

Chapter 1: The flow construct

a) Definitions and characterization of flow

As an optimal psychological state, flow represents those moments when everything comes together for the performer. Flow is often associated with high levels of performance and is a positive psychological experience. Csikszentmihalyi (1975) developed the concept after investigating the experiences of individuals during times when everything came together during performance of one's chosen activity. The types of activities investigated were diverse, ranging from surgery, to dancing, to chess, and rock climbing. Despite such diversity in setting, there was considerable consistency of responses regarding what was felt during moments that stood out as being special in some way for the performer.

Since his initial investigations where the term "flow" was chosen to denote these special absorbing experiences, Csikszentmihalyi (e.g., 1990, 1997) has continued a research program examining this experience. Flow has been examined in daily living (Csikszentmihalyi, 1997) and as a state of mind in scientific discoveries (Csikszentmihalyi, 1996). There has been remarkable consistency in how flow has been described by individuals across diverse settings. Flow is a special psychological state, one that brings the recipient much enjoyment.

Flow occurs when one is totally involved in the task at hand. It can occur at different levels of complexity but, by definition, flow is intrinsically rewarding, regardless of whether it involves a simple game of throw and catch or a complicated and dangerous gymnastics routine. Csikszentmihalyi (1975) described the different levels of flow as micro and macro flow experiences. Micro flow experiences were proposed to fit the patterns of everyday life, whereas macro flow was reserved for experiences associated with higher levels of complexity and demand on the participant. When in flow, one feels strong and positive, not worried about self or of failure. Flow can be defined as an experience that stands out as being better than average in some way, where the individual is totally absorbed in what she or he is doing, and where the experience is very rewarding in and of itself (Jackson, 1993). This definition covers several characteristics of flow.

Csikszentmihalyi's (1990) concept of challenge-skill balance is crucial to the definition of flow. Flow occurs only when the individual moves beyond his or her average experience of challenge and skill. The moving beyond average signifies an investment of psychic energy into a task, which is also a pre-requisite to flow. The challenge-skills balance concept is best described graphically, and thus a model of flow is presented below in Figure 1. When the perceived challenges are matched by a belief in having the skills to meet the challenge, the stage is set for flow to occur.

The challenge-skill balance model of flow provides an understanding of a range of psychological experiences in addition to flow. It can be seen in Figure 1 that when challenges outweigh skills, anxiety is predicted. Conversely, when skills outweigh challenges, relaxation, closely followed by boredom, is predicted. An absence of significant challenge or skill requirements in a situation brings on a state of apathy.

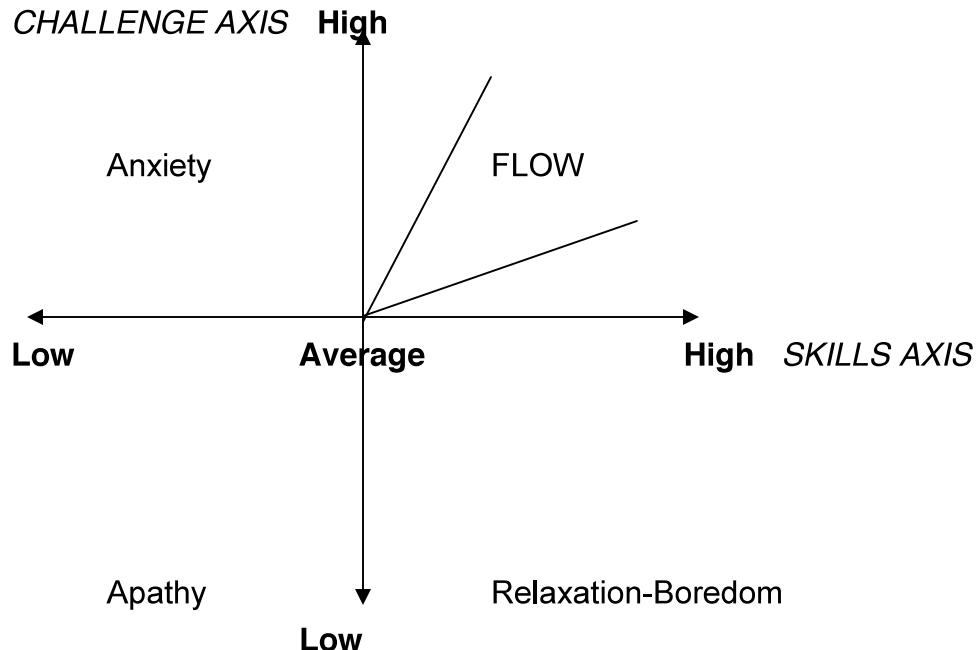


Figure 1. Model of the flow state. Adapted, with permission, from S.A. Jackson, S.A., & M. Csikszentmihalyi, 1999. *Flow in sports: The keys to optimal experiences and performances*. (Champaign, IL: Human Kinetics), p. 37. Adapted from M. Csikszentmihalyi and I. Csikszentmihalyi, 1988, Optimal experience: Psychological studies of flow in consciousness (Cambridge: Cambridge University Press).

Understanding how flow relates to other psychological constructs such as anxiety, and confidence, was an important consideration in developing the flow scales. Referring back to the challenge-skill balance model of flow, flow represents optimal experience, and Csikszentmihalyi (1990) uses these two terms interchangeably. We consider the study of optimal experiences to be as important as focusing on problems, or negative experiences. The tremendous growth of the positive psychology approach (Seligman & Csikszentmihalyi, 2000) demonstrates considerable support for the significance of understanding positive human experiences. Csikszentmihalyi (1990) provides a compelling argument for why flow experiences are important—they lead to growth and complexity in consciousness.

b) The flow dimensions

The LONG and SHORT Flow scales were theoretically grounded in Csikszentmihalyi's (1990) nine-dimensional conceptualization of flow. These nine dimensions are: challenge-skill balance, action-awareness merging, clear goals, unambiguous feedback, concentration on task, sense of control, loss of self-consciousness, time transformation, and autotelic experience. Considered together, these dimensions represent the optimal

psychological state of flow; singly they signify conceptual elements of this state. We now define and describe the nine flow dimensions.

Challenge-skill balance.

Challenges can be thought of as opportunities for action, or goals. Skills are the capacities that we possess to produce desired outcomes. Critical to the challenge-skill balance is that the *perception* of challenge and skill drives the equation. This means our beliefs, or confidence regarding what we are able to do in a situation, is more important than what our objective skill levels might be. Challenges can be defined in a personal way, separate from any structures of an activity. It is the perception of the defined challenge that is critical to flow occurring.

When in flow, a dynamic balance exists between challenges and skills. In sports, athletes continually challenge themselves with higher skill demands. The structure of sports and any competitive endeavour provide continual opportunities for extending oneself. For many people, physical activity (be it competitive or recreational) provides one of the most concrete opportunities for setting and striving for personal challenges. Challenges and skills, however, can be modified in any activity, making flow an accessible experience across all domains of functioning.

Action-awareness merging.

When people are asked to describe what it feels like to be in flow, they often refer to this idea of action-awareness merging. Performers describe feeling at one with the activity being performed. How does this experience come about? Through total absorption in what one is doing. Such involvement can lead to perceptions of oneness with the activity that brings harmony and peace to an active engagement with a task.

A sense of effortlessness and spontaneity is associated with the flow dimension of action-awareness merging. Feelings of automaticity are described by performers, whose well-learnt routines enable them to process subconsciously and pay full attention to their actions. The unity of consciousness apparent in this flow dimension illustrates the idea of growth in complexity that results from flow experiences.

Clear goals.

Goal setting is a process that, when undertaken correctly, helps move a performer toward flow. Once in this state, individuals describe knowing clearly what it is they are supposed to do. Such clarity of purpose occurs on a moment-by-moment basis, keeping the performer fully connected to the task and responsive to appropriate cues. Sports provide an excellent setting for actions bound by clear goals and rules. The structure of pre-set action allows more attention to be focused on immediate tasks. Personal goals can also be set and continually monitored against this backdrop of in-built goals for action. In fact, it is vital that athletes plan for their performance so that, when the time comes, there is clarity of focus on the particular goals relevant to individual performers and performances. Goals are a necessary part of achieving something worthwhile in

any endeavor. The focus that goals provide to actions also means that they are an integral component of the flow experience.

Unambiguous feedback.

Closely associated with clear goals is the processing of how performance is progressing in relation to these goals. Paying attention to feedback is a necessary step in determining whether one is on track toward goals that have been set. When in flow, feedback is easier to receive and interpret. The performer receives clear, unambiguous information that he or she processes effortlessly, keeping performance heading in the right direction.

Feedback can come from many sources. For athletes, and others who have a physical component to what they do when in flow, one of the most important sources of feedback is kinaesthetic awareness, or knowing the spatial location of one's body. This awareness is the internal information an athlete needs to optimise his or her movements. Recognizing how the quality of a performance relates to an ideal performance enables athletes to know, on a continuous basis, whether their movements match what they want them to be. Feedback can come from a range of external sources, including the environment in which the performance is occurring, to the information provided by competitors or spectators. It is not necessary for feedback to always be positive for flow to be experienced. When in flow, the nature of clear and immediate feedback means that adjustments can be made to either keep a performer in flow, or enable one to achieve this state. When receiving feedback associated with a flow state, the performer does not need to stop and reflect on how things are progressing. This information is seamlessly integrated into performance in an ongoing way.

Total concentration on the task at hand.

This fifth characteristic defines one of the clearest indications of being in flow: one is totally focused in the present on a specific task being performed. There are no extraneous thoughts, and the distractibility that often accompanies involvement on any task is wonderfully absent. Experiencing such clear moments provides much satisfaction, which in turn leads to the growth in complexity (Csikszentmihalyi, 1990, 1993) resulting from flow experiences.

Being totally connected to the task in which one is engaged epitomizes the flow state. This connectedness relies on a present-centred focus—flow resides in being in the present moment, rather than in the past or future. An interesting aspect of the concentration experienced in flow is that even though it is complete and intense, it is also spontaneous. In contrast to one's usual experience, no effort is required to keep the mind on task when in flow.

Sense of control.

Another frequently mentioned flow characteristic is a feeling of being in control. Some have described a sense of infallibility when performing in flow. This empowering feeling

frees one from the all-too-frequent fear of failure that can creep into performance. Failure thoughts are happily absent during flow, enabling the individual to take on the challenges at hand.

Control, like the challenge-skill relationship, is a delicately balanced component of flow. Although the perception of control is inherent to the experience, absolute situational control does not actually exist. Challenge must be experienced for flow to be experienced. Challenge does not exist under conditions of absolute control. Having the experience of total control is likely to move an individual away from the experience of flow and into relaxation or boredom. It is the possibility of keeping things under control that keeps flow active. Like flow itself, the sense of control often lasts only a short time. This relates back to keeping at the cutting edge of the challenge-skill balance within a situation. If the feeling of being in control keeps going indefinitely, then the scales have tipped in favour of skill over challenge, and flow is lost.

Loss of self-consciousness.

Most people live their lives surrounded by evaluations of how they are doing. Emanating from many sources, one of the most insistent is from the self. In situations of importance, it is difficult to stop constantly evaluating how we are doing in the eyes of others; however, stopping this evaluation is necessary for flow. When an individual is no longer concerned with what others think of them, self-consciousness has been lost.

People who perform publicly often find it difficult to lose self-consciousness. In any activity, we face criticism—both from others and ourselves—which turns attention away from the task and onto the self. The ego, that part of our self that questions, critiques, and prompts self-doubt, needs to be quietened for flow. We can think of flow as unselfconscious action. It is liberating to be free of the voice within our head that questions whether we are living up to self or other-imposed standards.

Transformation of time.

Deep moments of flow seem to transform our perception of time. For some, the experience is that time stops. For others, time seems to slow. Or it may be that time seems to pass more quickly than expected. These sensations come about through the intensity of involvement in flow. Because nothing else is entering our awareness during the intense concentration of flow, we may be surprised to find that significant time has passed while in this state. The intensity of focus may also contribute to perceptions of time slowing, with a feeling of having all the time in the world to execute a move that is in reality time-limited. Thus, there seems to be a close link between depth of concentration and time transformation.

Time transformation may be the least frequently experienced flow dimension. Sport research conducted to date has found lack of a robust association between time transformation and the other flow dimensions. It may be that the nature of the sports activity, where time is often part of the infrastructure or part of the challenge, is not easily lost. Another possible explanation is that this dimension occurs only when the flow experience is very deep (Tenenbaum, Fogarty, & Jackson, 1999). When time

transformation is experienced, it is one of the liberating dimensions of flow—to feel free from the time dependence under which we live most of our lives.

Autotelic experience.

Csikszentmihalyi (1990) coined the term autotelic experience to describe the intrinsically rewarding experience that flow brings to the individual. As described by Csikszentmihalyi, the word is derived from two Greek words that describe doing something for its own sake: “auto” = self, and “telos” = goal. Flow is such an enjoyable experience that once experienced, it becomes a much sought after state.

Csikszentmihalyi described this dimension as the end result of the other eight flow dimensions. For many, flow is the defining motivation to keep pushing towards higher limits. Feelings of great enjoyment may come only after a flow performance; during a flow performance, energy is directed fully into the task. Thus, it is generally after completing an activity, upon reflection, that the autotelic aspect of flow is realized and provides high motivation toward further involvement.

The dimensions of flow provide a conceptually coherent framework for understanding optimal experience. Considerable consistency of flow experience has been found across many different domains (see Csikszentmihalyi, 1990, 1997; Csikszentmihalyi & Csikszentmihalyi, 1988). The next section introduces the measurement approach designed by Jackson and colleagues to tap into these flow dimensions.

c) Multidimensional, unidimensional, and core flow

The triad of flow scales developed by Jackson and colleagues (e.g., Jackson & Eklund, 2002; Jackson, Martin, & Eklund, 2008; Martin & Jackson, 2008) provides researchers and practitioners with a suite of scales for assessing flow. The three types of flow scales address the flow construct from different perspectives.

Multidimensional.

The Flow State Scale-2 (FSS-2) and Dispositional Flow Scale-2 (DFS-2) are self-report instruments designed to assess flow experiences from the nine-dimensional flow model. These 36-item, or LONG Flow scales, have been shown over a number of studies to be robust instruments that provide a detailed assessment of the dimensional flow model. When a fine-grained description of flow characteristics according to the dimensional flow model of Csikszentmihalyi (1990) is desired, then the long flow scales are the best option.

Unidimensional.

While the dimensional flow model focuses on the nine flow dimensions, it is only when these dimensions are experienced together that flow is thought to occur. To facilitate a concise assessment of the global flow construct, the SHORT Flow scales were developed. Drawn directly from the LONG scales, the items of the SHORT scales