the body is heightened, awareness of… special awareness is heightened, hearing, sight, whatever, its all heightened.

438-440) if something does go wrong, which like I said it will do at some point, it just means that I can bring the concentration straight back and it doesn't affect me.

465-466) I can sort of push that thought away and then move my attention back to that point.

MERGING OF ACTION AND AWARENESS

69-71) I think in terms of emotional feeling it didn't really click until the end of the variation when people did show their appreciation and applause. When I'm actually dancing I was really just sort of in the zone.

UNAMBIGUOUS FEEDBACK

74-76) when I would aim for that particular, erm, aspect or correction, when I've met it then I know the step will work, you know.

422) it's about awareness isn't it, erm, and I am aware of it.

438-440) if something does go wrong, which like I said it will do at some point, it just means that I can bring the concentration straight back and it doesn't affect me.

SENSE OF CONTROL

489) I feel pretty confident.

AUTOTELIC EXPERIENCE

35) That was for me, just a memory that I don't think I'll never forget

50-54) It was just a feeling of euphoria…it was a great feeling.

APPENDIX 13

INHIBITORS OF FLOW

INHIBITORS OF FLOW

HM/HF	LM/LF	HM/LF	LM/HF
Being too relaxed		Too over excited	
Not focused, not committing mentally 100%	Mind can't focus on stage	Mind struggle to focus on the task	Poor concentration in rehearsal or performance
Lack of confidence	No self -belief	No confidence	Lack of confidence
Feeling unprepared	Feeling unprepared	Feeling unprepared	
Lack of time to rehearse	Short rehearsal period	Lack of rehearsals	
	Unable to recover from mistakes	Mind affected after mistakes, unable to pull it back	
Over thinking Worrying	Nerves-Panic Negative thoughts	Nerves Negative thinking	Anxiety, worrying, been embroiled in negativity
Tiredness, aching body	Injuries	Not feeling fit or strong	Unfit body
Tight costumes and shoes	Big costumes	Uncomfortable costumes or shoes	
No time to get use to the environment: lights, stage, props and floor.	Lights, stage, props	Floor, lights, stage	
Partner who is not immersed into the role	Unwilling partners		Difficult partners
No feedback from management (director, choreographer, coach)	Untruthful feedback from coach	Lack of direction from coach	Unsupportive management (director, choreographer, coach)
Conductor change of tempi	Unpredictable tempi from the orchestra	Unexpected tempi	Tempi too fast for the choreography
No stage call	Lack of stage calls	No time to rehearse on stage	
Lack of time to plan ahead	No time to plan ahead	No time to feel mentally prepared	
Not familiar with the choreography	Not familiar with the steps	Thinking about the steps on stage	
	Pressure from management and peers		Pressure from management
Challenge too low	Challenge too low or to high		
	Lack of psychological skills in performance	Lack of psychological support in dance	Lack of mind training in dance

FACILITATORS OF FLOW

HM/HF	LM/LF	HM/LF	LM/HF
Supportive and inspiring coach	Supportive management	Supportive coach	Supportive caring coach
Encouraging feedback	Positive constructive feedback	Consistency of feedback	Good feedback
Partner that immerse herself into the role	Friendly partner	Trustable and supportive partner	Good relationship with the partner
Time to rehearse	Rehearsals	Rehearse to a sufficient level	
Rehearsal on stage	Rehearsal on stage	Time on stage	
Mentally ready, knowing exactly when and what to do in performance	Mental plan	Time to plan ahead	
Physically prepared, in tune with the body and injury free	Injury free	Physically prepared, fit and strong	In tune with the body
Pre-performance routines: Visualization, warm up, stretching, sleep enough and eat well	Pre-performance routines: Relax, warm up	Pre-performance routines: Pilates, warm up, visualization	Pre-performance routines: Meditation, Pilates, breathing technique, fitness cardiovascular training
Being focused, Committing mentally 100% Aroused to the right level		Concentration, Know mentally to have given 100%	High degree of concentration, control of the mind and awareness
Comfortable tempi from orchestra	Orchestra sound beautiful and inspiring		Good speed from conductor. Live orchestra is highly inspiring
Repetition	Repetition	Repetition	
Confident, not worrying, control over nerves	Confidence	Feeling confident Calm	Confident, relaxed, calm, under control
	Support from the peers		Support from the peers
Feeling valued and successful	Feeling accepted and approved by people	Feeling competent in front of management and peers	Feeling valued Self worth and sense of belonging

APPENDIX 14

PARTICIPANTS TRANSCRIPTS

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