Synthesising Concepts Underlying Increase in Flow, Self-development, and Reflection with Application to the Creative Process

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Abstract

The way in which natural environmental stimuli can maintain or increase health is not fully understood. This paper suggests that an essential aspect of the medicinal effect is due to stimuli that encourage a psychological state termed "flow" in relation to individuation (or maintenance of a self), and that creative reflection on nature is a transformative practice as defined by author Michael Murphy. A synthesis of current ideas from the literature on environmental psychology and self-development can provide a cyclic model that offers an interpretation of a fundamental reality behind integral and transformative practices.
This paper also explores the question of why and how it is important to develop a linkage between an individual's inner constructs and outside stimuli to maintain health. A theoretical explanation is offered with an example of reflection that illustrates how linkage can occur and how it may generate flow. The major research on the relation of natural environmental stimuli to human health is discussed, and the work of theorists that supports the development of a model based on a synthesis of their ideas is examined. This model was not explicit in any of their work, but it contains aspects that they all share.

In this paper, concepts of environmental psychology are placed into the wider context of human health and the natural environment with an example using the artistic process. The development of an artist's work after the initial vision is discussed from ideal to real. To demonstrate a reflective cycle of self-development that maintains health and that is perpetuated by flow between mental constructs and outside stimuli, it is necessary to identify what those constructs are and how the cycle works on them in a transformative manner. The author's model allows individuals to become more conscious of this process, and in so doing, to resolve any previously unconscious biases or barriers to flow states.

Synthétiser les concepts : augmentation sous-jacente du flux, de l'auto-développement et de la réflexion, et son application au processus créatif

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Résumé

On ne connaît pas tout à fait la manière dont les stimuli environnementaux naturels peuvent entretenir ou augmenter la santé. Cet article suggère qu'un aspect essentiel de cet effet est dû à des stimuli qui encouragent un état psychologique appelé « flux » relié à l'individuation (à savoir, la prise de conscience de soi), et que la réflexion créative sur la nature est une pratique transformatrice, ainsi que Michael Murphy l'a remarqué. Une synthèse des idées actuelles de la littérature sur la psychologie de l'environnement et sur l'auto-développement, peut fournir un modèle cyclique qui offre une interprétation d'une réalité fondamentale sous-jacente à certaines pratiques intégrales et transformatrices.

Cet article explore également la question de savoir pourquoi il est important, afin de conserver la santé, de développer une corrélation entre constructions intérieures et stimuli extérieurs, et comment y parvenir. Un exemple de réflexion qui illustre comment ce lien peut se produire, et comment il peut générer du flux, sert d'explication théorique. Les recherches les plus importantes quant à la relation entre les stimuli environnementaux naturels et la santé humaine sont passées en revue, tout en examinant le travail de théoriciens qui se réfère au développement d'un modèle basé sur une synthèse de leurs idées. Ce modèle n'est explicite dans aucun de leurs travaux, mais il contient des aspects que tous partagent.

Dans notre article, les concepts de psychologie environnementale sont placés dans un contexte plus étendu de santé humaine et d'environnement naturel, grâce à un exemple ayant recours au processus artistique. On y évoque, de l'idéal au réel – ce qui fait suite à la vision initiale – le déroulement de l'œuvre d'un artiste. Afin de pouvoir démontrer un cycle réfléchi d'auto-développement, alimenté par le flux entre les constructions mentales et les stimuli extérieurs, apte à maintenir la santé, il est nécessaire d'identifier ce que ces constructions sont et comment le cycle opère, sur elles, avec une qualité transformatrice. Le modèle de l'auteur permet aux individus de devenir plus conscients de ce processus, et ce faisant, de résoudre tous les biais précédemment inconscients ou les obstacles aux états de flux.

Sintetizando Conceptos Subyacentes al Aumento de Flujo, Autodesarrollo, y la Reflexión con Aplicación al Proceso Creativo

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Resumen

La forma en que los estímulos ambientales naturales pueden mantener o aumentar la salud no se comprende completamente. Este artículo sugiere que un aspecto esencial del efecto medicinal se debe a los estímulos que fomentan un estado psicológico denominado "flujo" en relación con la individuación (o el mantenimiento del yo) y que la reflexión creativa sobre la naturaleza es una práctica transformadora según la definición del autor Michael Murphy. Una síntesis de las ideas actuales de la literatura sobre psicología ambiental y autodesarrollo puede proporcionar un modelo cíclico que ofrece una interpretación de una realidad fundamental detrás de prácticas integrales y transformadoras.

Este artículo también explora la pregunta de por qué y cómo es importante desarrollar un vínculo entre las construcciones internas de un individuo y los estímulos externos para mantener la salud. Se ofrece una explicación teórica con un ejemplo de reflexión que ilustra cómo puede ocurrir la vinculación y cómo puede generar flujo. Se discute la principal investigación sobre la relación de los estímulos ambientales naturales con la salud humana y se examina el trabajo de los teóricos que apoyan el desarrollo de un modelo basado en una síntesis de sus ideas. Este modelo no fue explícito en ninguno de sus trabajos, pero contiene aspectos que todos comparten.

En este artículo, los conceptos de psicología ambiental se colocan en el contexto más amplio de la salud humana y el medio ambiente natural con un ejemplo utilizando el proceso artístico. El desarrollo de la obra de un artista después de la visión inicial se discute de ideal a real. Para demostrar un ciclo reflexivo de autodesarrollo que mantiene la salud y que es perpetuado por el flujo entre los constructos mentales y los estímulos externos, es necesario identificar cuáles son esos constructos y cómo el ciclo trabaja sobre ellos de manera

transformadora. El modelo del autor permite que los individuos se vuelvan más conscientes de este proceso y, al hacerlo, resuelvan cualquier previa parcialidad o barrera inconsciente a los estados de flujo.

Sintetizando conceitos subjacentes à intensificação do estado de fluxo, autodesenvolvimento e reflexão com aplicação ao processo criativo

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Resumo

A maneira pela qual os estímulos ambientais naturais podem manter ou aumentar a saúde não é totalmente compreendida. Este artigo sugere que um aspecto essencial do efeito medicinal se deve a estímulos que incentivam um estado psicológico chamado "estado de fluxo" em relação à individuação (ou manutenção do eu), e que a reflexão criativa sobre a natureza é uma prática transformadora, como definido pelo autor Michael Murphy. Uma síntese das ideias atuais da literatura sobre psicologia ambiental e autodesenvolvimento pode fornecer um modelo cíclico que oferece uma interpretação de uma realidade fundamental por trás das práticas integrais e transformadoras.

Este artigo também explora a questão de por que e como é importante desenvolver uma ligação entre os construtos interiores de um indivíduo e estímulos externos para manter a saúde. Uma explicação teórica é oferecida com um exemplo de reflexão que ilustra como a ligação pode ocorrer e como ela pode gerar o estado de fluxo. A principal pesquisa sobre a relação dos estímulos ambientais naturais sobre a saúde humana é discutida e o trabalho dos teóricos, que apoia o desenvolvimento de um modelo baseado em uma síntese de suas ideias, é examinado. Esse modelo não foi explicitado em nenhum de seus trabalhos, mas contém aspectos que todos compartilham.

Neste trabalho, conceitos de psicologia ambiental são colocados no contexto mais amplo da saúde humana e do meio ambiente natural com um exemplo usando o processo artístico. O desenvolvimento do trabalho de um artista após a visão inicial é discutido do ideal ao real. Para demonstrar um ciclo reflexivo de autodesenvolvimento que mantém a saúde e que é perpetuado pelo estado de fluxo entre construtos mentais e estímulos externos, é necessário identificar quais são esses construtos e como o ciclo age sobre eles de maneira transformadora. O modelo do autor permite que os indivíduos se tornem mais conscientes desse processo e, ao fazê-lo, dissipem quaisquer prévias inclinações ou barreiras inconscientes aos estados de fluxo.

Aufbauende Konzepte als Basis für die Steigerung des „Flow", der Persönlichkeitsentwicklung, und Rückschau mit Anwendung für den kreativen Vorgang

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Zusammenfassung

Der Vorgang, wobei Stimuli aus der natürlichen Umgebung die Gesundheit erhalten oder verbessern kann, ist noch nicht komplett verstanden. Dieser Beitrag weist darauf hin, dass Stimuli, die den psychologischen Zustand „Flow" hervorrufen, entscheidend die Gesundheit hinsichtlich der Individuation (oder dem Selbsterhalt) beeinflussen. Diese kreative Rückschau

auf die Natur bewirkt gemäß dem Autor Michael Murphy eine Transformation. Eine Synthese aus den gängigen Ideen einschlägiger Literatur über die Umweltpsychologie und Persönlichkeitsentwicklung könnte ein periodisches Modell vorschlagen, das eine Interpretation einer fundamentalen Realität hinter wesentliche und transformative Vorgehensweisen anbietet. Diese Arbeit untersucht auch warum und wie wichtig es ist, einen Link zwischen dem Inneren eines Individuums und den äußeren Stimuli zu entwickeln, um eine gute Gesundheit zu erhalten. Hier gibt es eine theoretische Erklärung, die eine Rückschau vorschlägt und illustriert wie ein Link stattfinden und ein Flow erzeugt werden kann. Dieser Beitrag bespricht die Hauptuntersuchung bezüglich des Zusammenhangs der Stimuli aus der natürlichen Umgebung auf die menschliche Gesundheit und untersucht die Arbeit der Theoretiker, die ein Modell aus einer Synthese ihrer Gedanken vorschlagen. Dieses Modell findet man in deren Arbeiten nicht explizit zurück aber es beinhaltet verschiedene Aspekte die alle gemeinsam teilen. Es werden Konzepte aus der Umweltpsychologie in einem größeren Kontext der menschlichen Gesundheit und natürlichen Umgebung dargestellt. Hierzu wird ein Beispiel, das einen künstlerischen Vorgang darstellt, gewählt. Die Entwicklung eines Kunstwerkes, entstanden aus einer Ausgangsvision wird von seiner Idealvorstellung bis zur Umsetzung besprochen.

Um einen Rückschau des Persönlichkeitsentwicklungsprozesses, die die Gesundheit und den Flow zwischen mentale Konstrukte und äußere Stimuli aufrechterhält, demonstrieren zu können, sollte man ermitteln, welche diese Konstrukte sind und wie diese Prozesse transformativ wirken. Das Modell des Autors erlaubt dem Individuum sich diesen Prozess bewusster zu werden und auf diese Weise alle vorhergehende unbewusste Vorurteile oder Hemmungen den Flow Zuständen gegenüber zu beheben.

Introduction

According to Mihály Csikszentmihályi's theory, flow is described as "the experience of complete involvement in a challenging task where action occurs fluidly."[1,2] Several studies have linked flow with the concept of peak performance,[3] and it is said to require nine distinct dimensions, including: a balance between challenge and skill, clear goals, immediate unambiguous feedback, autotelic experience, action-awareness merging, sense of control, loss of self-consciousness, transformation of time, and a high level of concentration on the task at hand.[4,5]

This paper suggests that flow is established and maintained by a process in which stimuli are received from the environment and transferred without interference to consciousness. There is then a flow of information from the sense organs to consciousness without details being filtered out. Research indicates that this type of flow is easier for the brain to achieve in natural environments.[6] The same process then allows for a seamless flow between an object of perception and a subject's internal model of the object. This experience is transformative if practiced. At its most fundamental, the subconscious can include biological workings of the body, and consequently, when it is established between the environment and an individual's mind, flow can be established between the mind and bodily actions. To develop flow between a mental image of a bodily movement and an actual bodily movement can take practice, where mental attitudes are important.

It seems that flow cannot happen all of the time as it is not always possible to produce a perfect inner model of an outside object due to lack of knowledge. This is because some phenomena are not computable or fully perceptible to us.[7] There is a need to protect the

consciousness from information overload. However, by being more aware of its occurrence, one can develop the ability to reach a state of peak performance directly related to maintenance of health due to time spent in nature.

A model describing some of the essential aspects involved in aiding or inhibiting flow is developed here, with a list of logical assumptions that must be considered for flow to occur. The aspects are considered as additions to the nine dimensions of Csikszentmihályi's theory of flow that aids the process. Finally, it is suggested that natural environments can make this sort of flow occur more readily than artificial environments because they induce a form of mental attention that is effortless.[8] This is one of the attractions of outdoor sports, such as walking, cycling, and climbing. After continued practice in such activities, flow is reinforced biologically and maintains health in a cyclic process.

Health Benefits of Natural Environments

The benefits to health and wellbeing of safe natural environments have been well-recorded. [9,10,11,12] Recently, the impact of access to natural environments on specific medical conditions has been investigated and significant evidence collected to support the claim that visual and other stimuli provided from natural environments can improve and maintain health.[13]

The reasons why single stimuli alone, such as images or sounds, should have such an impact on health have not been fully explained; however, there are proposed reasons, such as that the human mind finds them easier to process,[14,15] the effects of aromatic chemical secretions from trees,[16] and the prevention of rumination.[17] It is suggested that as part of an ongoing psycho-biological process that includes the maintenance of a self-concept, the mind reflects on stimuli from the environment in a specific way. Therefore, an awareness of an ongoing life-process allows for the improvement of health. It is suggested that natural environments provide the stimuli needed to keep the process running smoothly through relaxation of the intellect and attention to allow metacognition. Thus, contemplation may require practice and dedication, and the model presented here is designed to aid in such practices. Further, it seems that human senses and mental processing are adapted to interpret stimuli from natural objects and phenomena, such as streams, plants, and animals rather than cities.[18]

Biological and Behavioural Impact of Transformative Practice

According to tradition, contemplative practice has the ability to produce lasting changes in behavioural traits, and thus practitioners maintain that such changes are the fruit of the highest levels of meditative practice.[19]At such a high level of contemplative or meditative experience, strong negative feelings, such as anger, are said to come under the individual's control. They are replaced by a predominance of positive qualities, such as compassion and equanimity. Some benefits of meditation, such as compassion, come more easily than others. This may be because humans have a biological preparedness to develop compassion.

Investigations using EEG traces show a pattern of gamma oscillations that occur when different brain regions fire in harmony during meditation.[20] They are also seen when a problem has been solved by the brain. This gamma oscillation is seen in long-term meditators even when they are asleep.[21] Presumably, such oscillations will also occur with flow states. However, in non-meditators such oscillations usually last only one fifth of a second. The gamma oscillations are far more prominent in a meditator's brain activity and are reported to last for minutes at a time. The gamma oscillations also occurred in synchrony across the brain

unaffected by the sort of mental activity the individual performed. An altered "state" would occur only during meditation. These were altered traits resulting from altered brain biology that shows up before meditation has begun

Furthermore, genes may be expressed depending on an individual's behaviour.[22] Changes in the expression of specific genes before and after a day of meditation in a group of long-term meditators were observed. They practiced for eight hours, and after the eight hours participants were found to have a down-regulation of inflammatory genes.[23] Contemplative practices can "turn off" genes that may cause health problems and promote self-development.

Self-development Models

There are several psychological theories on the human capacity to develop toward future selves that an individual may or may not plan for in advance. This can be a natural process of maturation or something guided with effort.

The psychologist Carl Gustav Jung envisioned a process of metacognition in which unconscious contents are integrated into the consciousness.[24] Jung called this process "individuation."[25] It involves a process in which a person recognizes unconscious biases and brings them into consciousness, correcting them if necessary. Jung depicted individuation as a cyclic process.[26] He envisioned a process in which people refine themselves by integrating the ego with unconscious content and an almost independently perceived self. The self-image or ego and the self or "I" become more and more recognizable as quasi-independent as individuation progresses. Individuation involves the differentiation of the self out of one's conscious and unconscious elements. The self is then experienced as a totality and unity.

In *Aion*, Jung provides a formula for this process. In this formula the self (A) descends into the subconscious (B), passing the shadow (the shadow being the repressed aspects of one's self, or unpleasant aspects of a personality). The self than enters subconscious content (C), and by "crystallization" (D) the self reduces the chaos of the unconscious content into an order. Once order has been obtained, the self "rises" to its original state (A), bringing with it retrieved unconscious content.[27] Now the individual is conscious of the new order gained. This continuous process is linked to flow in that it is the underlying cause of the flowing exchange between biology and psychology. The process that mediates individuation is also the catalyst for flow states. All self-development seems to include reaching flow states by bringing about free flow of thoughts and behaviour without dogmatic barriers to logic.

Integral and Transformative Practices

Providing people with instructions on how to control autonomic functions can be difficult, and people who can control such processes find it difficult to describe how. There is difficulty in talking about biofeedback because the acquisition of motor and sensory skills involves subtleties that have no commonly accepted names. However, by practicing, people can discriminate between fleeting sensations and thoughts in a constructive way as described by Michael Murphy.[28, 29] Furthermore, if someone apprehends subtle or evanescent sensations in some bodily process, they do not need to find words to describe them in order to control them. Putting such sensations into words could actually make the experience more difficult, so a symbolic model is needed.

Model of Flow (Theoretical Explanation)

The human mind detects the small-scale details of natural phenomena through sensory organs[30] and then filters out aspects it believes are not needed.[31] In theory, the microstructure of phenomena is captured without bias, subconsciously, before being filtered out by the conscious mind.

There are four suggested realms to the human self based on the fact that the mind cannot be separated from the material body, and that the self has conscious and unconscious experiences. The four realms include: material self, subconscious self, conscious self, and intersubjective self. Objective stimuli from the environment are processed firstly by the body or material self. At this time the phenomena in nature are often detected as they are, and the information collected on them by the material self is highly accurate. The stimuli are then processed by the subconscious self before being filtered and embellished by the conscious self.

Objective phenomena exist outside of the human imagination and are independent of human beliefs or consciousness. These phenomena exist whether people believe in them or not. Subjective phenomena are said to depend on the beliefs and consciousness of an individual. Such phenomena may disappear or change if individuals alter their beliefs. According to Yuval Harari, the intersubjective "is something that exists within the communication network linking the subjective consciousness of many individuals."[32] It is a concept shared in the imaginations of many people and can be grounded in natural law. Examples include concepts such as legal systems, money, deities, and nations. Such concepts can be grounded in logic (natural law) or may simply be shared beliefs, and they greatly influence what happens in human societies. If one individual were to stop believing in an intersubjective phenomenon, then it has little consequence because intersubjective phenomena will only mutate or disappear if a large number of people in a community stop believing in them. Such phenomena sometimes exist differently from natural laws, but they influence human social life in a similar fashion.
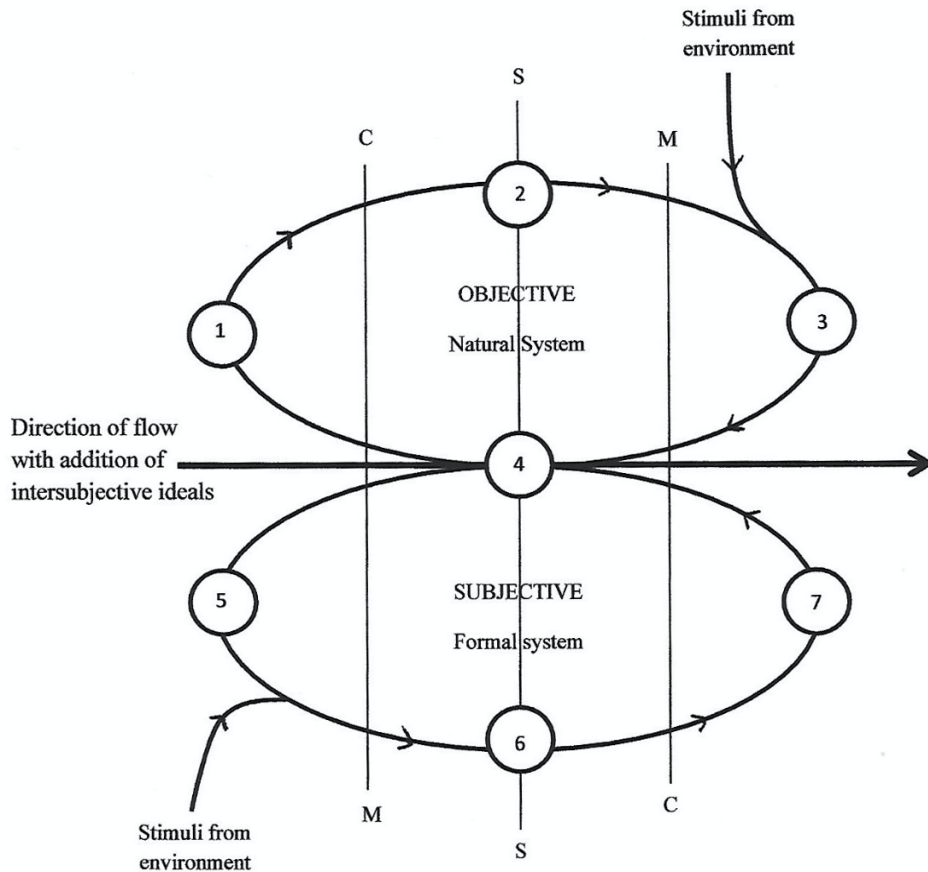
Figure 1. The process of reflecting on nature including the layers of self-perception and concepts of objective and subjective knowledge. The influence of stimuli perceived as being integrated from outside of the individual is depicted by the entrance of abstract ideals from outside and environmental stimuli entering through the senses. Flow due to reflection requires the matching of the natural object with a formal system derived from personal experience. The matching of object and subject requires the sevenfold cycle (1-7). Points 1, 2, and 3 represent the axioms of identity, non-contradiction, and excluded middle. Point 4 is the included middle. Points 5,6, and 7 are the same axioms for the subjective. Matching induces the process of flow, indicated by the arrow through the center. C, S, and M refer to the boundaries of the subconscious, conscious and material self. Information must pass through the material self, the subconscious, and enter consciousness.

The concept of an intersubjective self implies an important aspect of the model suggested here. The human condition necessitates that the "ideal" or "perfect" is experienced as coming from an outside source, and here it has been referred to as the intersubjective self (a concept of an ideal self, shared by people in a community).

In Fig. 1, the upper aspect of the cycle represents one logical level in the object of perception, and the lower aspect represents the corresponding level in the subject of perception. Both sides meet and interact in the self (S) that is also experienced as layered.

The process for the reflection on subjective stimuli from nature is basically the same. Both reflection on the object and on the subject intertwine to produce an ongoing cycle. An individual performs this cycle continuously without having to concentrate. It can be useful for individuals to become more aware of this cycle, and when they do, it becomes a metacognitive cycle of reflection or contemplation. At times, both objective and subjective reflections can unite in a "zone of non-resistance" as Basarab Nicolescu described it.[33] This is an area that joins one logical level (or theory) with another and can only be traversed by leaving one logical theory and entering another. Ideals can be shared across different individuals. This applies to all abstractions that are perceived as real or shared because they are perceived to exist independently of the individual and as entering the reflective cycle from an outside source. An abstract ideal is often perceived as an ego-transcending ideal, or intersubjective self, by the individual who is reflecting. When individuals are aware of the contrast between ideal and real behavior, they can compare and contrast the ideals of the "real" self with their actual behavior and learn.[34]

According to Nicolescu, any process of logical reasoning appears to be seven-fold to the reflector because when the reflector attempts to move from one logical theory about nature to another, or traverse "levels of reality," the reflector must face the three axioms of classical logic in both the object and subject of their experience (providing six principles). They must then accept a seventh principle: the "included middle."

This cycle of cognition processing is described below in an example. The essential concepts needed for reflection on nature described by this model agree with those of many traditional philosophies[35] and are included in Table 1. Flow is established with movement between subconscious and conscious content. It may also be blocked or "grounded," if necessary.

Table 1 - Reflective Flow Model			
OBJECTIVE reality in nature	1	Establish the situation or task to be reflected on in terms of what was expected to happen.	
	2	Identify what was not supposed to happen.	
	3	Is there any ambiguity between expectations and what actually happened? Is the individual completely clear about the aims and performance of the task?	
Zone of non-resistance	4	Move from what has been learned by considering outside events and now consider subjective events. Establish connection between the two.	
SUBJECTIVE mental model	5	Establish what was expected experientially. Did the image in mind translate to the performance of the task?	
	6	What, if anything, happened that was not supposed to?	
	7	Was there any ambiguity between the expectations or hopes of the individual and anything that did not go as planned? Is it certain that the subject has no subconscious biases or beliefs about how to undertake the task?	
Zone of non-resistance	4	Return to the zone of non-resistance.	
INTERSUBJECTIVE Single community	1	Are there any cultural norms attached to the object and its description?	
	2	Identify any subconscious aspects relating to the object.	
	3	Consider subconscious and conscious aspects together relating to the object and compare them.	
Zone of non-resistance	4	Return to the zone of non-resistance.	
INTERSUBJECTIVE Humanity	5	Do people have any biases toward any specific depictions of the object, and how does this differ between communities?	
	6	What is the general conscious attitude of the population, and what is the subconscious attitude? Is perception of the object influenced by aspects of the collective unconscious?	
	7	Is there, or can there be a consensus on knowledge of the object? If there is and it is independent of levels of reality, it may be pure knowledge. Return to the beginning.	

Improving Skills and Health Using the Flow Model

The cycle of the suggested model develops autonomy by illustrating how knowledge may be gained without the need of any outside agency, and that self-knowledge can improve knowledge of nature. By reflecting on the way in which knowledge is gained by the mind, reflectors can increase their ability to analyze issues more accurately without bias.

Now meeting with problems does not cause as much anxiety in the reflector, and they are met with acceptance. The self and one's ideals are experienced as a process of development that is no longer fixed but flowing.

Every intellectual construct about natural events involves observation of the natural system itself and the development of a formal system to describe it (a formal system being a logical theory). The natural system is governed by causal entailment, while a formal system is governed by inferential entailment (the rules governing the mathematics built into it). The

logical theory may be based completely on subjective experience at first, but, if corroborated by evidence from the natural system itself and intersubjective approval, it is possible for the formal system to be equal to the natural system. This can occur in theory if the encoding mapping the natural system and its causal entailment to the formal system and its inferential entailment is correct.[36] There is then also a corresponding decoding from the formal system to the natural system. This cycle suggests that it is possible for the ideal human mind to comprehend any natural system and match subjective experience with objective facts. There are seven basic steps to matching objective and subjective phenomena, which are outlined below.

Logical theories may be arranged in a hierarchical fashion so that one theory appears to be more fundamental than others when one approaches an intellectual problem. This has the implication that during reflection, the human mind may perceive reality or nature as consisting of logically distinct levels. If it is accepted that nature appears to human perception as layered in the above fashion, it can also be proposed that each perceived level contains the same (or related) logical constructs. Each level would then have a self-similarity.

Such level independent logic could include the rules of classical logic. Classical logic relies upon the following three axioms:[37]

> 1) The axiom of identity: A is A.
> 2) The axiom of non-contradiction: A is not non-A.
> 3) The axiom of the excluded middle: there exists no third term T ("T" for "Third") which is at the same time A and non-A.[38]

These axioms describe a common result of logical reasoning or reflection. That is the appearance of mutually exclusive and contradictory opposites in theories about nature. This appearance is brought about by assuming the necessity of the axiom of the excluded middle. The need for the axiom has been challenged by some philosophers, and it has been suggested that in physics the fundamental particles cannot be described as isolated but as connected in a continuous totality.[39] Werner Heisenberg claimed that physics offered examples of times when axioms one and two do not hold. They included the ideas of superposition and possibility in quantum theory in which a particle can be said to exist in two states at once for an observer.[40]

According to Basarab Nicolescu, to understand the world, the principle of the excluded middle should be replaced with an included middle described by the following axiom: "There exists a third term T, which is at the same time A and non-A."[41] Nicolescu suggested that logical levels can only be traversed completely successfully by including this axiom, or that a "hidden third" must be kept in mind when trying to move from one discipline – or logical theory – to another perceived higher-level logic. Otherwise, there is a resistance to analysis because a lower level theory loses explanatory power as one's knowledge of it grows and must be superseded by another.

Significantly, Nicolescu suggests that since all things are subject to the levels of reality imposed by logic, both subjective and objective experience also must be. Object and subject are viewed under the same three axioms of classical logic above as the levels of reality, and acceptance of an included middle is required to unite them. Nicolescu's theory allows for knowledge to traverse not only the zone of non-resistance between perceived levels of reality, but also the imagined gap between subject and object.[42] Bridging the gap between subject and

object implies that a mental model, if accurate enough, can match what is happening in nature.

In addition to describing the use of "levels of reality" for human thought, Nicolescu also concluded that there must be seven principles or qualities present on all levels. With object and subject both possessing the three principles or axioms of logic, and a hidden third being added to unite them, seven logical principles are found to guide human thought and reflection.[43]

Here the reflective model makes use of the sevenfold structure with both object and subject having three aspects with a "zone of non-resistance" between them. The intersubjective consideration has been added and allows one to reflect on shared themes that are both subjective and objective (cultural). The objective, subjective, community intersubjective, and intersubjective of humanity are divided into three and joined by a zone of non-resistance. There are therefore fifteen steps to the model in total (Table 1). The numbers refer to the stages of the sevenfold cycle that is repeated twice.

The ability to compare subjective or mental processes with natural ones is enabled, firstly by the fact that mental processes are natural, and secondly, by the fact that some human mental constructs such as language and music may mimic patterns in nature.[44] The microstructure of phenomena is therefore captured subconsciously before being filtered out by the conscious mind. With practice, it is possible to retrieve some of the details that would otherwise be filtered out and to make use of "bottom-up" processing in which details of stimuli are preserved and reach consciousness as much as "top-down" processing, in which details of stimuli are filtered out by the conscious mind.

Mark Changizi provides the example of an artist to illustrate this concept of retrieving details that would otherwise be filtered out. Artists, with practice, can become adept at drawing not just the forms that they see, but the detailed forms that are actually out there in nature. Such individuals develop a cycle of communication between the higher conscious levels of their minds that would filter out unnecessary details and the lower subconscious levels that detect incoming stimuli from sense organs.[45] With experience, the consciousness becomes relaxed and the mind more integrated. There is then smooth movement of content between the two and increased metacognition. Some of the essential aspects needed for proper reflection are outlined with relations to the nine dimensions of flow in Table 2.

Example: Therapeutic Activity

Art students (subject) are often challenged with producing an accurate painting of a landform (object). The image they have in front of them is the object of their consideration. It may be abstract or accurate in detail. If such students wish to produce an accurate reproduction on their canvass of what they see, they must undergo a process that involves the combined use of observation, mental processing of the image, and translation to bodily movement. They must gather the required information from the object of their attention then focus it internally so that it matches their own mental model (and in this case the internal model of form must match the outer form seen in nature). This perceived image or mental model must then be transformed into conscious movement of the body.

Through practice, the movements of the body match the desired mental model in students' minds, so that the work produced has a good likeness to the object of their attention. When

this process occurs, there is a "flow" of information between a student's mind, body and the object of attention. With care, this sort of flow state can be induced more often regardless of whether the mental model is dependent on an external object or an internal creative construct.

An aspect of the natural view may be selected and distilled to its essentials or depicted in all its detail. If artists want their work to represent something truly natural, they may have to go against cultural norms. The model includes the basic stages of the creative process, and, in order to be truly novel, the artist must become aware of the relationships depicted in it. It is necessary to think outside of single scales of perception or formalisms and to somehow grasp what is common to all scales of reality. Something can only be truly understood and captured if its relation to nature as a whole is somehow "seen." Of course, artists may not wish to depict their success at this, but may want to express the frustrations experienced in trying to achieve success. They may also wish to experiment with the real and surreal or individual and group perspectives. The model reveals what is real and consequently can be used to inspire the surreal. The eventual goal is to express their vision in a single image that may be understood by others.

What to Reflect On?

Students reflect on the good and bad aspects of what happened. Was there any conflict of ideas in the mind of the individuals when considering the object of their attention? Could this also be true of individuals' understanding of themselves as the subjective element? Are viewers' perceptions of the object good, and is the same true of their own perception of their beliefs and ability? Is there a clear distinction between what the object of attention is like or is not, or is it ambiguous (2,3)? If it is not clear, can these opposing views be reconciled (4)?

At first, communication is only about external issues and does not include the self. No problems are recognized, or, if they are, solutions are seen as impossible. This conflict is seen as normal and accepted. There is very limited or no communication between, or similarity seen, between the subject and object of experience (self and environment).

Many artists lack confidence, and one way in which confidence is found is by gaining knowledge of the creative process. Nature can be an inspiration for the psyche of artists so that they can actualize a free self as opposed to a self-image. Table 2 lists some of the essential concepts used by artists to develop a flow of inspiration and therefore of confidence.

Commitment to the task and its completion is essential to artists and this involves faith in the fact that skills can be developed. Through practice, the aspects of the natural thing to be depicted by the artist are gained. They are purified from the mass of information provided to the senses and made conscious. The relevance of the chosen aspects is decided through systemic thinking, by understanding the relative level of reality in which those aspects lie, and whether they are level dependent or independent. Flow occurs between chosen aspects at different levels of reality if shared, while level-independent qualities are found between them. A realization occurs relating to the ideal the artists and their community have regarding the natural phenomena being studied and its reality. There may be a dissonance between ideal and real, and action awareness is developed. A true intersubjective experience is achieved if the experience of the artist can be shared with others. The intellect can then be relaxed to a degree and involuntary attention takes over.

The Context: What, Where, and Who?

Artists must think about how the challenges of the situation made them feel. Was their mental model accurate? Was there any conflict between the object and their experience? If so, why? Bottom-up as well as top-down mental processing helps the conscious mind and subconscious to work together at this stage. These processes encourage people or reflectors to be honest with themselves. This metacognition improves the accuracy of reflection by helping individuals understand why they felt the way they did, and therefore, why events unfolded as they did. In this model, relaxing the intellect is needed, as over-analyzing can produce a preference for top-down thinking. Individuals must consider whether the situation went smoothly and for how long.

Expression of environmental non-self topics develops and, although still viewed as external to the self, these items are at least identified. Individuals begin to identify their feelings and reflect on them but are not yet open to challenging their beliefs.

As freer expression of feelings and beliefs about environmental interaction become more differentiated, such integration is not yet fully accepted. If a lack of integration continues, there are more realizations that the self is a reflective process that also exists partially in the concepts of others. The self relies on input from outside to continue its processing.

What Happened and in What Way?

Individuals must consider the model and think about what it was about the situation that helped or hindered the development of the creative process according to the model. Did they feel a connection or disconnection with the object of attention? Was there conflict in concepts, and was there movement between levels of understanding (levels of reality) if levels are applicable? Was the zone of non-resistance traversed by an accurate enough inner model of the scene?

The individual begins to express feelings in the present tense rather than the past. This can cause some anxiety in the individual that manifests in a contradiction between experience (natural phenomena outside or object) and the self (subject). Contradiction between personal beliefs and reality are recognized and outside help is more likely to be accepted.

Could the Reflector Have Done Anything Differently?

All fifteen aspects of the model should be considered along with what would make them work together. Could more knowledge of the object of study improve understanding, or more knowledge of the subjective self, or both? Were there any subconscious biases that required clarification? Was the image captured of the object by the subject accurate from the beginning? And could it be replicated successfully by the subject? Was this due to presence of, or lack of, skill or experience?

As the self is recognized, feelings are expressed freely in the present. Individuals develop a wish to be the "real me" and to know themselves. With this self-knowledge comes realization of the connections between self (inner nature) and the natural environment (objective nature).

What Can be Done Differently Next Time?

A plan can be made about what can be done in the future that includes all fifteen aspects of the model. This plan may include whether the individual has any transferrable skills that can be utilized.

The individual's constructs are no longer perceived as either external or internal because they are recognizable, and problems are seen as solvable. Problems are solvable as solutions and are no longer level dependent, and flow between levels of logical theory begins (both objectively and subjectively) bringing about involuntary attention. Feelings are consequently experienced with immediacy and fullness.

Making the Reflective Model a Conscious Part of Practice

By making this reflective model a conscious part of practice, it will reinforce itself as an ability requiring continuous attention to improve and thus increases the likelihood of reflection becoming a behavioral trait rather than a temporary state. A cycle of reflection is formed as in Fig. 1 and Table 1. If artists want to develop their accuracy, they should reflect on how they may reach a state of flow in their work in which they become aware of the detail in stimuli they receive from the environment.

As feelings are expressed with detail and richness, this last stage can be reached without outside help. Individuals now have confidence in their own ability to unite the natural object and subject of their experience that is expressed as on ongoing process. Any personal ideas about the world are held tentatively and tested against experience. The self is no longer perceived as an object to reflect upon but a process with familiar form. Notable health benefits are realized and any illness (particularly psychological) that was present may now be treated.

As the object and subject are now one, the cycle becomes continuous. There is agreement among the members of a community on the matter. A community may have its own biases as an individual does. There may also be a collective consciousness and an unconscious. To rectify any biases in the group, subjective beliefs of its members must be matched to objective nature.

Table 2 Essential Conceptual Considerations in Reflection on Nature to Encourage Flow		
Concept	**Description**	**Relevant Dimension of Flow Theory**
Faith and commitment to self-development or "individuation"	Faith that self-reflection can change a negative state of mind.[46]	Faith in the cycle of knowledge aids a sense of control.
Systemic thinking	Organisation and relationships between objects are as important as the matter they consist of.[47]	Seeing connections between all things enables high level of concentration.

The possibility of intersubjective experiences	Human reasoning consists of intersubjective qualities and so can only be fully understood through self-knowledge.[48]	Self-consciousness is reduced.
Ego transcending self	The human self operates in at least four distinguishable modes due to functional processing levels of the human mind.[49,50,51]	Allows for autotelic experience by revealing goals that benefit the actual self as an end rather than those that benefit self-image.
Knowledge acquired through metacognition	Cyclical thinking about acquisition of knowledge occurs between conscious and unconscious levels. Logical theories about nature must be held as relative and the "levels of reality" brought about by human reasoning become apparent.[52,53,54]	Metacognition offers immediate and unambiguous feedback.
Most logical theories are not all encompassing	One level of reality completes another as each level alone is not self-enclosed.[55]	Flow is achieved by finding a way of traversing levels and aids autotelic experience.
Symbolism	Only symbolic language can capture meaning of multiple levels of reality.[56,57]	A symbol can be used to speak of aspects experienced on multiple psychological levels and natural scales, translating smooth mental flow into smooth bodily flow.
Conscious realisation of behavioural contradictions	There is a realisation that there can be dissonance between ideal and actual behaviour. An ego-transcending self is recognised.[58,59,60]	Action awareness is developed.
Involuntary attention and Concentration	Involuntary attention is established in which the intellect and consciousness are relaxed enough for metacognition to occur.[61]	Relaxation of intellectual discrimination allows for freer movement of thought and higher concentration on the task at hand.
Commitment to the reflective process has significant health benefits	The act of meta-cognitive reflection is cyclical, and every time a cognitive dissonance is resolved or made conscious the biology of the individual is altered. Sometimes, even genes may be activated or deactivated.[62] Contemplative practices have been scientifically proven to produce significant mental and physical health benefits.[63]	A balance between challenge and skill leads to sense of lasting control and autotelic experience.

Conclusion

To conclude, it is useful to compare flow states and their resultant changes to what occurs as a result of the contemplation of safe natural environments. The human mind processes

information from the environment in a cycle of seven stages irrespective of the situation, and this cycle is an aspect of the collective unconscious of people of all backgrounds. Logical reasoning about stimuli received from nature reveals levels of logical reasoning. The sevenfold cycle is level independent, and consequently, provides the person aware of it with pure knowledge rather than relative knowledge of level-dependent information alone. If individuals become consciously aware of the information they receive from a stimulus and are able to match their subjective formal system with the natural objective one using the sevenfold cycle, flow occurs. Flow in this sense is due to the perfect matching of the causal entailment of the natural system with the inferential entailment of the individual's formal system (model of the object). Flow can unfold in an objective, subjective, and intersubjective manner.

In medicine, it has been observed many times that people can overcome incredible odds and renew their own bodies, even curing what was thought to be incurable. This is done with a success that medical science occasionally struggles to account for. It is one of the outstanding puzzles of biology and psychology. According to Daniel Goleman and Richard Davidson, general health benefits of contemplative practice include: brain and hormonal indications of lower reactivity to stress, lessened inflammation, strengthened prefrontal circuits for managing distress, stronger selective attention, decreased attentional blink, greater ease in sustaining attention, and an enhanced immune system.[64]

The psycho-biological process of maintaining a "self" or "I," referred to as "individuation" or "self-actualisation," involves a cyclical processing of information from outside stimuli. The information from such stimuli is passed through functional levels of the mind and filtered by consciousness at higher levels. The "lower" levels process natural information as it actually is, and in order to access it without it being filtered out requires relaxation of the intellect for metacognition to occur (involuntary attention). Only when metacognition and flow occur is it truly reflective. The reflecting done is not totally intellectual, as in other models, as it relies on intuition and self-knowledge. Its quality also depends on the stimuli the individual receives from the environment. If it is a safe natural environment, the process will run more smoothly than it would in an artificial one. Natural stimuli have the potential to provide therapeutic reflection, as the form of natural stimuli mirrors the organisation of lower level processes of the human mind and thus encourages flow.

The proposed model supports the nine essential elements required for flow to occur, according to Csikszentmihályi. The challenge-skill balance is met by making the inner model accurate enough to match nature. A clear goal is decided by the individual, who in this case is an artist. The fact that stimuli are sought in their original details then provides unambiguous feedback from the environment with an involuntary attention or relaxed intellect that provides an autotelic experience. Action and awareness are also merged during the task by involuntary attention. As the process proceeds, a sense of control increases in practising individuals as their ability in the task at hand feels effortless. As an individual's attention is focused on a task without the need for significant effort, there is less attention focused on self-image. There is, therefore, less need to be self-conscious. Finally, an individual's sense of time may be altered as the task takes attention that would otherwise be focused on the timing of events. A combination of natural environment and purposeful committed reflection can not only have short-term influences on wellbeing but also cause long-term changes in health and behaviour. Practice will alter not only psychological states but also traits. The multifaceted interaction of the human mind with the natural environment means understanding that it requires an interdisciplinary effort.

Simply being in nature can affect health sometimes due to natural environments activating psycho-biological flow, and the ability of the mind to identify with an intersubjective and ego-transcendent self that is capable of reflecting upon itself to reveal common patterns between internal mental and external natural phenomena.

A cyclic process is established, and once a connection is found, it motivates the individual to find more until a sense of completion is reached. The ego-transcendent self is often perceived as an ideal, and through the cycle of metacognition, ideals can be contrasted with actual behaviors, providing a direction for human development. However, the flow cycle is in competition with a "grounding" cycle that limits communication between levels of mental processing and consciousness. Reaching flow states can be increased with practice to the point where it becomes a trait, although such states may not be constant and thus can be part of a life-long learning process.

The flow model will be useful for those interested in contemplative, artistic, and outdoor pursuits. It is an inexpensive way of maintaining health, but a supportive community is needed for individuals to commit to such contemplative activities. As it is a process that impacts health and behavior, it should be considered with care by education, health care, and business professionals of the future.

Conflict of Interest

The author declares no conflict of interest.

Endnotes

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