Work-related flow entry

1. The history of flow

In 1975, Hungarian psychologist Mihaly Csikszentmihalyi first published the term ‘flow’ in his book ‘Beyond Boredom and Anxiety’ and defined this state as the “holistic sensation that individuals feel when they act with total involvement” (p. 36). Flow originates from the field of positive psychology, which has the primary purpose to improve the quality and meaning of life. Positive psychologists – such as Csikszentmihalyi and Seligman – criticized the psychology of the 20th century for having an excessive focus on identifying, preventing, or repairing mental damage or illness that was caused by world wars, poverty, and global crises. Nowhere on the research agenda was the question about what makes life worth living. Positive psychologists plead for a shift in focus from the negative side of life (e.g., surviving, weaknesses, dealing with adversity) towards building better experiences. This endeavor turned into an important research field that focuses on understanding happiness, meaning, strengths, and virtues and aims to make full use of human potential.

Csikszentmihalyi (1975) discovered that the quality of life is determined by optimal subjective experiences. In a society where individuals were striving for power, money, and prestige, he reasoned that psychologists failed to understand why there were nevertheless individuals who neglected all these goals and dedicated their time to arts, music, or sports and performed these activities for their own sake. In his search for answers, Csikszentmihalyi interviewed mountain climbers, surgeons, chess players, and dancers, and aimed to identify the most important reasons for pursuing and enjoying an activity. Years of research have shown Csikszentmihalyi and his colleagues all over the world that the quality of an experience – whether it is doing a sport, having a conversation, or playing music – is defined by ‘a feeling of flow’.
This rewarding state frames well within positive psychology because it declares why individuals enjoy their activities in the present and how the quality of human experience can be improved.

Flow became an important concept that received considerable attention from researchers in various domains, such as sports, education, and gaming. Over time, Csikszentmihalyi and his colleagues realized the importance of understanding flow in the work context, which is the main focus of this entry. Not only does flow improve the quality of life in leisure time, but it also explains why individuals perform their jobs with engagement, joy, and motivation (Liu et al., 2023). Whereas leisure time was considered a privilege when Csikszentmihalyi (1975) started investigating flow, work was often regarded as boring, harsh, and lacking meaning. Csikszentmihalyi and his colleagues, however, discovered that most flow experiences in many individuals’ daily lives originate from work-related activities. Although active leisure activities exist (e.g., doing sports or social activities), individuals spend a large part of their leisure time in a passive manner during which they feel less involved (e.g., driving a car, watching TV, or doing chores). Work, instead, typically enables individuals to develop and challenge themselves more often, use their skills and focus on meaningful activities. Therefore, work facilitates numerous occasions to act with total involvement. Subsequently, a large amount of research supports Csikszentmihalyi’s discovery that many – if not most – flow experiences occur during work-related activities (Peifer & Wolters, 2021).

2. The concept of flow

Although researchers published slightly different versions of the definition of flow, in general there is a strong agreement on the concept of flow and its components. Originally, Csikszentmihalyi (1975) identified six components of flow: ‘the merging between actions and awareness’, ‘the centering of attention’, ‘a loss of self-consciousness’, ‘a feeling of complete
control’, ‘clear demands of the activity’, and ‘no need for external goals and rewards’. Later, Csikszentmihalyi and other researchers introduced minor changes to the concept by adding the component ‘losing track of time’ or dividing the component ‘clear demands of the activity’ into two components: ‘clear goals’ and ‘unambiguous feedback’ (Norsworthy et al., 2021).

Through empirical research, the original components of flow are narrowed down into three main categories that represent this multifaceted state (Norsworthy et al., 2021). First, individuals feel completely absorbed in flow, as they don’t think about anything else but their activity. When individuals direct their entire attention towards an activity, thoughts related to themselves center away, and they only think about their actions. This explains a feeling of losing track of time, actions and awareness merging, and self-consciousness losing. Second, individuals feel effortlessly in control during a flow experience. Typically, individuals know exactly what to do when they are in flow. The performance of the activity goes fluently, and individuals enter a state of automatic, effortless, yet focused consciousness. Finally, individuals experience flow as intrinsically rewarding. Neurobiological and physiological research shows that individuals have moderate to high levels of arousal and dopamine in flow. Yet, they are not aware or able to label it because they are completely absorbed in their activities. Altogether, these three dimensions combined reflect the holistic flow experience.

There is an important ambiguity in the literature regarding whether flow is a continuous or discrete experience. This discussion originates from Csikszentmihalyi’s (1975) different framings of the flow concept. On the one hand, he argued that flow experiences differ in intensity. Lower levels of flow are labeled ‘microflow’, whereas high levels are referred to as ‘shallow’ and ‘deep flow’. Following this perspective, researchers measure flow as a continuous state and distinguish flow experiences based on their intensity. On the other hand, Csikszentmihalyi defined flow as a peak or optimal experience that happens on rare occasions.
Accordingly, he suggests that individuals are either in flow, or not (i.e., ‘non-flow states’), and that there is no experience in between. Taking both the continuous and discrete nature of flow into account, Peifer and Engeser (2021) suggested an integration of both perspectives. That is, measuring flow as a ‘yes-no continuous experience’. Hence, flow only occurs when a certain threshold of its components is reached, although it can range in intensity after that point. Researchers are not yet entirely sure, however, how to distinguish flow and non-flow states.

Considering the combination of its three components, along with its subjective and momentary nature, flow distinguishes itself from other psychological concepts (Abuhamdeh, 2020). Whereas a large amount of studies measured flow with only one or two components, most researchers have reasoned that all of them are required to experience flow. Individuals do not experience flow when they are both absorbed and in control – measured by task involvement for instance – without experiencing an activity as rewarding. Merely experiencing the cognitive aspect of flow is not sufficient for this holistic state. Similarly, flow differs from intrinsic motivation because it additionally implies that individuals are intensively concentrated on their tasks and feel in control. Moreover, flow refers to the quality of individuals’ experiences during their activities, not before or after. Hence, flow is a subjective experience that – instead of focusing on the past (e.g., well-being and satisfaction) or future (e.g., hope and optimism) – determines whether individuals have an optimal and subjective experience in this particular moment. These different features of flow have important implications about how individuals can experience and investigate flow during work.

3. Investigating flow at work

The underlying three components of flow complicate a common approach of investigating this complex state, with researchers examining both general and momentary flow experiences at
work (Peifer & Wolters, 2021). On a general level, researchers typically examine who experiences flow most often and how this relates with different outcomes. This approach follows the perspective of flow being a peak state by comparing the amount of flow occurrences between individuals or activities. These studies often use a version of the original Flow Questionnaire of Csikszentmihalyi (1975) adapted to the work context, which uses flow quotes (e.g., “I wasn’t thinking about anything else”) to have individuals reflect upon whether they had similar experiences during work. If this is the case, individuals are asked to describe the activities that provide such experiences and to rate the intensity of flow during the activity. Researchers also use general flow scales to ask how often individuals experience the components of flow in their work. This general approach enables researchers to identify differences between individuals or activities regarding the likelihood that flow will occur, and how flow relates with different outcomes and predictors on a general level, such as job satisfaction (Liu et al., 2023). However, such methods do not consider the dynamic and short-term nature of flow states. As such, having individuals reflect on their general flow experiences – by asking how often flow occurs in their work and during which activities – does not enable researchers to understand how intensive flow experiences are, and when exactly they take place.

On a momentary level, the aim is to track individuals’ experiences and understand when flow occurs. This approach is based on longitudinal methods (i.e., repeated measures) and researchers commonly investigate flow as a continuous and dynamic state that fluctuates within days. To do so, Csikszentmihalyi developed the Experience-Sampling Method that enables researchers to capture momentary fluctuations in flow. During such data collections, individuals are beeped on random moments at work. After such a beep, individuals have to complete a short survey and reflect upon what they are doing, where they are working and how intense they experienced flow right before the beep. A growing number of studies has used this longitudinal
method to investigate differences in the intensity or amount of flow experiences during work both between and within individuals. However, this method ‘imposes’ flow by assuming that each experience differs in flow intensity and therefore contradicts the assumption that flow is also a peak state (Abuhamedeh, 2020). Other biases and issues are linked to the intensive data collections that are required, with the most important one being common method bias. In sum, despite each method’s (dis)advantages, both provide important insights regarding the predictors and outcomes of flow.

4. The antecedents of flow at work

Explaining why individuals enjoy themselves during work, flow positions itself within important theories and models (e.g., Job Demands-Resources Model, Job Characteristics Model) by acting as an intermediate between work characteristics (e.g., autonomy, social support) on the one hand, and both short-term (e.g., stress, performance) and long-term (e.g., well-being, satisfaction) outcomes on the other hand. First, whether individuals experience flow during work depends on four main categories of predictors, i.e., the characteristics of tasks, jobs, and social and organizational environments (Peifer & Wolters, 2021).

With regard to the characteristics of tasks, individuals ought to feel ‘optimally challenged’ to experience flow. This predictor indicates an inverted U-shaped relationship between the challenge of a work task and flow (Norsworthy et al., 2021). A moderate level of challenge is required for individuals to direct their attention to an activity and use their skills, and thus experience flow (Csikszentmihalyi, 1975). When a task is too easy and the use of skills is not required, individuals might feel in control and perform well, but also bored, distracted and unfocused, as their minds start to wander and process non-task related thoughts. However, too much challenge causes stress and anxiety because individuals cannot deal with the demands of
the situation. When that happens, feelings of both fluent progress and immense concentration – both required for flow – are hindered. Therefore, there is consistent evidence showing that flow occurs when individuals perceive that they can meet the challenging demands of a task (Fong et al., 2015). Moreover, there are other task-related characteristics that stimulate flow experiences because individuals are more motivated to perform them, such as task interest, meaning, or importance.

Regarding individuals’ jobs, researchers typically focus on motivational job characteristics to investigate whether flow experiences vary between different kinds of jobs (Peifer & Wolters, 2021). Although some tasks are challenging and require the use of skills, individuals must also be motivated to perform them (Fong et al., 2015). In line with the conceptualization of flow as a motivational experience, there is a broad consensus that motivational job characteristics – such as autonomy, skill variety and feedback – relate to flow at work (Liu et al., 2023). As such, this line of research indicates that individuals who are motivated to perform their work are more likely to experience more flow experiences than others. However, it is important to note that there are several ambiguities in the literature with respect to the motivational aspect of flow. Initially, Csikszentmihalyi (1975) reasoned that a core component of flow is its autotelic nature, referring to the notion that individuals are intrinsically motivated to perform an activity, for its own sake and without any external rewards or goals attached to it. Including intrinsic motivation as a component of flow, however, poses risks to circular reasonings. Being motivated to perform an activity might act as an antecedent of flow, whereas individuals (unconsciously) feel a sense of intrinsic reward during flow. Moreover, individuals can also become intrinsically motivated to pursue a work activity after it enables them to experience flow, although it might be initially performed for external reasons (e.g., money).
Considering this ambiguity, Norsworthy et al. (2021) refer to ‘high motivation’ as an antecedent, instead of intrinsic motivation.

Finally, both the social and organizational environment can influence flow (Peifer & Wolters, 2021). To experience flow, individuals often have to deal with challenges and solve problems. As such, colleagues or supervisors might stimulate the development of skills and support individuals through social interactions, informational support, or coaching. Preliminary evidence even suggests that flow is a contagious experience, indicating that being around individuals who are in flow can increase the likelihood of experiencing this state (Peifer et al., 2022). However, individuals might also isolate themselves to experience flow, thereby compromising social connection. Moreover, also social interactions at work can potentially hinder individuals’ flow experiences. Think for instance of noisy work offices, making focused attention more difficult. Regarding the organizational environment, individuals work in different kinds of organizational structures or cultures, and it is more likely that flow occurs more often in creative, innovative, or supportive environments (Peifer & Wolters, 2021). That is, flow experiences are stimulated when individuals feel encouraged to ask questions, reflect and think critically about their work, and have the right tools and utilities to develop and share their knowledge.

Whereas the characteristics of tasks, jobs and environments are the common starting point to understand when flow occurs at work, there are different compounding factors that might impact the relationships between these antecedents and flow (Norsworthy et al., 2021). First, individuals differ in their perspective towards the challenges of their work or the characteristics of their jobs. Therefore, there are several individual characteristics that might impact whether challenging tasks relate to flow, such as curiosity, conscientiousness, or self-efficacy. Second, not only do the characteristics of individuals’ environments or jobs relate to flow, but they can also
impact whether and how individuals experience flow during work. For instance, two individuals performing a challenging task might differ in their likelihood of experiencing flow, based on whether they are working in different cultures (e.g., innovative or not), or whether they feel supported or receive decision autonomy on how to perform such a task. Therefore, different combinations or interactions between the antecedents (e.g., the interaction between job and task characteristics) might result in different flow experiences.

5. The outcomes of flow at work

Thanks to the rewarding feeling during flow, research has consistently shown that this state relates to both well-being and productivity outcomes (Liu et al., 2023). Moreover, flow provides several opportunities to deal with stressful environments that characterize many individuals’ workdays. As such, encouraging and stimulating flow has important implications for organizations and practitioners. We will discuss three main categories of outcomes of flow – i.e., ‘positive development’, ‘high functioning’ and ‘further engagement’ – as identified by the scoping review of Norsworthy et al. (2021). Considering that flow is dynamic and fluctuating in nature, having one particular flow experience relates to short-term outcomes (e.g., reduced stress), whereas experiencing flow more often impacts long-term outcomes (e.g., enhanced well-being). Although researchers have not yet explicitly focused on this distinction, it can provide further insights in the outcomes of flow at work.

First, researchers mostly investigate individuals’ positive development after flow (Norsworthy et al., 2021). A rationale for this category of outcomes – including enhanced well-being, mental health, meaning, and reduced stress – is the notion that individuals are not thinking about themselves or their daily stressors when they are in flow (Csikszentmihalyi, 1975). Irrelevant or negative thoughts occur quite often in individuals’ daily lives, triggering stress and
anxiety. In a state of full attention towards the task at hand, these thoughts are channeled away, and individuals’ self-awareness emerges with their actions, thereby creating a positive feeling of enjoyment. As mentioned previously, a positive feeling after flow is different from the intrinsically rewarding feeling that individuals have during flow. Individuals are not aware that they are enjoying themselves in flow, considering that their full attentional capacity is being used to perform an activity. This experience means that there is no time, or thought, left to reflect on what individuals are doing or what they like about doing it. Instead, individuals afterwards reflect on flow being an enjoyable experience. When this feeling occurs more often at work, well-being and health increases over time.

A second category of flow outcomes is identified as ‘high functioning’ by Norsworthy et al. (2021). Within the context of work, researchers consistently show that flow is related to different performance-related outcomes, such as task performance, extra-role behavior, commitment, and creativity (Liu et al., 2023). Individuals are optimally challenged to experience flow, so that their full attention is directed towards their task, and a wide variety of skills are used. As such, individuals feel highly concentrated, completely in control, and fully engaged in their tasks. Therefore, flow enables individuals to get more work done, feel more productive, make better decisions, and exhibit better problem-solving skills – both in the short- and long-term. Following the reasoning that flow is an optimal state of attention, however, it might not even be advisable to always experience flow during work, considering that individuals are intensively using cognitive resources that might expand over time. Therefore, shifting between lower (e.g., mindless work, rest, or breaks) and higher levels of attention (e.g., flow as a peak experience) could be more beneficial for sustainable cognitive functioning.

Finally, the third category of flow outcomes, i.e., ‘further engagement’, refers to individuals becoming both more engaged in their activities and developed in their abilities to
experience flow more often, thanks to its rewarding nature (Norsworthy et al., 2021). Therefore, flow is regarded as an antecedent for other positive outcomes, such as work engagement, commitment, or involvement (Liu et al., 2023). Making progress on activities and using skills to the fullest level is regarded as fulfilling. Furthermore, feeling fluent performance and effortlessly in control also satisfies feelings of competence and enhances individuals’ self-image. This rewarding way of working triggers the ability and motivation to experience flow in the future – especially during tasks that enable flow. Therefore, individuals feel stimulated to further develop their skills and challenge themselves. It is important to note, however, that the potential dark side of work-related flow has been underexplored so far. Whereas flow relates to further engagement, flow might lead to individuals becoming too absorbed by or addicted to work, which may diminish their functioning over time.

6. Critical reflections and future avenues regarding work-related flow

Although previous studies on work-related flow already gained important insights, further steps can be taken to advance our understanding of this concept. Critical reflections on the work-related flow literature relate to the way that flow is measured, investigated, and positioned amongst other concepts.

A first reflection relates to the measurement of flow at work. Whereas researchers commonly agree upon the core definition of flow, many different approaches to measure flow exist in the literature. Although flow is characterized by its peak nature and unique combination of its three components, researchers do not always measure it as such. Instead, they measure flow as a continuous state or without incorporating all its components. These different approaches create ambiguity in understanding what concept researchers are exactly measuring, or in comparing results from different studies. Agreement on a common measure of flow would
facilitate both the development and accumulation of knowledge about this concept. In this regard, Peifer and Engeser (2021) recommended researchers to measure flow with its three components and as a ‘yes-no continuous’ concept. To do so, future research could establish a common approach to distinguish flow states from non-flow states, based on a clear cutoff between both. This research avenue will also provide further clarity about the peak or continuous nature of flow.

A second reflection relates to the research designs and methods used to investigate flow. Considering that flow is a short-term peak experience, little is known about the amount, duration, intensity, and dynamics of flow experiences at work (Peifer & Engeser, 2021). In general, researchers might wonder how often (peak) flow experiences actually occur during work tasks and which methods are best suited to capture and examine flow. Intensive longitudinal designs (i.e., beeping individuals multiple times a day during work) might not only be perceived as both intrusive and hindering work-related flow, but they might also prevent researchers from capturing (enough of) the peak flow experiences. The use of less intensive and intrusive research designs – such as day reconstruction studies – could avoid individuals being hindered in reaching high(er) flow states, while still using procedures to avoid memory bias. Moreover, complementing self-reported measures of flow with physiological, neuroscientific, observational or user data (e.g., heart rate, brain activity, eye gazing, screen time) can further support researchers to understand the dynamics of work-related flow. These types of data collections might enable researchers to overcome the issues of intrusive and intensive designs and the biases of self-reported measures.

A final reflection relates to the limited attempts to both integrate flow within other theoretical frameworks and position flow amongst other psychological concepts. In general, researchers might critically argue that there is a strong overlap between flow and other important concepts (e.g., motivation, engagement, attentional involvement) and (therefore) doubt the value of work-related flow. Despite various attempts to relate flow with other theories or models (e.g.,
Job Characteristics Model), these are not yet exhaustive and related to each other. To understand how flow is positioned amongst similar, yet different and important concepts, researchers could further aim to integrate flow within a comprehensive framework of different theoretical models (cf. Liu et al., 2023). Moreover, to distinguish flow from other concepts and overcome critics on the value of this state, researchers might further explore the potential relevance of work-related flow for individuals’ long-term functioning (e.g., in terms of career success or life satisfaction). Similarly, researchers could further comprehend the meaning and value that individuals attach to flow at work – while using qualitative interviews for instance. In doing so, researchers will build upon the initial endeavors of positive psychologists to stimulate better experiences at work.

Authors

Jonas De Kerf – PhD Researcher – KU Leuven & Vrije Universiteit Brussel (Belgium)

Rein De Cooman – Professor – KU Leuven (Belgium)

Sara De Gieter – Associate Professor – Vrije Universiteit Brussel (Belgium)

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