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Florian Fahrenbach, Florian Kragulj,

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The ever-changing personality: revisiting the concept of triple-loop learning

Triple-loop
learning

Florian Fahrenbach and Florian Kragulj

Information Business, Wirtschaftsuniversität Wien, Vienna, Austria

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Abstract

Purpose – Considering personality as changeable through a bottom-up process of altering states, habits and traits, constitutes a shift in the predominant paradigm within personality psychology. The purpose of this paper is to reconsider Bateson's theory of learning and organizational triple-loop learning in light of this recent empirical evidence.

Design/methodology/approach – This paper uses a multi-disciplinary conceptual approach. Based on an integrative analysis of literature from recent work in personality psychology, four dimensions (process, content, time and context) are identified that allow linking personality change and triple-loop learning.

Findings – Identifying a bottom-up process of changing states, habits and traits as being central to change personality, allows for reconsidering Bateson's theory of learning as a theory of personality development (*Learning II*) and personality change (*Learning III*). Functionally equivalent, organizational triple-loop learning is conceptualized as a change in an organization's identity over time that may be facilitated through a change in responding to events and a change in the organization's routines.

Practical implications – Interventions that change how organizations respond to events and that change the routines within an organization may be suitable to facilitate triple-loop learning in terms of changing organizational identity over time.

Originality/value – This paper contributes to the discussion on Bateson's theory of learning and organizational triple-loop learning. As interest in personality change grows in organization studies, this paper aims to transfer these findings to organizational learning.

Keywords Bateson, Triple-loop learning, Organizational learning, *Learning III*, Levels of learning, Personality change

Paper type Conceptual paper

Introduction

For Gregory Bateson (1972, pp. 300-303), *Learning III* – “a profound reorganization of character” or a “profound redefinition of the self” – happens rarely. However, its occurrences are regularly observed in psychotherapies, religious conversions, gender transformations or recovery from alcoholism (Dunlop and Tracy, 2013; Visser, 2003, p. 276) and keep on fascinating scholars from various disciplines, including psychology, anthropology,

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educational sciences and organizational learning. Bateson's concept fuelled its organizational equivalent, i.e. triple-loop learning, which is crucial for organizational domains, such as innovation (Peschl, 2007), diversity management (Kwon and Nicolaidis, 2017; Flood and Romm, 1996), emancipation and power in organizations (Flood and Romm, 2018a, 2018b) and project management (Marcandella and Guève, 2018; Ameli and Kayes, 2011). Triple-loop learning is often described as a change of the "underlying purposes, principles or paradigms" (Tosey *et al.*, 2012, p. 294) of an organization, which lacks sufficient theoretical roots and empirical support. Consequently, our theoretical understanding of what triple-loop learning constitutes and how it may be facilitated is limited. While it seems to be inspired by Argyris and Schön's (1978) notion of single- and double-loop learning, it has more obvious ties to Bateson's (1972) *Learning III* (Tosey *et al.*, 2012). We assume that deepening our understanding of Bateson's theory is beneficial to operationalize triple-loop learning.

The subject of Bateson's *Learning III* – the change of the self – is central to personality psychology. We currently witness a shift in the predominant paradigm in this field. Traditional personality theories emphasize that an individual's personality remains stable for several decades and neglect the possibility for the personality to change. However, recent empirical evidence demonstrates that personality is neither stable nor fixed (Costa and McCrae, 1992; McCrae and Costa, 2006), but rather develops and changes throughout the life-span (Tasselli *et al.*, 2018; Caspi *et al.*, 2005; Roberts *et al.*, 2006a). Admitting that personality psychology and Bateson's theory of learning deal with a common phenomenon (i.e. personality), what implications does new empirical evidence from personality psychology has for Bateson's learning theory and what conclusions for organizational triple-loop learning can we draw? To illuminate Bateson's theory of learning and research on triple-loop learning in the light of these recent findings, a problematization approach (Alvesson and Sandberg, 2014) across disciplines is applied to the following research question:

RQ. How can recent findings from personality psychology, indicating the possibility for the personality to change, enrich our understanding of Bateson's theory of learning and help to operationalize triple-loop learning?

We argue that the "self" or "character" as described by Bateson (1972) corresponds with the concept of personality found in psychological research (VandenBos, 2015, p. 175). In an integrative literature review (Torraco, 2005) in personality psychology journals, we extract fundamental concepts to coherently describe what constitutes personality change. Moreover, they allow for establishing a common ground or language between Bateson's theory of learning and recent findings of personality psychology. As we will argue, both concepts can be compared and synthesized along four dimensions: process, time, the content of change and the context.

We argue for a functional equivalence between individuals and organizations with respect to the "self" of an individual and the "core" of an organization. Adopting this perspective allows us to "invoke the principle of functional equivalence as grounds for proposing conceptions of identity anchored in the identity requirements of social actors – individuals and organizations alike" (Whetten and Mackey, 2002, p. 395). Wimsatt (2002, p. 179) states that "two objects are functionally equivalent (or analogous) if they do the same (or similar) things in the same (or similar) systems in the same (or similar) environments, etc. The key is the emphasis on the word 'do'. No other features of the objects are relevant other than the fact that they do the same thing under certain conditions – which is to say that it is their behavior that is important".

Theoretical background

Bateson's "logical categories of learning and communication" – preceded by Whitehead's and Russell's (1963) theory of logical types – play a major role for the organizational learning discourse, especially for higher levels of learning (Visser *et al.*, 2018). As a "grand theory", it comprehensively connects learning science, psychology and systems science to the benefit of the field of organizational learning (Tosey and Mathison, 2008; Kwon and Nicolaidis, 2017; Tosey *et al.*, 2012) and is fundamental for theorizing on triple-loop learning (Romme and van Witteloostuijn, 1999; Peschl, 2007; Swieringa and Wierdsma, 1992; McClory *et al.*, 2017; Nielsen, 1993; Reynolds, 2014; Kwon and Nicolaidis, 2017; Ameli and Kayes, 2011; Flood and Romm, 1996; Yuthas *et al.*, 2004; Isaacs, 1993; Simonin, 2017).

In analogy to Bateson (1972), organizational learning can be broadly defined as a "process of change in thought and action – both individual and shared – embedded in and affected by the institutions of the organization" (Vera and Crossan, 2004, p. 224), which implies a change of routines, structures, rules and artefacts (Levitt and March, 1988; March and Simon, 1958). More specifically, Argyris and Schön (1978) were the first to outline different levels of organizational learning. The first level, single-loop learning "occurs when a mismatch is detected and corrected without changing the underlying values and status quo that govern the behaviors [...] single-loop learning remains within the accepted routines" (Argyris, 2003, pp. 1178-1179). The second level, double-loop learning "occurs when a mismatch is detected and corrected by first changing the underlying values and other features of the status quo [...] that new routines be created that were based on a different conception of the universe" (Argyris, 2003, pp. 1178-1179).

Deutero-learning, i.e. "how to carry out single- and double-loop learning" (Argyris and Schön, 1978, p. 26), is further described by "going meta on single or double-loop learning". (Argyris, 2003, p. 1179). While Bateson's influence was acknowledged in their previous work (Argyris and Schön, 1978), later works see cybernetic theory (Ashby, 1956) as foundational for their theory of learning. Although, Argyris and Schön (1978) never used the expression "triple-loop learning" explicitly, several subsequent authors claim that their concepts of triple-loop learning are inspired by them (Tosey *et al.*, 2012). This resulted in conceptual confusion and an "organizational learning jungle" (Huysman, 2000).

To clarify this confusion, Tosey *et al.* (2012) trace three origins of the concept of triple-loop learning: First, triple-loop learning is conceptualized as beyond double-loop learning (Argyris and Schön, 1978), "metaphorically at a 'higher' or 'deeper' level than, primary and secondary forms of learning, [...] the metaphor implying that this level has greater significance and profundity" (Tosey *et al.*, 2012, p. 292). However, Tosey *et al.* (2012) and Schön (1990) question whether such a change exists, as double-loop learning already accounts for a change in the governing variables of an organization. Second, triple-loop learning is conceptualized as being similar to deutero-learning; in other words "going meta" or reflecting on single- and double-loop learning (Argyris, 2003, p. 1179). Third, triple-loop learning is closely related to Bateson's *Learning III*: it is "a profound reorganization of character" or a "profound redefinition of the self" (Bateson, 1972, pp. 300-303) that touches an existential dimension (Peschl, 2007). In this paper, we focus on the last-mentioned origin of triple-loop learning; by illuminating its relation to Bateson's *Learning III* and personality psychology.

Method

This paper draws from the triangulation of Bateson's theory of learning, personality psychology (individual domain) and triple-loop learning (organizational domain). The recent alteration of a predominant paradigm in personality psychology has a strong impact on this triangulation. To reflect on its implications for individual and organizational learning, we

conducted a literature review on personality change, covering English written articles that are published in peer-reviewed journals on personality psychology. We conducted the literature review on February 8, 2018 in the database [scopus.com](https://www.scopus.com). The sample covered the years from 2005 to 2018, as the watershed paper “Personality development: stability and change” appeared in Annual Review of Psychology in 2005 and introduced the concept of personality change to a wider audience (Caspi *et al.*, 2005). We searched for the terms “personality change”, “change of personality”, “personality trait change”, “long-term personality development”, “volitional personality change” and “intentional personality change” in title, abstract or keywords in the following journals: *Journal of Personality and Social Psychology*, *Journal of Personality*, *Journal of Research in Personality*, *European Journal of Personality*, *Developmental Psychology*, *Personality and Individual Differences*, *Psychological Bulletin*, *Personality and Social Psychology Bulletin*, *Personality and Social Psychology Review*, *European Journal of Personality*, *Annual Review of Psychology* and *Journal of Psychotherapy Integration*. The search elicited 111 results.

In the first iteration, we went through title, keywords and abstracts of these articles. For further analysis, we only included articles that describe the process or structure of personality change or outline interventions and antecedents to intentionally facilitate personality change. We considered 39 articles for further analysis. By using forward and backward citation search of relevant theoretical work (Roberts *et al.*, 2017; Roberts *et al.*, 2006a), we added two articles (Baumert *et al.*, 2017; Tasselli *et al.*, 2018) to the literature sample. Due to space restrictions, we only refer to 18 works of the literature sample in the paper. However, we are confident that explicitly referring to the others would not significantly alter our conclusions. After identifying the body of relevant literature, we conducted a problem-based content analysis (Krippendorff, 2009, p. 340) to elicit fundamental concepts that describe personality change and may inform Bateson’s theory of learning and triple-loop learning.

Results

Introducing a bottom-up model of personality stability and change

Personality psychology literature suggests that the development of personality (toward personality stability or personality change) happens through bottom-up processes. For example, a repeated change of behavior in very specific situations or states [defined as the degree of coherent behaviors, thoughts and feelings at a particular time (Baumert *et al.*, 2017, p. 528)] may translate into a change in habits and traits over automatic and deliberate processes (Wrzus and Roberts, 2017). The repeated incoherent enaction of behavior in certain states may translate into a change in habits and to long-term personality development (i.e. trait change) through a bottom-up process. On the one hand, reflective processes translate states into explicit personality characteristics. This happens through processes such as self-reflection (Caspi and Roberts, 2001), accommodation, assimilation (Brandtstädter, 1989), life reflection (Staudinger, 2001), self-narration (Hooker and McAdams, 2003), the development of a narrative identity (Adler, 2012; Lodi-Smith *et al.*, 2009) or narrating autobiographical memories (McAdams *et al.*, 2006). On the other hand, associative processes, such as habit formation (Wood and Rüniger, 2016; Wood *et al.*, 2002) or reinforcement learning (Caspi and Roberts, 2001), translate states into implicit personality characteristics. These processes link short-term situation specific sequences of enacted behavior to the long-term development of personality characteristics. In other words, experiences and behaviors in specific situations constitute the building block of long-term personality change. Repeated experiences and behaviors in states of daily life change a personality trait over time if experiences and behaviors in these state differ from experiences

and behaviors that are coherent with the trait. Otherwise, the personality develops toward stability (Wrzus and Roberts, 2017, p. 257).

Introducing four dimensions to link personality psychology to Bateson's levels of learning and the organizational domain

Based on the literature review, we identified four dimensions that establish a common ground between the three bodies of literature, i.e. personality psychology, Bateson's theory of learning and triple-loop learning, that help to relate respective concepts:

Process. Bateson (1972) argues that learning reflects a process of change. In the same vein, personality psychology defines a process as a "series of steps (elements, components and actions) through which some phenomenon takes place or emerges" (Baumert *et al.*, 2017, p. 527).

Time. As a process "makes reference to a passage of time and implies changes or development during the referenced period" (Baumert *et al.*, 2017, p. 527), time is crucial for linking theories of learning and personality change. We distinguish short-term (seconds to hours), medium-term (weeks to months) and long-term (years and decades) development (Gerstorff *et al.*, 2014).

Content. In addition to the shape of learning and its unfolding over time, there is something that gets learned or changed. Learning may result in a change of experience (Kolb, 1984), behavior (Pavlov, 2010; Skinner, 1992), cognition (Bloom *et al.*, 1956; Tolman, 1948) or, as we stress, personality (Bateson, 1972). The content reflects the 'what' of learning and personality change.

Context. Both learning theories and personality psychology account for the environment in which change takes place. The context changes the course of learning (Johns, 2006).

Linking personality change to Bateson's levels of learning and organizational learning

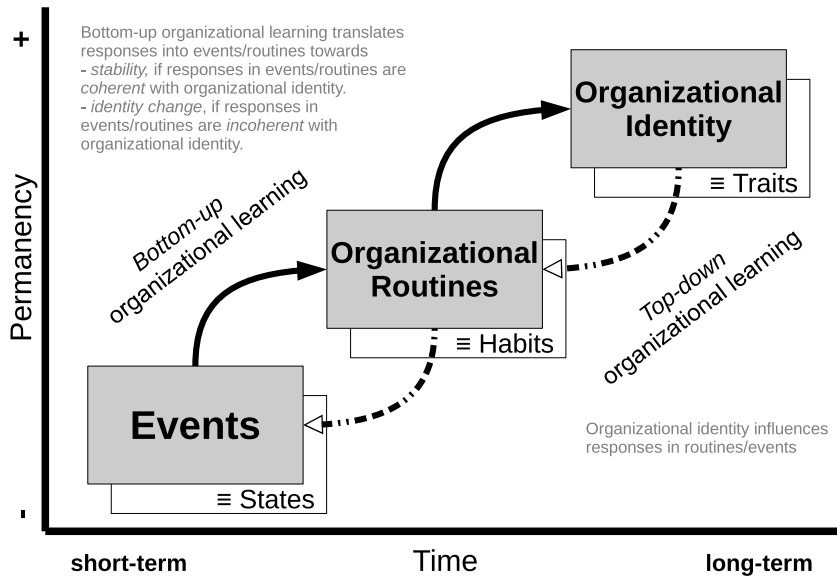
Based on these four dimensions, we synthesize Bateson's levels of learning with recently altered concepts of personality psychology and reconsider Bateson's theory. Drawing on theory-borrowing (Whetten *et al.*, 2009), we discuss functional equivalents for the organizational domain (Figure 1).

Level 0. Learning 0 describes a change in the specificity of response (Bateson, 1972); a learned behavior is slightly adapted to the specific situation. For example, when playing tennis, the tennis racket is moved according to the demands of the flying ball. Here, the reaction is specified, but no completely new behavior is learned. Within *Learning 0*, an "entity shows minimal change in response to a repeated item of sensory stimulus" (Charlton, 2008, p. 53).

The corresponding content of change in personality psychology can be described by state processes, which are "transient, short-term, within-person changes and include constructs such as emotions, moods, hunger, fatigue and anxiousness [...] lability is the defining quality of a state" (Hooker and McAdams, 2003, p. 299). States are momentary, varying, situation-specific, most changeable and responsive to the environment. A minimal change which occurs in *Learning 0* is arguably equivalent to a change of states. Thus, the time-scale of states is short-term and occurs within minutes or hours (Gerstorff *et al.*, 2014).

States are elicited in specific, highly context depending situations. For example, a spectator in a theatre who feels anxiety may respond differently to a killing on stage than a person who sees the same scene on a street. This is how *Learning 0* is linked to states in the personality psychology literature. We see an event in the organizational domain as functionally equivalent to a state in the individual domain. An event is anything that requires an action or response from the organization, such as the income of a customer message or the arrival of equipment on a construction site (Dumas *et al.*, 2013). Similar to the

Figure 1. Proposed models of personality development in the individual domain, and triple-loop learning in the organizational domain



individual domain, an organization's reoccurring response to events may translate into a higher-order concept, such as an organizational routine.

Level 1. Learning I means learning a new behavior (Bateson, 1972) and is about acquiring the behavioral responses adapted in *Learning 0*, often described as "changes in *Learning 0*". For *Learning I*, Bateson only uses examples from the animal kingdom. It includes classical conditioning (Pavlov, 2010) or rote learning (Marton and Säljö, 1976), and means responding to the same signal differently in different contexts. In other words, *Learning I* describes the learning of new behavior in the same context and the learning of another behavior in another context. This assumes that the context of learning is repeatable.

The corresponding content of change may be described as habits in personality psychology. Habits are learned and automated routine actions that occur (automatically) based on a cue in the environment. Habits are developed by instrumental learning (Wood and Rüniger, 2016, p. 294) and its premise that rewarded responses are repeated (Thorndike, 1898). As such, acquiring habits and *Learning I* describe short to medium-term processes and "depend on recurring contexts and form [...] by repeating the same responses in a given context" (Wood and Rüniger, 2016, p. 289).

We suppose routines in the organizational domain as functionally equivalent to habits in the individual domain (Becker, 2004; Nelson and Winter, 1982; Feldman and Pentland, 2003; March and Simon, 1958; Pentland et al., 2012). Organizational routines are the most micro-foundational building block of behavior relevant to organizational theory (Becker, 2004). They can be defined as "repetitive, recognizable patterns of interdependent action, carried out by multiple actors" (Pentland and Hærem, 2015, p. 465).

Level 2. Learning II or "learning to learn" describes the gradual development of a personality, i.e. the underlying assumptions that are characteristic for the organism (Bateson, 1972, p. 297). In other words, the „development and adoption of a character in humans and higher organisms is the product of *Learning II*" (Charlton, 2008, p. 57). Bateson sees the character as being developed in *Learning II* (i.e. growing up and becoming an adult)

and difficult to change, as it can be seen as a lens through which we make sense of the world. Bateson (1972, p. 297) describes the character with adjectives such as “anxious, narcissistic, passive, competitive and perfectionist,” which can be interpreted as descriptions of personality traits. Within the “big five model of personality” (Costa and McCrae, 1992; McCrae and Costa, 2006), the adjective *anxious* corresponds to the trait of neuroticism and *perfectionist* corresponds to the trait of conscientiousness. In this regard, we interpret Bateson’s *Learning II* as the development of the personality.

The corresponding content of change is described by the development of personality traits throughout childhood and adolescence. *Learning II* and the development of personality traits are medium- to long-term processes that can be traced on a time scale ranging from several months to years. Personality traits seem to be stable over several contexts and, thus, may be the outcome of *Learning II* (e.g. a person is contentious in the job, school, in the relation to friends and family).

Processes which are responsible for the development and stability of the personality include the maturity principle, which states that the personality develops toward greater maturity and regulatory resiliency during adolescence and emerging adulthood (Wrzus and Roberts, 2017). These processes also include the social investment principle, which holds that individuals invest in new social roles, such as being parents, spouses or employees (Lodi-Smith and Roberts, 2007) and the niche picking principle, which says that individuals choose self-selected experiences that help to stabilize personality over time (Wrzus and Roberts, 2017). In general, personality change may happen through increasing maturity, changes in personal and social roles, critical life events (Bleidorn *et al.*, 2018), extensive traveling and experiences abroad (Zimmermann and Neyer, 2013) or interventions such as psychotherapy (Roberts *et al.*, 2017).

We regard the development of an organization’s identity as functionally equivalent to the development of an individual’s personality (Whetten and Mackey, 2002). The similarity of seminal definitions of personality and organizational identity reinforce this functional equivalence. Both definitions assume a “core-ness” of each concept; personality being the relatively stable and unchangeable core of an individual (McCrae and Costa, 2006), organizational identity being the relatively central, enduring and distinctive core of an organization (Albert and Whetten, 1985) that gives an answer to “who we are as an organization?” (Gioia *et al.*, 2013, p. 123). The development of organizational identity, often coined organizational formation processes, describes that over time and across multitudes of interdependent co-actions. Intersubjective meanings of “who we are” become reified and taken-for-granted (Gioia *et al.*, 2013, p. 157). They become “encoded in the goals, routines, information flows, etc” (Ashforth *et al.*, 2011, p. 1146).

Level 3. Learning III describes a “profound redefinition of the self” (Bateson, 1972, pp. 300-303). Metaphorically speaking, it is a change of our lens through which we see ourselves and the world. Bateson states that “something of the sort does, from time to time, occur in psychotherapy, religious conversion and in other sequences in which there is profound reorganization of character” (Bateson, 1972, p. 272) and he goes on stating that “this level of performance of some men and some mammals is sometimes pathogenic”. *Learning III* puts the “unexamined character forming premises of *Learning II* to question and change” (Charlton, 2008, p. 58). Bateson considers *Learning III* as difficult to achieve and rare event because one needs to break out of a self-referential process. Visser (2003, p. 276) remarks that this change occurs at the “unconscious levels and only afterwards is given a rationale”. Even though Bateson consistently uses the term *learning*, Bredo (1989) points out that *Learning III* may be considered as a long-term development (Gerstorf *et al.*, 2014).

The corresponding content of change is a change of personality traits through a bottom-up change of states and habits, as discussed in the personality psychology literature (Allemand and Flückiger, 2017; Wrzus and Roberts, 2017). Already developed traits are enduring patterns, which are cross-situational consistent and are seen as least changeable and responsive (Allemand and Flückiger, 2017). Personality change refers to “change in the individual’s characteristic pattern of thought, emotion or behavior and a change to the mechanisms behind these patterns” (Tasselli *et al.*, 2018, p. 8). Changing traits, and thus, *Learning III* can be seen as a long-term process in which a change of personality traits affects several contexts (e.g. a person who manages to become more extraverted will do so in several contexts, such as job, family or academic roles). This implies that *Learning III* may happen through a bottom-up change of behavior in *Learning 0* and *Learning I* and habits in *Learning II*.

We regard organizational identity change, defined as any modification in purpose or/and philosophy of an organization (Gioia *et al.*, 2013, p. 145), as functionally equivalent to personality change in the individual domain. Interestingly, both personality and organizational identity were first conceptualized as relatively stable and enduring (Albert and Whetten, 1985), while more recent accounts of personality (Caspi *et al.*, 2005; Roberts *et al.*, 2006b) and organizational identity (Gioia *et al.*, 2000; Kreiner *et al.*, 2015) point out the adaptive instability of each concept. Here, we see a parallel in the academic discussion in both concepts (Tasselli *et al.*, 2018, p. 468). Considering the mechanisms of change, we stress that not-changing organizational routines can lead to inertia when attempting to change the identity of an organization:

organizational practices can also be a source of inertia [...], even when organizations pursue strategic change by announcing and acknowledging a shift in identity, the change may not materialize unless there are attempts to examine and revise routines and organizational practices (Gioia *et al.*, 2013, p. 137).

Organizational identity is seen as something “deeply embedded in the social practices of everyday working life” (Nag *et al.*, 2007). An illustrative example of the dangers of organizational identity change is given by Kreiner *et al.* (2015). In a longitudinal study, they describe the dialectic tensions between liberal and conservative forces in an American church after a person was appointed as a bishop, whose sexual orientation was not in line with the prevailing organizational identity. This example does not only shed light on the potential existential danger of organizational identity change but also shows how identity is negotiated within an organization.

Implications for theory and practice

Our results support the assumption of continuous development and change in the individual (Roberts *et al.*, 2006b) and the organizational domain (Tsoukas and Chia, 2002; Dionysiou and Tsoukas, 2013). This also applies to concepts that were described as stable and enduring in the past, such as personality (McCrae and Costa, 2006) or organizational identity (Albert and Whetten, 1985). From this, what implications can we derive for theory and practice, considering both the individual and the organizational domain?

In the individual domain, several theoretical implications can be pointed out. First, contrary to Bateson (1972, pp. 300-303) arguing “*Learning III* is rare, even in human beings”, bottom-up changes in situations and habits constitute *Learning III* in the long-run. Based on a wealth of new data from longitudinal studies (Roberts *et al.*, 2006a; Roberts *et al.*, 2017) that were not available to Bateson (1972), we argue that *Learning III* continuously happens in individuals, either gradually or suddenly. Second, we can reconsider Bateson’s theory of

learning as a multi-level theory spanning a person's behavioral, habitual and the personality facets. Third, although [Watzlawick *et al.* \(1967, p. 22\)](#) point out that Bateson's theory of learning is:

[...] conceptually closer to mathematics than to traditional psychology, [with its] strong trend toward a monadic view of humans and toward a reification of what now reveal themselves more and more as complex patterns of relationship and interaction.

We demonstrated that the theory is in accordance with contemporary personality psychology. The latter deals with relational (e.g. environmental factors that provide constraints to experiences; model learning when watching others behaviors and expressions) and behavioral (e.g. habit formation or the implicit learning or repeated behavior; feedback or receiving information from others on one's behavior, thought and feelings) processes that translate behavior in specific situations toward personality development and change ([Wrzus and Roberts, 2017, p. 260](#)). As a consequence, recent personality psychology research reinforces Bateson's view that personality development and change emerge from their constituting relational and behavioral underpinnings.

Likewise, our findings have several implications for the organizational domain. Synthesizing the three bodies of literature, i.e. personality psychology, Bateson's theory of learning and triple-loop learning, reinforces the bottom-up learning argument: departing from changing the fundamentals of organizational identity as responding to events and changing organizational routines. Organizational identity is then formed by a configuration of organizational routines, allowing the organization to deal with specific events that require a response. Functionally equivalent to personality change, a change of organizational identity may be achieved by a change of its constituting elements, i.e. a change in responding to events, and a change in organizational routines ([Figure 1](#)).

How can this translate into organizational practice? Based on the theoretical insights, practitioners should be aware that repeatedly acting contrary to the prevailing identity of an organization, in terms of responding to events and, as a consequence, establishing new routines, may change the identity of that organization. On the other hand, repeatedly acting in line with the prevailing organizational identity, in terms of responding to events, and thus, keep organizational routines stable, may result in a stable development of an organization's identity.

If practitioners aim at changing an organization, they may pursue a bottom-up approach. Such an approach provides practitioners with several leverage points for change, such as hiring people that support the anticipated identity change or introducing new ways of working together. We may illustrate the latter by an example given by [Annosi *et al.* \(2017\)](#): consider a company, that develops software using a rather common "waterfall-approach" ([Neill and Laplante, 2003, p. 42](#)), which mirrors the organization's dominant identity as "we program rock-solid software by diligently planning our activities". The intentional bottom-up change of this organization's identity toward a more organic identity may be facilitated by introducing "Scrum", an agile and highly iterative software development approach ([Nonaka and Takeuchi, 1995](#)). As a consequence, the organization responds in a different manner to plenty of day-to-day events related to software programming. The scrum framework scaffolds software programming in a rather iterative manner and introduces several new roles (e.g. product owner, scrum, master or the development team) in the company. If the scrum framework is steadily enacted within the organization, it affects how people work together and creates certain organizational routines ([Dixon, 2017](#)). Over time, it may subsequently change the identity of an organization, away from diligently planning activities toward a more organic identity in which people put more emphasis on failure,

experimentation and iterative processes (Annosi *et al.*, 2017). However, practitioners have to keep in mind that the change of an organization's identity is not linear and may have severe and unintended consequences for the organization (Kreiner *et al.*, 2015).

Concluding remarks and further research

This paper revisits Bateson's theory of learning in the light of a recent change of the predominant paradigm in personality psychology. Establishing a robust conceptual relation between these bodies of literature allows for reconsidering triple-loop learning as a bottom-up changing organizational identity. Consequently, further research may advance these findings in three directions. First, we need to translate interventions from the individual domain (e.g. coaching, psychotherapy) to the organizational domain to inform organizational practice. Second, we need to operationalize triple-loop learning in terms of changing organizational identity. Third, we need to deepen our understanding by collecting dense empirical evidence, which could be gathered in case studies.

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Corresponding author

Florian Fahrenbach can be contacted at: florian.fahrenbach@wu.ac.at

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