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Educational Implications That Arise From Differing Models of Human Development and Their Repercussions on Social Innovation

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Social innovation aims for creating social value primarily while it recognizes that not all technology-based progress amounts to social progress. We think that this calls for a paradigm shift in how we understand education. No one doubts that education requires intense cognitive effort, but educational proposals certainly vary depending on how cognition is understood. In this article, we suggest that different ways of understanding human development are related to different ways of understanding cognition. Thus, these different conceptions of human development affect their resulting educational proposal. While not an exhaustive account, we sketch out three models of human development, the so-called autonomous self (AS), processual self (PS), and inter-processual self (IPS). Each has different implications for education depending on their particular understanding of cognition. The AS and PS models understand cognition as a primarily rational mastery exercise, with the difference that PS uses relationships and diverse psychological faculties for the subject's cognitive development, whereas AS relies more on the subject's rational agency. On the other hand, IPS understands cognition as a relational act that, when it arises from interiority, affects all dimensions of the person. In the present article, we explore the educational consequences of these different ways of understanding cognition with the assistance of interdisciplinary dialogue from philosophy, psychology, and neuroscience, and their repercussion on social innovation with the intention of opening up reflection in the field of education and of inspiring its practitioners to rethink the model they assume. We will conclude with reflections informing educational implications for the design of programs and teacher training itself.

Keywords: cognition, human development, educational models, inter-processual self, innovation

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INTRODUCTION

The concept of "social innovation" has primarily emerged from humanities and social sciences scholars rather than from literature and debates on innovation within economics; consequentially, not all innovation theory scholars from economics agree that it captures a conceptual aspect that differs from (any other sort of) innovation (Pol and Ville, 2009). However, theorists from social economics and from the social sciences and humanities suggest that it is a distinct concept and

captures important pro-social motivations toward offering social value and growth (Pol and Ville, 2009)[1].

Existing definitions coincide in that they stress that, insofar as innovation is conducive to enhancing human welfare, it is social and distinct from other forms thereof (Pol and Ville, 2009). Hence, social innovation *intends to* innovate such that social needs are met (Moulaert et al., 2005, p. 1976). Historically, social innovation arose from the fact that technological innovation through competition does not guarantee social development and can even be counterproductive to it (Meadows, 1972). Of note, society is here understood as an agent, not as a sum of individuals and education is recognized as one of social innovation's most important fields of action (Moulaert et al., 2005, p. 1970).

We argue that the concept of social innovation can aid our understanding of education. By starting with an educational model focused on competition, we reproduce errors that necessitated social innovation in the first place. In the same way that technological development does not in itself imply truly sustainable improvement of society, teaching to skills does not in itself mean developing an education in the service of society. Education studies have indicated that solely focusing on the development of skills can be counterproductive (Delors et al., 1996, pp. 16–18). In this sense, the concerns found in the literature on social innovation coincide with those of Delors, whose goal for education is learning to live together. The latter focus may even feed into social inequalities.

We need another way of understanding education since innovation in education cannot merely focus on increasing efficiency and effectiveness when it comes to skill acquisition. For that, we must employ a social understanding of education from the very beginning. This article thus proposes a social model of human development called the "inter-processual self" (Akrivou et al., 2018) and applies it to education "centered on the interpersonal relationship" (Orón Semper and Blasco, 2018). It further provides an adequate conceptual framework for education in service of social innovation, suggesting that education that does not have a social foundation will not successfully integrate social aspects later.

Since social innovation is highly interdisciplinary (Mulgan, 2012) and this issue focuses on education, we have reviewed the basics of cognition and human development as they relate to education in dialogue with philosophy, psychology, and neuroscience. Thus, we arrive at an educational model that is coherent with social innovation.

Every educational proposal is based on various theoretical assumptions, which naturally come from other disciplines that serve as the source for a conceptual framework. In particular, the natural sources for education are psychology and philosophy because one's view of the person and her development structures the resulting educational proposal. Obviously, this does not resolve the work of education; rather, as an autonomous discipline, it has its own field of study. A new source of influence on the field of education materialized with neuroscientific developments at the beginning of the twenty first century, providing a contrast to verify if certain pedagogical dispositions are congruent or not with neuroscientific discoveries. In the present article, we go into a theoretical discussion centered on the person and her development. To do this, we put philosophy, psychology, and neuroscience in dialogue with the intention of opening up reflection in the field of education and of inspiring its practitioners to rethink the model they assume.

Since organizational education has been well-defined as a field of study (Göhlich et al., 2018), it has been acknowledged that educational such as the school and the university (and broader organizations), in order to learn and to influence learning in society, must be protagonists within the wider learning context through cooperative practices at micro, meso, and macro levels. Hence, a main research concern in organizational education is ways in which learning in (educational) organizations can be understood and explored. Within this context, there is an interesting stream of research in organizational education that aims to share data and build theory on how best social value, learning, and innovation ensue from educational programs that develop relations and networks of exchange within their wider community as a distinct strategy for social innovation (for example, Grogan and Fahrenwald, 2019 in Weber et al., 2019).

In previous research (Akrivou and Orón, 2016; Akrivou et al., 2018), we have identified two major competitive lines in human development today, the so-called Autonomous Self (AS) and the Inter-processual Self (IPS); now, we intend to show their influence on education. Our aim is to contribute on the organizational education stream of work concerned with how to elevate educational relations to positively influence learning and growth involving wider forms of community and "polis" (the superordinate socio-political organizations wherein schools and educational institutions are situated). The focus of our contribution is to share new theory on these contrasting educational paradigms (AS and PS—which is a sub-category of AS—vs. IPS), which allows us to reflect on how their conflicting or incommensurable anthropological approaches ("mindsets") regarding the self and action involving relations are understood, and to derive educational implications to be utilized in the context of designing different learning interventions and informing teacher training too.

Our published work introducing these incommensurable paradigms of self and action has been inspired by the neo-Aristotelian Spanish philosopher Polo (2012, p. 281), who synthesized the key ontological concerns in the history of philosophy regarding being human and proposed the following three main fundamental roots that inform what is involved in being human throughout different philosophical and historical systems of thought: (1) A rootedness in "nature," which captures the classical philosophy and Aristotle's basic proposal (that we are constituted by our shared and distinct biological, cultural, and

Abbreviations: AS, Autonomous Self; PS, Processual Self; IPS, Inter-Processual Self.

[1]While it goes beyond the scope of this article, it is worth mentioning that, within the scholarly debate on definitions of social innovation, many authors focus on new idea generation that, according to Heiskala (2007), constitute "social innovation" insofar as they bring about "change in at least one of … three social structures: cultural, normative and regulative." Pol and Ville (2009) have criticized this definition as too broad. Upon reviewing the literature, they believe that social innovation exists if the novel idea(s) involved can potentially improve quality or quantity of life.

traditional sources); (2) the rootedness in the modern "subject-agent" fundamental, which expresses modernity's emphasis on the human drive to create novelty and to succeed in its mastery over the wider human and non-human environment via rationalistic agency, with a focus on results; and (3) the predicament involved in the fundamental of "personhood" (or Christian fundamental root of human civilization); this latter emphasizes personal singularity and uniqueness as well as that at the heart of being and growing as a human being. Accordingly, we characterize the AS paradigm on the self and action as the mindset that comprises the different modern and post-modern proposals on the self and action. This model (AS) conceives human growth as a result of individual productive activity aiming to dominate and "master" the environment as a focal object, according to the wishes of the actors-subjects. The PS model is presented as a variation or maturation of the AS model because it gives value to relationships; however, in this mindset, relation is understood in a rather instrumental fashion, i.e., a relation with another person or a community or a network is seen as a focal object and just like in AS the aim is to master the object according to the wishes of the actors-subjects.

Conversely, we suggested that IPS is an integrative mindset, uniting Polo's "personhood" with the classical root of "nature" and the modern approach of the "subject-agent." Who we are and how action is understood from within IPS involve an ontology of relation from the very constitution of our being. Accordingly, in IPS, growth is not understood as success via mastery, but it is understood as the "intensification of the relationships that constitute the human person in what she fundamentally is."

Depending on which of these two corresponding paradigms—AS/PS or IPS—is taken as a point of departure to characterize the person, there will be different ways of understanding cognition and education (Akrivou et al., 2016).

This classification can be enriched thanks to the current neuroscientific debate, led by Kahneman (2011), who presents two brain systems that are related to various psychological processes: system 1—also called rapid system—which results on a more emotional character, and system 2—also called slow system—which is more cognitive. He maintained that many human mistakes are a result of system 1 being decisive in decision-making, whereas more accurate answers are given when decisions are made from system 2. From this, we hypothesize that the AS model corresponds to a person acting according to system 2, the PS as a synthesis of models 1 and 2; and the IPS does not enter into this way of understanding decision-making (and its related way of approaching cognition) but rather in a different form of understanding the most dynamic and systemic cerebral operation that does not admit this association of cerebral modules to psychological processes. As a result, the PS is presented as a superior stage to the AS—an integration of systems 2 and 1, but IPS does not respond to this classification.

We suggest that new research introducing the IPS (Akrivou and Orón, 2016; Akrivou et al., 2018) critically argues that *who/what we really are* as humans involves being and growing as an integrated person, which requires integrating the three aforementioned fundamentals that are cross-culturally important for understanding the self, human action, and meaning, in other words, human nature, each personal and singular reality, and the capacity to produce new realities. The IPS proposal is related to another way of understanding the brain and mental functioning that pressuposes a systemic and dynamic approach (Kelso, 1995; Sporns, 2011, 2014; Pessoa, 2013; Anderson, 2014). According to this systemic and dynamic view, by synchronic processes, the whole brain is unified in each mental action, and the modular vision that relates brain modules with psychological functions has already been put in relation with the different ways of understanding emotional education (Orón et al., 2016). This opens a wider hypothesis that relates the three models of self-development (AS, PS, and IPS) with different neuropsychological models (dynamic and modular). This relationship between different understandings of the self and neuropsychological models will strengthen the conceptualization offered, allowing us to better conceptualize the different ways of understanding cognition and its subsequent application to pedagogical reflection, and social innovation.

In this article, we will proceed as follows: first we will introduce the AS, PS, and IPS models in relation to our topic. Then, we will relate these contrasting paradigms to different proposals that arise from research in neuropsychology and then we shall relate these to inform and reflect on how each influences how networks and educational relations with wider social communities may be understood.

THE MODERN PERSPECTIVE UNDERLYING THE AS AND PS MINDSET

The two contrasting proposals regarding the "mindset" assumptions on the self and action that characterize the AS/PS proposal and the IPS naturally express two distinct conceptualizations regarding action with moral maturity and how the self relates to others in any action. The AS and the effort to overcome AS's limitation through a transition to a PS capture a modernist approach relating human cognition and congruent action with maturity. The difference between AS and PS lies mainly in their view of cognition, which once explained will also allow us to understand why IPS is a revolutionary approach.

Behind the AS and PS cognition is the idea that cognition (mental models) drives action, which is also influenced by the individual-context interaction (Blasi, 1980, 1983; Trevino, 1986; Jones, 1991; Aquino and Reed, 2002). For example in descriptive individual factors that drive persons to act ethically in the face of various ethical and performance challenges, the main assumption is that the stronger a person's cognitive capacity regarding the domains of moral awareness and meaning making (Aquino and Reed, 2002), the higher the individual's capacity to act effectively facing moral dilemmas in the real world (for example, in Kohlberg, 1969 and in Murphy and Gilligan, 1980). So action (in this case, ethical action is seen as a domain of individual behavior) is understood as driven by individual cognitive growth that is rooted in the Piagetian human development stage hypothesis (Piaget, 1962).

This assumption shapes the understanding of wider human development theory regarding action with maturity in broader

life domains; hence, different models have been proposed on the same assumptions that understand individual action with maturity facing intellectual and social challenges in the world under a uni-linear stage hypothesis, for example, different post-Piagetian stage theories of human development (such as Harvey et al., 1961; Flavell, 1963; Loevinger, 1966, 1976; Perry, 1970; Kegan, 1982, 1994; Lahey Laskow, 1986). Such theories share a common biologically based assumption rooted in Werner's (1948) orthogenic principle (Johnson, 2000), which suggests that action under the human developmental "modern" paradigm is an idealized upwards progression movement following a notion of stages when temporarily equilibrium has been reached; this is marked by an increasing degree of cognitive complexity. So, equilibria are expressed in terms of specific cognitive stages. Each hypothesized equilibrium motivating cycle of action is fueled by a certain quality and dynamics of cognitive (and moral) maturity (Akrivou, 2008). Increases in cognitive complexity are thought to enable motivational mechanisms in the self to synthesize complexity, which is thought to allow the progression toward the highest levels of hierarchical growth where in all these theories is the only moment possible for human action to be characterized by integrity. Integrity is seen as a concern to respond ethically to the social world without only one's own interest resolution in mind[2].

A key assumption of all the modern paradigm on the self and action with integrity vis-à-vis the social world is the idea that individual autonomous cognitive development lies at the basis of development until about the end where the concerns of the subject-agent is basically how to succeed in forms of tactical and strategic action, which allow the mastery of the object world. The same authors however recognize their very key assumption as a weak hypothesis at a late stage of development in their models, when a dualistic switch is proposed to a more intuitive, dynamic, and adaptive kind of action that does not follow a cognitive rule but is mainly about reacting effectively to external stimuli. This is the PS proposal that, however, does not substantially overcome the assumptions and limitations of the AS (main model) as it is still mainly concerned about how the subject can lead successful autonomous "authorship" via cognitive mastery of the object world. The only difference here is that action is mainly through dialectical relational responses, whereby relations and the object world at large are being used as means for the acting subject's own cognitive growth via a more open, fluid, and dynamic response capacity. In this version of the AS (i.e., the PS), the ethical dimension of action disappears as a key concern behind action, which is replaced by the ideal of freedom of the autonomous will at the base of the PS proposal. However different these two models—which we summarized as the AS and the (post-autonomous) processual self (PS)—have been, they have quite congruent basic assumptions; hence, PS in the majority of models appears as the end stage following the highest forms of action characterized by AS.

We suggest that, across AS and PS models in different lines of work in modern psychology and human development models, there are the same key premises as the anthropological assumptions driving their notion of self and action. To show the commonalities involved in how AS and PS are theorized, we utilize social cognition theory to summarize the cognitive dynamics of the AS and the PS. We show that AS theoretically relies on the mastery of a critical, detached, and rationalist knowledge and is comfortable with system 2 ("slow") analytical cognitive processing. Its moral psychology requires reason to operate cleanly and detached from (moral) feelings. By contrast, PS relies on a synthesis between system 1 ("fast") and system 2 ("slow"), and this (Kahneman, 2011) requires PS to rely more heavily on moral intuition and adaptive (more relationist) cognitive processing responses as dominant modes of actions. However, in PS, rationalist processing is secondary, and often serves *post-hoc* rationalization of intuitive responses that do not ultimately overcome self-autonomy. PS's moral psychology is attuned to inner focusing; it applies moral relativism and relationism while it is adaptive to context[3]. For some authors (for example, in the stage literature of adult development), PS is often a negation or disavowal of AS. Other authors, however, accept some kind of dualistic coexistence or a synthesis between AS and PS; trying to "correct" AS makes these authors fall into a dualism, accepting both modes without a clear rationale of how their opposing assumptions can be combined. We suggest that the limitations of AS and PS are based on their assumptions surrounding self-autonomy and a modular view of the brain (for greater clarity on the contrast between AS and PS, see **Table 1**).

It should be noted that regarding the conflicting cognitive preference bases distinguishing AS (relying on abstract/rationalist) and PS (relying on a cognitive functioning more akin to intuitive and emotional basis in cognition), AS does not mean a lack of emotion or intuitive functioning, but rather a preference for rationalism in the face of choices and dilemmas related to action (Haidt, 2001). Both admit the presence of rationalism and its influence, but, in the end, decision-making in AS is based on rationalist cognition and that in PS is based on intuitive and emotive cognitive preference. A summary of the most important authors and models will help us to highlight the links between AS and PS and the idea that they share the main premises (for a comparison on the evolution between AS and PS in moral development, see **Table 2**):

[2]This assumption supporting a uni-linear cognitive stage type of development has received criticism (Hannah et al., 2011). One of these critics highlights that the origins of behavior associated with the human organism's capacity to maintain integrity have not been sufficiently explained (Bandura, 1991). Others point to the empirical finding that the so-called "higher cognitive moral capacities" have only been found in 10% of the overall population that performs moral reasoning at the highest (the so-called post-conventional) levels of cognitive moral maturity in the self (Kegan, 1994; Cook-Greuter, 1999). Finally, a third line critically reviewing these theories notes that the modern assumption in all these modern theories that inner moral cognitive maturity capacity predicts moral behavior has found weak evidence based on empirical data (Ford and Richardson, 1994; O'Fallon and Butterfield, 2005; Treviño et al., 2006).

[3]In the literature of reference, we have found that the same authors that propose AS as an idealized path for the self and human development in earlier adult life subsequently propose PS in later stages. This is because, although all dominant modern self- models in psychology contain fundamental assumptions that are premised on a universal idealization of self-autonomy, their limitations as an ideal for human action and growth are acknowledged.

TABLE 1 | Two ways of knowing: two kinds of integrity based on the self-autonomy paradigm.

	AS (autonomous self) Integrity and meaning making	PS (post-autonomous processual self) Integrity and meaning making
1.	Believes in the capacity to align behavior with one's values, principles, and beliefs	Responds to the reality as it emerges via ongoing processual adaptation and flow
2.	Pursues ideals and principles in alignment with a moral superior rule (e.g., human rights, duties, justice, acting with concern for others)	In all roles and relationships is able to be authentic and express feelings genuinely
3.	Trusts and effectively applies a decision process based on analytical rationalist thinking to analyze "hard facts" aiming to reach "objectively" ethical decisions and outcomes	Trusts and effectively applies decision processes acting on what "feels right" facing a certain particular in a given moment and time
4.	Is principled; commits to the importance of fair universal rules and duties externally given and wants explicit, clear, common and normative frameworks with which autonomous agents can align their behavior	In all roles and relationships, one authentically expresses feelings as they appear at a given moment
5.	Devoted to a view of integrity based on specific sets of values, principles, commitments, and duties	Approaches integrity as an emergent natural process that can be maintained subjectively via "decentered subjectivity"
6.	Believes a person must maintain high-level ethical ideals and a principled character to maintain integrity	Values autonomous authorship of one's life story as important, creative and authentic action in the world
7.	Is committed to maintaining a principled character in accordance with an externally valued moral universal framework, without questioning it	Is committed to acting autonomously as it feels right in any given moment as action that makes the world a better place based on the subject's beliefs
8.	Resolves conflicts of interests by autonomously applying principles and perceived duties according to each agent, to reach an "ideal state of affairs" in accordance with a given moral framework. Negotiates on the basis of social contract principles	Trusts others to relate, talk and respond directly; seeks consensus via direct subject–object relationships. Negotiates via mutual adjustment on the basis of dialectics that invite bargaining and/or synthesis of approaches
9.	Is willing to question previous stances, choices and actions only after the conclusion of a deliberative process.	Is willing to inquire, and critique previous stances, choices, and actions with natural openness to reframe and modify them in any way/direction
10.	Is focused on achieving the goals and foci and outcomes of a deliberative process; believes that, when it comes to happiness, achieving one's goal is what one should seek	Believes that, when it comes to valuing the achievement of happiness, the process is more important than the destination

A. **Piagetian and post-Piagetian** cognitive development psychologies share a common heritage with Pol and Ville (2009) unilinear stage theory of cognitive development (Flavell, 1963). It "borrows" a structural genetic epistemology marked by a universal assumption of growth in cognitive terms influencing overall human growth. It is assumed that cognitive meaning making in the inner self drives stances to life and action. Indeed, in all of the Piagetian and post-Piagetian stage models, cognitive moral maturity is seen as associated with a dualistic hypothesis, whereby initially an autonomous (AS) and subsequently a processual (PS) kind of cognitive meaning making underlies two opposing modes of human maturity. For example, two key works that are consistent are:

B. **Kegan.** The post-Piagetian theories of cognitive development, proposed by Kegan (1994) and (Lahey Laskow, 1986), adopt a subject–object relation psychoanalysis oriented in answering the question how to best deal with all mental demands of life, and here relations are also understood as one of these. These theories trace qualitative changes in how people make meaning from experience in the cognitive affective, interpersonal, and intrapersonal domains, with an emphasis on the cognitive rationalism domain, despite its multi-dimensionality (Creamer et al., 2010, p. 550 and 552). These stage models describe a subjective framework in which a person is embedded that operates in the "assessment" of an object (which refers to a person, an act, or a situation in these works). Its basic assumption is that the entire latter (weaker in cognitive terms) way of understanding becomes the "object" that is critically evaluated by higher frames of mind (cognitive domains). Each person's mind is thus seen as capable of developmental shifts in meaning making structures and qualities until a shift reaches a new mental equilibrium (Kegan, 1994). For this author (Kegan, 1986)[4] and related feminist-inspired versions (Lahey Laskow, 1986), PS emerges at the end and previous assumptions in line with an idealized AS mode of the self and human integrity are rejected.

The challenge of PS is found in how to respond to the transcendence of one's "mind"—how to adaptively and reflexively respond without relying on rationalist judgment on the basis of positions, principles, and ideologies as seen in the previous stage of AS. Hence, PS here emphasizes a valuation that chooses a dynamic Hegelian type dialectic.

C. **Cook Greuter**. Another seminal post-Piagetian piece of literature in this genre comes from Cook-Greuter (1999) extension of Loevinger's (1966), Loevinger (1976) theory. For this author (Cook-Greuter, 1999), PS emerges at the end, rejecting previous assumptions in line with an idealized AS mode of the self and human integrity. Human development toward integrity and maturity in the self in Cook-Greuter (1999) is seen not just as a cognitive challenge. It is rather mainly understood as a challenge of ego; hence, Freudian ego development is the basic underlying

[4]Kegan introduces AS meaning making in "the self-authoring mind" stage ("fourth order, or modern mind") (1994). He illustrates that the AS autonomously defines one's value system(s), identities, goals, and destiny using critical reason, while it enables the subject-author to independently "author" personal moral choices, actions, and decisions that are detached from feelings as the particulars of each relationship are approached with skepticism (Kegan, 1994). Kegan's model introduces PS as the highest post-autonomous stage, using the labels "the self-transforming mind" (Kegan's fifth order, or post-modern mind). Processually, the latter operates dialectically in a direct fashion (Kegan, 1994).

TABLE 2 | Constructivist cognitive moral developmental theory.

	Autonomous Self (AS) = Modern Autonomous	**Processual self (PS)= Post Modern Autonomous**
Kohlberg	**Stage 5—Prior rights and social contract or Utility:**	**Stage 7** ***(In Kohlberg, Stage 7 is acknowledged as a duality compared to Stages 5–6, i.e., a second pole of moral maturity, for persons to acknowledge and practice both AS and PS)***
	It is right to uphold a society's basic rights, values and legal contracts, even when they conflict with concrete rules and laws of the group	Answering the question **"Why be moral? Why be just in a universe that appears unjust?"** with a self-directed commitment to ethics as a way of life
	Laws and duties are based on rational calculation of overall utility ("the greatest good for the greatest number")	Natural law theory holding that individual responsibilities, duties and rights are **not arbitrary, or dependent on social convention** but are objectively grounded as laws of nature
	Stage 6—Universal Ethical Principles:	Experience is of a non-egoistic or non-dualistic variety. The essence of this experience is a sense of being part of the whole of life. Experience of ethics in the process of life, as a whole
	Assumes guidance by universal ethical principles: justice, equality of human rights…	Taking a cosmic perspective that begin with the realization of the finitude of our individual self: ethics as a feature in interdependent moral inquiry
	When law violates the principle, one acts in accordance with the principle	
	The perspective corresponds to a rational individual recognizing the basic moral premise of respect for other persons as ends, not means	
Kegan	**4th Order: Self—Authorship: Self-Formation, Identity, Autonomy/Individuation:**	**5th Order: Self—Transcending Mind,** Interpenetration of Self and Other, Relationship between forms.
	Good working of the self and its recognition by the other begins with the shared premise that each brings a distinct and whole self to the relationship	Capacity for a new trans-system or cross-form way of organizing reality. Refuses to see oneself or the other as a single system or form. Taking relationships as a process that itself creates its form or elements. The relationship is a context for sharing and interacting in which both parties experience their multipleness
	The relationship is a context for the sharing and interacting of two whole, distinct, self-possessed and self-authoring selves (p. 312)	In the face of difference (5th-order selves), stops to see if they haven't in fact made the error of identifying themselves wholly with a foreign culture of mind that gives rise to their position (which shows up as a kind of ideology or orthodoxy) and identifying their partner wholly with a foreign culture of mind that gives rise to their partner's position
	People consider themselves at their best; when in the face of difference, they do not disdain the other, but seek to discover how the other's point of view arises out of a "culture of a mind" with its own coherence and integrity	
Loevinger and Cook Greuter	**Individualistic Stage (E7)**	**Integrated Stage (E9)**
	Beginning to attend to context and point of view	**Construct Aware—** Recognizes fundamental ego-centricity as an obstacle to growth. Being a witness to oneself as an experiencing being. Concepts of self and world are subjective and continually changing. Humility and deep tolerance for others. Cyclical systems view of causality
	Understanding assumptions behind conventional stages	**Unitive—** Immersed in immediate flow of ongoing experience. Views others from multiple points of view. Tolerant, compassionate and feel an affinity with all life. **Dual knowing, accessing reality directly and through symbols**
	Reality is not "out there," but connected to personal interpretation	
	Truth is relative	
	Multiple sometimes contradictory selves	
	Autonomous Stage (E8)	
	Integration of conflicting sub-identities	
	Self-determination, self-actualization, and self-definition	
	Believe they have realistic view of self and world	

theory, evolving via nine stages—three of which come at the post-conventional level and are relevant to this article[5].

[5]The first is the "Individualistic/Autonomous" stage, which captures AS. Here, the person masters his ego via critical reason and it is Cook-Greuter who herself criticizes the overly analytic use of reason whereby moral disagreement (often without conscious processing) is approached "… as a mere technical problem to be solved" (1999: 24). Instead, the seminal theory which predates this modes is Loevinger (1966). This captures PS via the "integrated stage" (1976); in Cook-Greuter (1999) model— that she arrived to upon empirical testing of Loevinger's stage— PS is "broken down" in two integrated stages: the Construct Aware and the Unity "Integrated Stages." Here, PS requires the dissolution of the notion of self altogether as a meaningless conception that is dominated by the ego (Cook-Greuter, 1999).

D. **Kohlberg.** Kohlberg's cognitive moral development theory critically displays the interplay between AS and PS and particularly focuses on how intellectual capacities affect the quality and kind of moral meaning making, so it is a theory with a special concern for the moral action as a domain[6]. It is not initially clear for academic reviewers if Kohlberg goes from AS to PS via a "rejection" of AS (AS is aligned with Kohlberg's theory premises) or if he finally proposes that a dualistic way supporting a synthesis between AS and PS is possible (which would mean a non-rejection of AS in agreement with Kohlberg, 1969; Colby and Kohlberg, 1987). We suggest that he has a rather dualist proposal (Kohlberg and Mayer, 1972): his earlier body of work looked at the cognitive moral maturity of AS (Kohlberg, 1969, 1981; Colby and Kohlberg, 1987), while his later works attempted to lay a foundation for an alternative processual "mode" of human maturity or PS (Kohlberg and Mayer, 1972; Kohlberg and Ryncarz, 1990)[7]. Kohlberg's work helps us to uncover and theoretically describe the differences and interplay between AS and PS (Kohlberg and Mayer, 1972). But even these authors' latest revised theories do not help transcend AS and PS's conflict or being understood as a dualism.

E. **Ryan and Deci.** Considered the key modern psychology scholars in the tradition of mainstream psychological theory (Ryan and Lynch, 1989; Deci and Ryan, 1991, 2013; Ryan, 1995; Ryan and Deci, 2000, 2004), their theories echo similar grounding assumptions on a universal model of self and cognitive integrative dynamics. Like in all stage theories, these works also purport that self-integration is an aspirational ideal. This understands human maturity as a goal that can be globally achieved and "mastered" via more mature states (not stages, in this case) of human development. The main theoretical premise therein seeks to uncover what promotes motivational integrative dynamics in the self (Deci and Ryan, 1991). Hence, there are many commonalities between these theoretical assumptions and the modes of AS-PS in the stage-based adult development theories included[8]. The focus here is psychological dynamics that activate inner tendencies, striving to cover various needs and domains and gradually aiming to establish higher unity in the self (Ryan, 1995). Self-development, in our view, relies upon a dynamic–synthetic (influenced by a Hegelian synthesis view) system view of the self-striving toward gradual self-unifying processing and the achievement of autonomous processing (Ryan, 1995). This is premised to be possible via two opposing or conflicting modes of processing, i.e., either via more rationalist-cognitive processing (relevant to AS, as shown), or via a more emotive and intuitive mode of processing in the self (relevant to PS, as shown).

THE IPS MINDSET: INTEGRATION OF THE PERSONALIST, THE MODERN, AND THE NATURALIST PERSPECTIVES AND A UNIFIED UNDERSTANDING OF THE PERSON AND ACTION

Specifically, IPS presents a different paradigm of understanding the self and action, which influences how action with maturity is understood. It consists in considering human beings and human development not in an idealized way, but as they really are, respectively, abandoning altogether the hypothesis of self-autonomy as a precondition for self, human action and meaning making, and moral and cognitive maturity itself.

This model is based on an interdisciplinary dialogue between philosophy and psychology (Akrivou et al., 2016, 2018). The key philosophers for understanding this proposal are Aristotle, Leonardo Polo, Alfred N. Whitehead, and Wang Yangming, as well as the psychologists Carl Rogers, Erik Erikson, and Viktor Frankl. The proposal's basic assumption is the integration of the personalist, the naturalist, and the modern "mindsets," so its theoretical premise foundation starts from Polo's three radicals (fundamentals) that describe the different main approaches to being in the history of thought. The radical (fundamental root) of *nature*—based on classical philosophy—states that the human being has a nature to develop with psychological and biological dimensions, and that a person is naturally a dependent rational animal; hence, our reason is chosen by each person based on a teleological concern (the common good). Secondly, the radical of the person—based on the Christian philosophy—affirms that the human being has a singularity due to its intimacy and uniqueness, and that we can rely on our intimacy to lead action with a particular kind of freedom, which is "freedom for" affirming a relational ontological basis for the self and a transcendental anthropology regarding what is to be human, i.e., that the person is a unity that pre-exists action and life itself. Thirdly, the radical of the subject—based on modern philosophy—is focused on the result or end products of our action; it affirms that the human being can produce new things instead of developing what (s)he receives.

IPS captures therefore Polo's work main assumption as the philosopher proposes that all these three "radicals" are present in

[6]Until his sixth stage of moral development, Kohlberg closely follows Piagetian scientific rationality epistemology (for which he is often misunderstood as a quintessential Piagetian thinker despite the evolution of his work near the end of his life). Kohlberg's (1969), Kohlberg (1981) stages 5-6 clearly conceptualize the cognitive processing of AS, which is expressed via an idealistic introduction of an autonomous and principled will that displays a concern for universal standards of justice and fairness— fifth Cognitive Moral Development stage— followed by an autonomous rational definition of personal values in consistency with justice, human dignity and human rights, sixth CMD stage (Kohlberg, 1984; Colby and Kohlberg, 1987).

[7]Within cognitive moral development models, it is Kohlberg's seventh stage (Kohlberg and Mayer, 1972; Kohlberg and Ryncarz, 1990) that "turns its back" on all previous epistemological assumptions of the above models (Akrivou, 2013). Kohlberg seems to have had a breakthrough in his research when he published -shortly before his suicide- an empiricist, processual kind of moral psychology. Abandoning rationalism and the idea of detached abstract knowing (Akrivou, 2013), Kohlberg (Kohlberg and Ryncarz, 1990) argues for an organismic, contextually sensitive, fluid and adaptive response mode in his seventh stage. Kohlberg acknowledges both "modes" of moral psychology as important for ethics, but his work does not add any theoretical solution or hypothesis for the possible reconciliation of AS and PS.

[8]Ryan is in agreement with Kegan and Cook-Greuter's understanding of the self as lacking unity and operating with conflicting premises across various domains (e.g. in Ryan, 1995). Ryan aims to find how to reach a state of autonomous integrative processing, as well as the key purpose of these theories, which are mainly concerned with how to effectively perform and cope such that the organism can function with autonomy (Ryan, 1995).

each action, integrated by the person. Therefore, human action is an action that is by constitution integrated but different forms, qualities, and kinds of integration exist, which are available to us based on the choices we make and how to relate to others and act. Applying these to integrative human growth, Akrivou et al. (2018) suggest that being and growing as a human being involves the systemic integration of these fundamentals from within a person as a unity, which means that knowledge and action are by definition one in the constitution of the self. It also means that, in this model, the self is understood as a relational self by its very constitution (which pre-exists even action) and that there is a unity across cognitive, affective, practical, and ethical aspects of action.

So, based on this last idea, personalist moral psychology is very well-harmonized with virtue ethics' normative philosophy (Koehn, 1995; Solomon, 1999; Akrivou, 2013). According to these scholars, (a) personal growth is meaningless outside of the notion of acting for the common good in the frame of relational interpersonal growth concerned for the overall growth of specific others (freedom for) as much as one's own; in fact, the idea that growth happens via autonomous individualist action or capacities is meaningless in the IPS theory. Secondly, according to this model, (b) human growth is shaped by assumptions characterizing free and open systems, such that growth can go in any direction and evolves in processual and responsive moral dialoguing terms (Akrivou and Orón, 2016).

Integration in IPS needs to happen from within the person: only by being able to acknowledge everyone as a transcendental and unique human being with the capacity to be free to love other human beings (not for logical reasons) is it possible for our relationships to limitlessly grow. Combining (a) and (b) leads to the idea that in the IPS model, the personal action is not chosen neither from within self-interested concerns, nor from within a duty and obligation as the logic of exchange but instead it is the logic of gift which is the driver of action (Akrivou et al., 2018). The authors (Akrivou et al., 2018) also show that, in fact, the twin model of AS and PS is a dualistic understanding of the same fundamental root of humanity because they both capture assumptions with a focus on the mastery of the outcomes of action (production) in the world that are part of the subject-agent's modern "radical." Thus, the pathway for human cognitive maturity from within the subject-agent's self-system ignores (or weakly respects) the "radical of the person" and the "radical of nature." As a consequence, the pathway for human cognitive maturity is narrower and unsustainable.

Broader human learning and development theory outside the key theories of development in modern psychology reviewed earlier in this article, including the works of Rogers (1951, 1961, 1964) and Erikson (1994), are particularly relevant to illustrate *how action with integrity and* moral maturity is led from within the IPS mindset operates. IPS is concerned with relations as a gift freely chosen with a concern to help the entire whole person emerge as opposed to instrumental relations within a mastery perspective. Indeed, how this helping–psychotherapeutic relationship works can be understood via the work of Rogers (1961) who illustrates our argument that IPS does not present a model of maturity that simply synthesizes, or technically integrates (Akrivou and Orón, 2016), system 1 and system 2 cognition. From the very beginning of the therapeutic accompaniment, Rogers seeks that the client enters into his interiority and makes a growth path from there. This happens by gradually trusting in how one's humanity is manifested via an experiential path that frees the *inner experiencing focus*, and a gradual trust of the immediacy of experience within the person's organism to free the integrity we all naturally share as persons (Rogers, 1961, p. 131).

This reference to inner experiencing process that is only facilitated through the logic of gift in relations is a journey to inner virtue and it is precisely here that Rogers shows that it takes time, and one has to live and reflect on various experiences and feelings. IPS agrees with Rogers that growth is only possible through mutual growth in the relationship (Akrivou and Orón, 2016), but Rogers' humanistic relational psychoanalysis provides the IPS a useful theoretical pathway toward turning "modern autonomous selves" into the IPS mindset when a human personal relationship is deprived of the secure distanced approach of the Cartesian observer and ceases to master the other while maintaining cognitive control and mastery.

To illustrate, Rogers (in stage six) purports that the journey toward higher IPS maturity requires the experiential learning that also includes the capacity for acceptance of "both a feeling and what constitutes its content" (1964, p. 146–8), which involves the entire abstract and emotional–intuitive cognition of a person without censoring this from outside-in, but while utilizing human relationships as the basis of personal growth. At stage seven of Rogers's framework (Rogers, 1951, 1961; Rogers and Dymond, 1954; Gendlin, 1962, 1969, 1978), personal growth is completed by accepting one's own contradictions and full humanity with "a growing sense of ownership of the changing feelings (bringing about), a basic trust in one's own inward … total organismic process" (Rogers, 1961, p. 151).

SUMMARY ON THE NEUROPSYCHOLOGICAL DEBATE ON LIGHT OF AS-PS, AND THE IPS MINDSETS

We think that the whole discussion about AS/PS models and their evolution correspond naturally with Kahneman's exposition of the two systems. However, we observe a great evolution in current neuroscience that—besides their differences—surpasses the division of Kahneman's system 1 and system 2 thanks to a more dynamic and systemic conception of the brain. Based on that, we will present another way to understand human development according to the IPS paradigm.

Systematic review of the broad and fragmented theory and literature on dual processing models of higher (social) cognition (Evans, 2008) helps to ground AS and PS's distinct cognitive mechanisms. Current accounts of dual-processing support the idea of two distinct cognitive autonomous processing systems that are distinct in both evolutionary terms (looking to the history

of the development of the human mind) and the architecture of cognition (Evans, 2008)[9].

Evans (2008) suggests that evidence explicitly associates system 1 cognition with emotion and is capable of utilizing rationalist cognition as secondary (Evans, 2008, p. 258). We believe this indeed supports our argument that PS primarily relies on synthesis of system 1 and 2 that allows to be not just rationalistic but also more dynamic, while reason is utilized as a follow-up cognitive mechanism. Research in psychology suggests that there is also a self-protective "bias" here, as reason is required to offer *post-hoc* rationalization of what is primarily an emotive and intuitive subjective action (Haidt, 2001). This would confirm that, although it is more relational, PS remains focused on the self.

We will now focus on current neuroscience evolution. The proposed systems 1 and 2 are inserted into the line of modular vision of the brain. Modular vision, in its strictest version, associates each brain module with a cognitive function. The main reference of the defense of modular thought is the philosopher of the mind Fodor (1983). Although his statements are currently subject to nuances, his proposal has received continuity from both philosophers of the mind and scientists, and they are applied in many fields, such as Gardner's multiple intelligence (1998) and emotional intelligence (Goleman, 1998, 2008; Rolls, 2014). However, this neuroscientific vision has been seriously questioned, and other models of understanding the brain functioning are being explored.

A neuroscientific analysis exceeds the claims of this article, where we just show this current debate. The first criticisms against the systemic approach that opt for a dynamic vision that requires synchronizations of the whole brain, but also considering external relations to the person, will come from the "dynamic systems" proposals (Thelen and Smith, 1994; Kelso, 1995; Juarrero, 2002). We can consider the works of Pessoa (2008, 2013), Anderson (2014, 2016), and Sporns (2011, 2014), Shine et al. (2019) as a point of inflection since they disqualify the claim that a brain module can be associated with a psychological function (for a detailed account of the evolution of neuroscience, see Blanco, 2014, and Orón Semper, 2019 in the field of emotion). From neuroscience, the debate is open but what seems more accurate in the understanding of emotion is that it is an information of the global estate of the system and, in the case of human being, an effect of human action and his or her history (Orón Semper, 2019, p. 299). Different ways of understanding brain functioning leads to different understandings of human reality as well as different educational proposals (Orón et al., 2016).

This new vision of neuroscience is congruent with the main assumptions of the IPS proposal: that relationship is constitutive of the persons but each person's singularity is a complicated process of how each person acts as a unity of virtue to grow with the other(s) one chooses to offer gifts to (freedom for), albeit relating as a free and open system. Affective processes in the self and other relations are informed by each person's unique identity and history, while a two-way feedback processing informs the neuroscience of IPS mindset. There is also a clear vision of the organism as a system that does not allow one part of the brain to act independently of the others, but rather it is a unified orientation in only one direction. This would be related to the IPS conception of human action, as a unifying movement that arises from within the person and aims to act with/for others albeit in ways which provides to the acting person opportunities to integrate and improve their life according to who they are and their calling. So, action is always both personal and social at the same time in IPS and is not marked by the duality between self-interest versus duty to others's good but seeks mutual virtuous growth via personal relational action. In IPS, growth happens this way, while the motivation for growth is for each person the striving to intensify and improve the quality of relation to the others involved in an action.

IMPLICATIONS FOR EDUCATION

According to our research on the self and action (Akrivou and Orón, 2016; Akrivou et al., 2018), each "mindset" offers a different assumption and vision on how to understand and lead educational relations and networks to positively influence learning and growth involving wider forms of community. Regarding the existing antagonistic functioning between AS and PS in the self-autonomy paradigm of human growth, PS does not abandon AS because PS keeps the cognitive approach to education, which is supporting a system/module mentality (in cognition and forms of action undertaken in education) and is always concerned with a choice between educational approaches that serve either the cognitivist or the more active-responsive-emotivist two systems (constantly falling into a dualistic fallacy)[10].

[9]The same idea, although in narrower, more specialized terms, has been published in other influential works in psychology, namely the idea that there are two opposing kinds of social cognition i.e., Kahnemann's fast and slow brain (2011; Kahneman and Riis, 2005) and the premise of an antagonistic conflicting relationship between analytical reasoning (corresponding to AS) and socio-emotional cognition (corresponding to PS) in the opposing domains theory from Jack et al. (2012). These works show differences associated with dual systems of thinking as follows: The first cluster focuses on consciousness, where system 1 is less conscious, implicit, automatic and holistic (perceptual), while system 2 is conscious, explicit, highly controlled, and analytic (thinks/reflects) (Evans, 2008). The second cluster distinguishes systems 1 and 2 in evolutionary terms, where system 1 is old in evolutionary terms, with a focus on an evolutionary kind of rationality that is shared between animals and humans and that is more holistic/non-verbal. System 2 is evolutionarily more recent, with a focus on individual, autonomous reasoning processing; it is uniquely human and mainly linked to language. The third cluster is based on the assessment of the two systems on the basis of their functional characteristics, where system 1 is associative, domain specific, contextualized and more pragmatic; system 2 is rule based, domain general, universal, abstract, non-contextualized and sequential. Finally, the fourth cluster of classifications of prior studies on system 1 and 2's distinctions is based on individual differences. According to this focus, system 1 is independent of general intelligence and working memory and is thus more shared/universal across the human species, whereas system 2 is highly dependent on a person's general intelligence and limited by one's working memory capacities and thus is less universal and more particular.

[10]Specifically, in AS, system 2 (slow) has to take control of system 1 (fast), while in PS, the subject-agent needs the (higher capacity of) synthesis to maintain a "flow" behavior. But, this is not always as simply done as is idealized, as Kohlberg shows, knowing that reason in system 2 is quite dominant. Hence, the highest stages in stage theory need to idealize a final stage whereby only then a technical

IPS theory is not an alternative view on how to balance or integrate systems 1 or 2. IPS implies a new hypothesis of human cognitive processing by suggesting that there are no modes and no modular view of the brain; indeed, from a neuroscientific perspective, IPS is not concerned with the technical integration between two modes. IPS altogether transcends/abandons the mentality/hypothesis of autonomous system functions in the brain and a different notion of the human being emerges. For this reason, IPS is not a proposal/model of how to *technically* integrate system 1 and system 2. Good examples of published educational work that seem more consistent with IPS is the first published cases of educational program that developed relations and networks of exchange within their wider community as a distinct strategy for social innovation by Grogan and Fahrenwald (2019, in Weber et al., 2019). Indeed, the development and nurturing of human and communal level relations and networks in these examples have multiplied effects of positive social virtuous growth and influence through the very action of students and teachers, which seems closer to the IPS model.

Naturally, as a theory of human beings and action, it claims to transcend the dualism of AS-PS that relies on the autonomous self-subject's agency by bringing back the person as the systemic integrator of the two modes (rationalist or affective or intuitive faculties). The question is not if reason guides (mature) human action (with integrity) or if moral feelings and intuitions are better premises. We suggest instead that it is the person who acts, which is supported by our altogether different interpretation of the human brain and its cognitive architecture. In general terms, we state that while AS is aligned with an education based on rational and memoristic exercise, and PS is aligned with the proposal of education in competencies that dominate today, IPS is asking for a change of paradigm that put interpersonal relationships and personal growth in the center. Both PS and IPS consider relationships, but while for PS relationships have an instrumental value, for IPS, they have a final value, or value in themselves. The instrumental view of relationships can be found in some proposals (Hughes and Cavell, 1999; Frymier and Houser, 2000) that study the effect of the interaction between the teacher and the student, as well as motivation and learning in the school environment.

This debate is not new, for instance, the UNESCO report "Learning: The treasure within" (Delors et al., 1996) shows that the four pillars of education (including learning to do, learning to be, learning to live together, and learning to know) must be unified to the service of "learning to live together," which places interpersonal relationships as an end and not as a mere means. A similar discussion is found in Peters (1966, p. 34, 1967) who warns not to be confused between an educated student and a trained student, and that the school should seek for educated people (for a more detailed study of this debate, see Orón Semper, 2018, and Orón Semper and Blasco, 2018).

This open debate helps us to enter the educational discussion about the different ways of understanding cognition according to the different models, but now we will just give some suggestions to reflection at the educational level. For AS, cognition is a psychological act reduced to a mere rationalistic exercise and whose activity is fundamentally theoretical. Personal relationships are almost accessory to the act of learning, because in the end, the main student's relationship is with the book. For PS, cognition is still a psychological act whose activity would be theoretical and practical. Cognition remains an eminently rationalist act but is enriched by other psychological faculties such as will and emotion that are added. These other psychological acts as well as personal relationships have an instrumental value for the person to control their surroundings thanks to the acquisition of some skills.

For IPS, cognition as a psychological act is initiated from the interiority of the person as a way to interact and position herself in the world. That psychological cognition is activated from the person's interiority means that when the person expresses herself from within, the various psychological faculties are born integrated. The person's end is not properly to dominate the object that seeks to know, but rather the interpersonal relationship, an encounter with another person. While PS instrumentalizes the relationship to reach the object, IPS instrumentalizes the object to reach the person as an end. In both cases, the object is mastered and the relationships are present, but in a very different way. Another difference between PS and IPS is the role of the educator. For PS, the educator is a coach, who facilitates or helps the student to attain her goals, which does not imply that the educator as such has to change, and the process rests fundamentally in the learner's action. For IPS, the educator is, in some way, being also educated, because he or she also has to grow. The action is fundamentally a cooperative action and not a sum of individual actions. We think that nowadays the sensitivity toward the IPS model and its educational involvement through pedagogical proposals is growing, as can be seen, for instance, in the new trend of "service learning."

Having clarified the anthropological and psychological assumptions for AS, PS and IPS, and seen how these involve two different educational and relational models, its application to innovation appears as very suggestive. AS and PS grow as they manage to expand their mastery and control, domain after domain, understanding innovation as a key to adaptation and efficiency. According to these models, any change that helps the best realization of the person's purpose (that is, any improvement in efficiency) will be considered an innovation. In the IPS model, innovation acquires broader perspectives: the object is at the service of the interpersonal encounter. This change proposes an education centered neither on the object (AS) nor on the subject (PS), but focused on the relationship (IPS) (Orón Semper, 2018).

Innovation in the IPS is also associated with the growth of the subject, but as the subject is understood differently, the sense of growth also changes. If personal growth is unrestricted (Polo, 1997, 2007a,b), the human being attempts to transform the world as an opportunity for growth. Our biggest project is the one

integration ("synthesis") happens. This is an idealized notion of human growth. It is not possible to say that PS is system 1 because it implies one involution. System 1 is present in animals and humans and system 2 proper to human beings. As shown earlier, if in PS human beings learn to abandon system 2 to focus on system 1, then this implies an involution in development.

we develop with regard to ourselves and our processes of self-determination. This means that anthropology and motivation are intrinsically linked because the main motivation for action corresponds to becoming more aware of and enjoying one's growth, rather than extrinsically seeking to grow one's financial or career prospects. Moreover, as various authors have shown (Ariely et al., 2009), when a task includes a cognitive skill, greater economic reward leads to poorer performance and less creativity. Thus, innovation is not merely determined by environmental stimuli, but rather rests on the fact that the human being—in light of freedom—is always capable of introducing novelty.

Human growth for IPS is the intensification or maximization of the interpersonal constituent relationships. Innovation will be associated with any creative act that manages to improve the relationship in the real world in which this relationship takes place. In the case of the human being, adaptation, efficiency, and even competence do not justify by themselves, but rather they are at the service of a life of quality, that is, a life that allows us to live better together. In the best case, adaptation, efficiency, and competence will be means, along with many others, to serve a purpose. As Delors himself indicated, lighting a warning light on the development of competencies (Delors, 1996, p. 14, 16–18), separated from their purpose, they can become even degraders of humanity. In this case, "How can I transform the world around me to improve interpersonal relationships?" should be the question that precedes innovation.

In IPS, there is a richer environment than those already mentioned: the relationship itself. The interpersonal relationship, being an end, can also be a medium. An interpersonal encounter is the medium in which innovation best emerges. An example of this is Lipman's proposal (Lipman et al., 2002) to make "research communities" that values interpersonal encounter as the best means for innovation and thought creation. We think that this can be developed in pedagogical proposals such as "cooperative work" and "service-learning," which does not rule out the possible goodness of other proposals—such as "learning through problems" among others—but warns us to put them in a proper anthropological context. Indeed, within the context of practical teacher education nowadays, cooperative work, one of the main inter-organizational learning challenges (Boer et al., 2018), fits perfectly with IPS mindset because in both cases personal growth happens thanks to the personal encounter.

The IPS model can help immensely when applied to different aspects of education. For example, it understands leadership in education not as successfully applying strategies but as knowing how to make sense of education and promote cooperation among colleagues (Simkins, 2005) and students (Orón Semper and Blasco, 2018). On the whole, when applied to education, we believe that the IPS model can aid social innovation in a profound and sustainable way since it shifts education toward an act focused on social renewal starting with its very foundation.

AUTHOR CONTRIBUTIONS

KA, JO, and GS contributed conception and design of the study and wrote sections of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

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REFERENCES

Akrivou, K. (2008). *Differentiation and integration in adult development: the influence of self-complexity and integrative learning on self-integration* (Doctoral dissertation). Cleveland, OH: Case Western Reserve University, OH.

Akrivou, K. (2013). "Moral reasoning maturity," in *Encyclopedia of Management Theory*, ed E. H. Kessler (New York. NY: Sage Publications), 489–493.

Akrivou, K., Bolade-Ogunfodun, O., and Adewale, A. A. (2016). "Integrated habitus for the common good of the firm – a radically humanistic conception of organizational habitus with systemic human integrity orientation," in *Challenges of Capitalism for Virtue and the Common Good: Inter-Disciplinary Perspectives,* eds K. Akrivou and A. J. G. Sison (London: Edward Elgar) ISBN 9781784717902.

Akrivou, K., Orón Semper, J. V., and Scalzo, G. (2018). "The inter-processual self," in *Towards a Personalist Virtue Ethics Proposal for Human Agency* (London: Cambridge Scholars Publishing).

Akrivou, K., and Orón, J. V. (2016). "Two kinds of human integrity: towards the ethics of inter-processual self (IPS)," in *Challenges of Capitalism for Virtue and the Common Good: Inter-Disciplinary Perspectives,* eds K. Akrivou and A. J. G. Sison (London: Edward Elgar), 221–253. ISBN 9781784717902.

Anderson, M. L. (2014). *After Phrenology. Neural Reuse and the Interactive Brain.* London: MIT Press.

Anderson, M. L. (2016). Neural reuse in the organization and development of the brain. *Dev. Med. Child Neurol.* 58, 3–6. doi: 10.1111/dmcn.13039

Aquino, K., and Reed, A. I. (2002). The self-importance of moral identity. *J. Pers. Soc. Psychol.* 83, 1423–1440. doi: 10.1037/0022-3514.83.6.1423

Ariely, D., Gneezy, U., Loewenstein, G., and Mazar, N. (2009). Large stakes and big mistakes. *Rev. Econ. Stud.* 76, 451–469. doi: 10.1111/j.1467-937X.2009.00534.x

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organ. Behav. Hum. Decis. Process.* 50, 248–287. doi: 10.1016/0749-5978(91)90022-L

Blanco, C. (2014). *Historia de la Neurociencia. El Conocimiento del Cerebro y la Mente desde una Perspectiva Interdisciplinar.* Madrid: Editorial Biblioteca Nueva.

Blasi, A. (1980). Bridging moral cognition and moral action: a critical review of the literature. *Psychol. Bull.* 88:1. doi: 10.1037/0033-2909.88.1.1

Blasi, A. (1983). Moral cognition and moral action: a theoretical perspective. *Dev. Rev.* 3, 178–210. doi: 10.1016/0273-2297(83)90029-1

Boer, H., Fahrenwald, C., and Spies, A. (2018). Professionalization in Teacher education as an interorganizational learning challenge. *Front. Educ.* 3:4. doi: 10.3389/feduc.2018.00004

Colby, A., and Kohlberg, L. (1987). *The Measurement of Moral Judgment: Theoretical Foundations and Research Validation,* Vol. 1. New York, NY: Cambridge.

Cook-Greuter, S. R. (1999). *Post-autonomous ego development; a study on its nature and its measurement* (Doctoral dissertation). Graduate School of Education, Harvard University, Boston, MA, United States.

Creamer, E. G., Baxter, M., and Yue, J. (2010). Preliminary evidence of the reliability and validity of a quantitative measure of self-authorship. *J. Coll. Stud. Dev.* 51, 550–562. doi: 10.1353/csd.2010.0010

Deci, E. L., and Ryan, R. M. (1991). "A motivational approach to self: integration in personality," in *Nebraska Symposium on Motivation, 1990: Perspectives on Motivation* (Lincoln, NE: University of Nebraska Press), 237–288.

Deci, E. L., and Ryan, R. M. (2013). "The dynamics of self-determination in personality and development," in *Self-Related Cognitions in Anxiety and Motivation*, ed R. Schwarzer (New York, NY: Psychology Press), 181–204.

Delors, J. (1996). *Learning: The Treasure Within*. The International Commission on Education for the twenty first century.

Delors, J., Mufti, I., Al Amagi, I., Carneiro, R., Chung, F., Geremek, B., et al. (1996). *La Educación Encierra un Tesoro*. Informe UNESCO de la Comisión Internacional sobre la Educación para el Siglo XXI. Madrid: Santillana/UNESCO.

Erikson, E. H. (1994). *Identity and the Life Cycle*. New York, NY: WW Norton and Company.

Evans, J. S. B. T. (2008). Dual-processing accounts of reasoning judgement and social cognition. *Annu. Rev. Psychol.* 59, 255–278. doi: 10.1146/annurev.psych.59.103006.093629

Flavell, J. (1963). *The Developmental Psychology of Jean Piaget*. New York, NY: Van Nostrand Reinhold Co.

Fodor, J. A. (1983). *The Modularity of Mind*. Cambridge, MA: MIT press.

Ford, R. C., and Richardson, W. D. (1994). Ethical decision making: a review of the empirical literature. *J. Bus. Ethics*. 13, 205–221. doi: 10.1007/BF02074820

Frymier, A. B., and Houser, M. L. (2000). The teacher-student relationship as an interpersonal relationship. *Commun. Educ.* 49, 207–219. doi: 10.1080/03634520009379209

Gendlin, E. T. (1962). *Experiencing and the Creation of Meaning: A Philosophical and Psychological Approach to the Subjective*. Evanston, IL: Northwestern University Press.

Gendlin, E. T. (1969). Focusing. *Psychother. Theory Res. Pract*. 6:4. doi: 10.1037/h0088716

Gendlin, E. T. (1978). *Experiencing and the Creation of Meaning: A Philosophical and Psychological Approach to the Subjective*. Evanston, IL: Northwestern University Press (by arrangement with E. Gendlin.).

Göhlich, M., Novotný, P., Revsbaek, L., Schröer, A., Weber, S. M., and Byung, J. Y. (2018). "Research memorandum: organizational education,"' in *General Assembly of the EERA Network, Track 32 Organizational Education, ECER 2016 in Dublin*.

Goleman, D. (1998). *Working With Emotional Intelligence*. New York, NY: Bantam Books.

Goleman, D. (2008). *Destructive Emotions: A Scientific Dialogue With the Dalai Lama*. New York, NY: Bantam Books.

Grogan, M., and Fahrenwald, C. (2019). "Networks between universities and community organizations in teacher education," in *Organisation und Netzwerke* (Wiesbaden, Springer), 241–250.

Haidt, J. (2001). The emotional dog and its rational tail: a social intuitionist approach to moral judgment. *Psychol. Rev.* 108, 814–826. doi: 10.1037/0033-295X.108.4.814

Hannah, S. T., Avolio, B. J., and May, D. R. (2011). Moral maturation and moral conation: a capacity approach to explaining moral thought and action. *Acad. Manage. Rev.* 36, 663–685. doi: 10.5465/amr.2010.0128

Harvey, O. J., Hunt, D., and Schroeder, H.,. (1961). *Conceptual Systems and Personality Organization*. New York, NY: John Wiley.

Heiskala, R. (2007). "Social innovations: structural and power perspectives," in *Social Innovations, Institutional Change and Economic Performance*, Ch. 3, eds T. J. Hämäläinen and R. Heiskala (Edward Elgar Publishing).

Hughes, J. N., and Cavell, T. A. (1999). Influence of the teacher-student relationship in childhood conduct problems: a prospective study. *J. Clin. Child Psychol.* 28, 173–184. doi: 10.1207/s15374424jccp2802_5

Jack, A. I., Dawson, A., Begany, K., Leckie, R. L., Barry, K., Ciccia, A., et al. (2012). fMRI reveals reciprocal inhibition between social and physical cognitive domains. *Neuroimage* 66, 385–401. doi: 10.1016/j.neuroimage.2012.10.061

Johnson, V. A. (2000). *The Concept of Differentiation as a Contribution to the Psychology of Maturity*. Boston, MA: Harvard University.

Jones, T. M. (1991). Ethical decision making by individuals in organizations: an issue-contingent model. *Acad. Manage. Rev.* 16, 366–395.

Juarrero, A. (2002). Complex dynamical systems and the problems of identity. *Emergence* 4, 94–104. doi: 10.1080/15213250.2002.9687738

Kahneman, D. (2011). *Thinking, Fast and Slow*. Oxford: Macmillan.

Kahneman, D., and Riis, J. (2005). Living and thinking about it: two perspectives on life. in *The Science of Well-Being,* eds F. A. Huppert, B. Kaverne, and N. Baylis (London: Oxford University Press), 285–304.

Kegan, R. (1982). *Evolving Self*. Boston, MA: Harvard University Press.

Kegan, R. (1986). *The Child Behind the Mask: Sociopathy as Developmental Delay. Unmasking the Psychopath*. New York, NY: Norton.

Kegan, R. (1994). *In Over Our Heads: The Mental Demands of Modern Life*. Boston, MA: Harvard University Press.

Kelso, J. A. S. (Ed.). (1995). "Intentional dynamics," in *Dynamic Patterns. The Self-Organization of Brain and Behavior* (London: MIT Press.),136–158.

Koehn, D. (1995). A role of virtue ethics in the analysis of business practice. *Bus. Ethics Q.* 5, 533–539. doi: 10.2307/3857397

Kohlberg, L. (1969). "Stage and sequence: the cognitive-developmental approach to socialization," in *Handbook of Socialization Theory and Research*, ed D. A. Goslin (Skokie, NY: Rand McNally), 347–480.

Kohlberg, L. (1981). *The Philosophy of Moral Development: Moral Stages and the Idea Of Justice (Essays on Moral Development, Vol. 1)*. San Francisco, CA: Harper and Row.

Kohlberg, L. (1984). *The Psychology of Moral Development: The Nature and Validation of Moral Stages.* San Francisco, CA: Harper and Row.

Kohlberg, L., and Mayer, R. (1972). Development as the aim of education. *Harvard Educ. Rev*. 42, 449–496. doi: 10.17763/haer.42.4.kj6q8743r3j00j60

Kohlberg, L., and Ryncarz, R. A. (1990). "Beyond justice reasoning: moral development and consideration of a seventh stage," in *Higher Stages of Human Development*, eds C. N. Alexander and E. L. Langer (New York, NY; Oxford: Oxford University Press), 191–207.

Lahey Laskow, L. (1986). *Males' and Females' Construction of Conflict in Work and Love*. Boston, MA: Harvard University.

Lipman, E. L., Boyle, M. H., Dooley, M. D., and Offord, D. R. (2002). Child well-being in single-mother families. *J. Am. Acad. Child Adoles. Psychiatry* 41, 75–82. doi: 10.1097/00004583-200201000-00014

Loevinger, J. (1966). The meaning and measurement of ego development. *Am. Psychol.* 21, 195–206. doi: 10.1037/h0023376

Loevinger, J. (1976). *Ego Development: Conceptions and Theories.* San Francisco, CA: Jossey Bass Inc.

Meadows, D. (1972). *Die Grenzen des Wachstums. Bericht des Club of Rome zur Lage der Menschheit*. Stuttgart: Deutsche Verlagsanstalt.

Moulaert, F., Martinelli, F., Swyngedouw, E., and Gonzalez, S.,. (2005). Towards alternative model(s) of local innovation. *Urban Stud.* 42, 1669–1990. doi: 10.1080/00420980500279893

Mulgan,. G. (2012). *Social Innovation: What It Is, Why it Matters and How it Can be Accelerated:* Skoll Centre for Social Entrepreneurship, University of Oxford.

Murphy, J. M., and Gilligan, C. (1980). Moral development in late adolescence and adulthood: a critique and reconstruction of Kohlberg's theory. *Hum. Dev.* 23, 77–104. doi: 10.1159/000272541

O'Fallon, M. J., and Butterfield, K. D. (2005). A review of the empirical ethical decision-making literature: 1996–2003. *J. Bus. Ethics* 59, 375–413. doi: 10.1007/s10551-005-2929-7

Orón Semper, J. V. (2018). Educación centrada en el crecimiento de la relación interpersonal. *Stud. Poliana* 37, 481–498. doi: 10.15581/013.20.241-262

Orón Semper, J. V. (2019). *Neuropsicología de las Emociones*. Madrid: Pirámide.

Orón Semper, J. V., and Blasco, M. (2018). Revealing the hidden curriculum in higher education. *Stud. Philos. Educ.* 37, 481–498. doi: 10.1007/s11217-018-9608-5

Orón, J. V. O., Murillo, J. I., and Bernacer, J. (2016). Adolescent emotional maturation through divergent models of brain organization. *Front. Psychol.* 7:1263. doi: 10.3389/fpsyg.2016.01263

Perry, W. G. (1970). *Ethical and Intellectual Development in the College Years*. San Francisco, CA: Jossey Bass (copyright J. Wiley and Sons.).

Pessoa, L. (2008). On the relationship between emotion and cognition. *Nature Reviews. Neuroscience*. 9, 148–158. doi: 10.1038/nrn2317

Pessoa, L. (2013). *The Cognitive – Emotional Brain. From Interactions to Integration.* London: MIT Press.

Peters, R. S. (1966). *Ethics and Education*. New York, NY: Routledge.

Peters, R. S. (1967). "What is an educational process," in *The Concept of Education,* ed En R. S. Peters (London: Routledge and Kegan Pau), 1–23.

Piaget, J. (1962). *The Moral Judgment of the Child*. New York, NY: Collier Books.

Pol, E., and Ville, S. (2009). Social innovation: buzz word or enduring term?. *J. Socio Econ.* 38, 878–885. doi: 10.1016/j.socec.2009.02.011

Polo, L. (1997). *Ética: Hacia una Versión Moderna de Temas Clásicos (segunda)*, Madrid: AEDOS-Unión Editorial.

Polo, L. (2007a). *¿Quién es el Hombre? Un Espíritu en el Tiempo*. Madrid: RIALP.

Polo, L. (2007b). *Persona y Libertad*. Pamplona: EUNSA.

Polo, L. (2012). *Filosofía y Economía*, Pamplona: EUNSA.

Rogers, C. R. (1951). *Client-Centered Therapy*. Boston, MA: Houghton – Mifflin.

Rogers, C. R. (1961). *On Becoming a Person*. Boston, MA: Houghton Mifflin.

Rogers, C. R. (1964). Toward a modern approach to values: the valuing process in the mature person. *J. Abnorm. Soc. Psychol.* 68:160. doi: 10.1037/h0046419

Rogers, C. R., and Dymond, R. F. (1954). *Psychotherapy and Personality Change*. Chicago, IL: University of Chicago Press.

Rolls, E. T. (2014). Emotion and decision-making explained: a précis. *Cortex* 59, 185–193. doi: 10.1016/j.cortex.2014.01.020

Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *J. Pers.* 63, 397–427. doi: 10.1111/j.1467-6494.1995.tb00501.x

Ryan, R. M., and Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development and well-being. *Am. Psychol.* 55, 68–78. doi: 10.1037/0003-066X.55.1.68

Ryan, R. M., and Deci, E. L. (2004). "Autonomy is no illusion: self-determination theory and the empirical study of authenticity, awareness and will Chapter 28," in *Handbook of Experiential Existential Psychology*, eds J. Greenberg, S. L. Koole, and T. PysCznski (New York, NY: Guilford Press), 449–479.

Ryan, R. M., and Lynch, J. H. (1989). Emotional autonomy versus detachment: revisiting the vicissitudes of adolescence and young adulthood. *Child Dev.* 60, 340–356. doi: 10.2307/1130981

Shine, J. M., Breakspear, M., Bell, P. T., Ehgoetz Martens, K., Shine, R., Koyejo, O., et al. (2019). Human cognition involves the dynamic integration of neural activity and neuromodulatory systems. *Nat. Neurosci.* 22, 289–296. doi: 10.1038/s41593-018-0312-0

Simkins, T. (2005). Leadership in education. *Educ. Manage. Administrat. Leader.* 33, 9–26. doi: 10.1177/1741143205048168

Solomon, R. C. (1999). *Business Ethics and Virtue. A Companion to Business Ethics*. (Hoboken, NJ), 30–37.

Sporns, O. (2011). The non-random brain: efficiency, economy, and complex dynamics. *Front. Comput. Neurosci.* 5:5. doi: 10.3389/fncom.2011.00005

Sporns, O. (2014). Contributions and challenges for network models in cognitive neuroscience. *Nat. Neurosci.* 17, 652–660. doi: 10.1038/nn.3690

Thelen, E., and Smith, L. B. (1994). *A Dynamic Systems Approach to the Development of Cognition and Action*. Cambridge, MA: MIT Press.

Trevino, L. K. (1986). Ethical decision making in organizations: A person-situation interactionist model. *Acad. Manage. Rev.* 11, 601–617. doi: 10.5465/amr.1986.4306235

Treviño, L. K., Weaver, G. R., and Reynolds, S. J. (2006). Behavioral ethics in organizations: a review. *J. Manage.* 32, 951–990. doi: 10.1177/0149206306294258

Weber, S. M., Truschkat, I., Schröder, C., Peters, L., and Herz, A. (eds.). (2019). *Organisation und Netzwerke*. Berlin: Springer.

Werner, H. (1948). *Comparative Psychology of Mental Development.* Chicago, IL: Follett Publishing.

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