QTURN WHITE PAPER #1

Socio-Emotional Skills, Quality, and Equity:

The *Multilevel Person-in-Context ~neuroperson* (MPC*n*) Framework

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Contents

This paper is part of a series: White Paper 1 – *Socio-Emotional Skills, Quality, and Equity* (Peck & Smith, 2020b) – provides a translational framework for understanding the key parts of an SEL skill set. White Paper 2 – *Measuring Socio-Emotional Skill, Impact, and Equity Outcomes* (Smith & Peck, 2020a) – provides guidance for selecting feasible and valid SEL skill measures. White Paper 3 – *Realist(ic) Evaluation Tools for OST Programs* – integrates the SEL framework and measures with a pattern-centered approach to both CQI and impact evaluation. White Paper 4 – *Citizen Science and Advocacy in OST* (Smith & Peck, 2020b) – presents an alternative evidence-based approach to improving both the impact and equity of OST investments.

Summary

Evaluation evidence about the relations among children's[1] prior history, engagement in program settings, resulting SEL skill growth, and the ultimately desired transfer outcomes (e.g., agency to succeed in other settings) has been sporadic and fragmented. One reason for this may be that the positivist theory and methodology[2] used by most researchers and evaluators is poorly suited to the formative explanations[3] that guide continuous quality improvement (CQI) processes. As a result, we lack nuanced impact models that address questions about *how* and *how much*, or the information necessary for organizational decision-making. QTurn's Quality-Outcomes Design and Methods (Q-ODM) toolbox (Peck & Smith, 2020) was created to address these fundamental problems in the evaluation of education settings, with a specific focus on out-of-school time (OST; afterschool, child care, drop-in, mentoring, tutoring, etc.) programs.

In this white paper, we introduce a theoretical framework designed to describe the integrated set of mental and behavioral parts and processes (i.e., *schemas*, *beliefs*, and *awareness*) that *are* socio-emotional skills and that *produce* both basic and advanced forms of *agency*. With improved definitions and understanding of SEL skills, and the causes of SEL skill growth, we hope to improve reasoning about programs and policies for socio-emotional supports in any setting where children spend time. Perhaps most importantly, we hope to inform policy decisions and advance applied developmental science by improving the accuracy and meaningfulness of basic data on children's SEL skill growth.

Building from the socio-emotional skills framework presented herein, extension to issues in assessment are covered in QTurn's White Paper #2, *Measuring Socio-Emotional Skills in Out-of-School Time Settings* (Smith & Peck, 2020a). The extension of SEL theory and measurement to CQI cycles and impact evaluation is covered in QTurn's White Paper #3, *The Quality-Outcomes Design and Methods (Q-ODM) Toolbox* (Peck & Smith, 2020). Finally, in White Paper #4, *Citizen Science for Out-of-School Time Evidence and Advocacy* (Smith & Peck, 2020b), we describe an alternative pathway for improving evidence about both the impact and equity of OST investments.

I. Introduction

A recent review found over 100 different frameworks describing socio-emotional learning (SEL) supports and skills (Berg et al., 2017). This cacophony of words and concepts undermines the shared understanding and language necessary for coordinated action, both within organizations doing the work and among evaluators producing the evidence.[4] Confusion about what constitutes SEL skill, and how "skill" may or may not differ from many other concepts – such as, competence, abilities, traits, attitudes, and mindsets – undermines scientific progress and slows policy processes that rely on at least approximate consensus around shared meanings and objects of measurement.

Mismatches between what we think should be taught and assessed, what we actually teach and assess, and the actual nature of SEL skills, translate into wasted time and resources. This is perhaps nowhere more evident than in education fields, where the obvious injustice of ignoring SEL skills (e.g., how individual students, teachers, and administrators think and feel about their own daily situation) is rarely addressed by most SEL tools and methods. Many perfectly well-skilled students and staff do not like their situation, but confusion about SEL skills prevents solutions to this fundamental SEL problem. For example, curriculum conversations may feel productive while creating misunderstandings that are exacerbated by poor measurement choices and misspecified theoretical, statistical, and measurement models. The resulting pattern of failure to tangibly improve the quality of instructional services at scale, and deliver obvious and visible improvements in child outcomes, is not surprising, but it can be addressed.

In this white paper,[5] we draw upon a translational framework (Peck, 2007; Peck et al., 2019; Roeser et al., 2006; Roeser & Peck, 2009; Smith et al., 2016) to define SEL skills and describe how to support children and adults to grow them. This sorting out of the parts of SEL skill – the objects of measurement – can also show us how to measure real changes in SEL skills, how to measure the critical qualities of SEL supports, and ultimately, how to model equity effects and the impact of educational interventions on SEL skill growth. In subsequent white papers, we take up the related issues of selecting measures and evaluation designs necessary to detect impact and equity effects. Throughout this work, we hope to clarify how traditional psychometric and counterfactual ways of thinking about how to measure and evaluate impacts are also part of the problem we are trying to solve.

The Multilevel Person-in-Context~*neuroperson* (MPC*n*) framework (Peck et al., 2019; Smith et al. 2016) clarifies the nature, functioning, and growth of SEL skills within a cascade of causal effects that flow into and through the individuals who participate in OST settings. Importantly, it achieves this clarity by relying minimally on inherently ambiguous terms like emotion, motivation, and cognition.[6] For example, the MPC*n* framework describes:

a. the mental (or psychological) parts and dynamics that govern SEL skill growth (e.g., what happens in individuals' mind/brain before, during, and after SEL skill growth)

b. how different types of *behavioral* SEL skill come from more fundamental *mental* SEL skills

c. the need to consider the baseline SEL skills (e.g., attachment styles) and prior stress/trauma experiences of children and adults when they enter a program setting

d. the causal pathways from baseline skills, through point-of-service (POS) quality, to SEL skill growth, and ultimately, transfer outcomes in multiple settings

e. SEL "equity effects" in programs where vulnerable children experience growth in SEL skills similar to or exceeding their more typically-developing peers

The MPC*n* framework provides a generic theory of change applicable to most childhood settings, including the OST field, which is of specific relevance to our work. Figure 1 shows the nesting of children and program offerings within organizations, communities, and regions. The arrows linking each context indicate that quality in a given context (e.g., the community) influences the quality of settings nested within it (e.g., organizations). For example, in communities with a larger population of trained youth workers, organizations will find it easier to hire more qualified staff, and in organizations with higher wages where qualified staff are retained, more youth will experience high-quality instruction.

> *Children's past experiences and pre-program SEL skills must be understood for staff to successfully translate curricula into high-quality practices that engage children's SEL skills at program entry.*

Figure 1 shows a multilevel cascade of causal effects across levels of context and highlights the extent to which causal processes at the POS (e.g., the effects of staff practices on youth engagement) depend on program staff enacting different roles at different levels of context. For example, program managers and staff *plan with data* during team meetings at the organization level, and then staff enact intended improvement practices at the POS level.

The reciprocal interactions between staff and youth at the POS are at the center of this cascade of causes and effects. Where staff practices at the POS are of sufficiently high quality during each program session, children's mental and behavioral SEL skills are engaged and grow. As children move from OST settings to other social contexts (i.e., the near transfer of SEL skills to family, school, peers, and the far transfer of SEL skills to subsequent life course achievements, such as early adulthood health, education, and employment), they apply and further develop their growing SEL skills during the many personal and social challenges of daily living. Figure 1 also suggests that children's past experiences and pre-program SEL skills must be understood for staff to successfully translate curricula into high-quality practices that engage children's SEL skills at program entry.

Figure 1. Multilevel Person-in-Context~neuroperson (MPCn) Theory of Change.
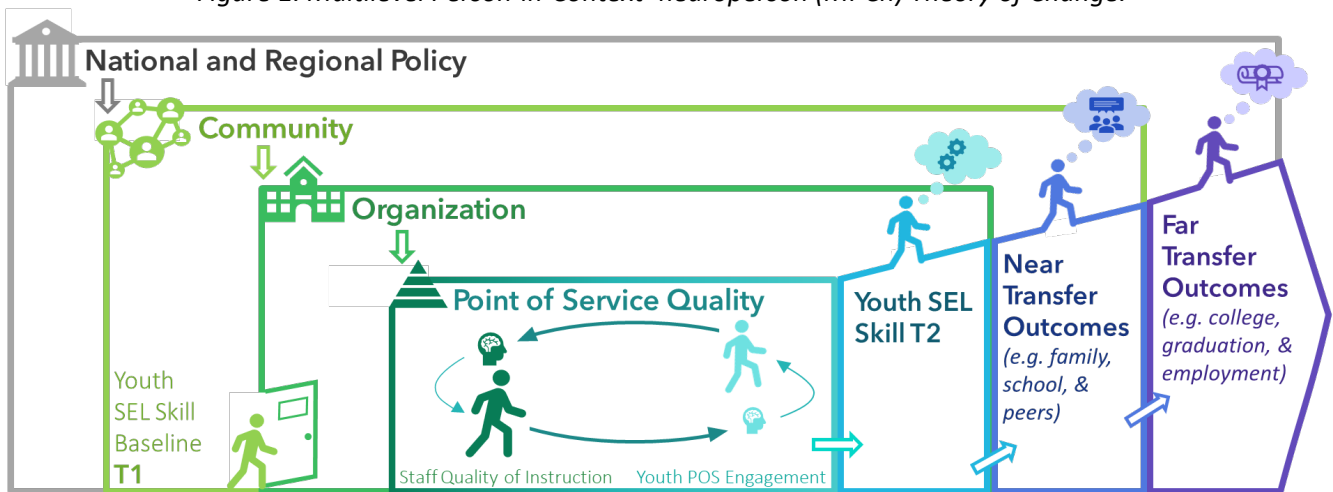
SEL skills have a compounding effect on many developmental outcomes that has been described as *dynamic complementarity* (Heckman, 2007); that is, SEL skills beget other types of skills. Specifically, the ability to use SEL skills (i.e., *self-regulation*, in its general sense) makes lots of good things happen. Children and adults operating at high levels of SEL skill can more easily get on to the business of learning what the context has to offer, rather than being triggered by, and/or exiting, that context. Staff in educational settings that are "ready for children" understand that children and adults enter their classrooms with a wide range of background experiences, and it is the business of educators to directly address those social and emotional needs and strengths in each moment. Ignoring the background experiences of children and adults, and how they feel in the moment, perpetuates inequity because people operating at high socio-emotional skill levels tend to more easily engage task content and corresponding relationships, whereas those operating at lower SEL skill levels are typically less able to productively engage tasks and/or relationships that are critical for learning.

II. The Neuroperson

In Figure 1, the icons depicting a brain between staff and youth behaviors at the POS indicate that mental skills are causes of behavior. For example, encouraging children to plan how they will complete an activity requires forethought on the part of staff and prompts youth to devote attention to the task, set goals, and solve problems. Figure 2 represents a close-up of these mental processes and their relation to behavior; that is, it depicts the neuroperson part of the MPC*n* framework,[7] simplified and tuned for use in OST settings (but applicable to *all* other childhood settings).

We use the term *neuroperson* to emphasize how SEL skills can be defined and understood in terms of several mental parts and processes characterizing the human brain. As shown in Figure 2, these qualitatively different parts of mental skills are centered in different regions of the brain (i.e., the limbic system, the neocortex, and the prefrontal cortex) and have different implications for the nature and growth of SEL skills. For simplicity, we refer to *Schemas*, *Beliefs*, and *Awareness*.[8] Similar to dual-process[9] approaches to psychological functioning (e.g., Deutsch & Strack, 2006; Hofmann et al., 2009; Kahneman & Frederick, 2007), these three terms denote three different information storage and processing systems typical of all developing humans, each of which has been described in detail within multiple clinical and experimental literatures (Berntson & Cacioppo, 2003; Bowlby, 1988; Derryberry & Tucker, 1991; Epstein, 2003; Lewis & Todd, 1997; MacLean, 1990; Roeser & Peck, 2009).

Figure 2. The Neuroperson Model.
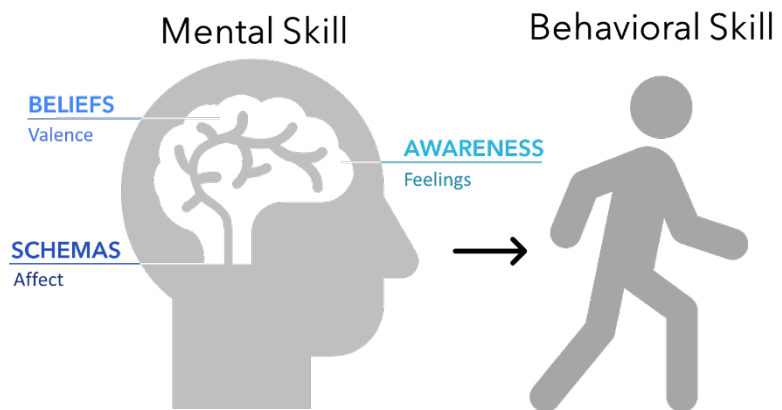
Rather than referring to the neurobiological parts and processes that we think of as emotion, we focus instead on three different ways emotions relate to schemas, beliefs, and thoughts: Emotions influence (a) schemas by imprinting them with affective charges, (b) beliefs by imprinting them with valences, and (c) thoughts by imprinting them with feelings.

Figure 2 also reflects a somewhat atypical use of the emotion concept. Rather than referring to the neurobiological parts and processes that we think of as *emotion* (e.g., physiological processes mediated by peptides, like oxytocin, and neurotransmitters like dopamine, epinephrine, and serotonin), we focus instead on three different ways emotions influence, and are influenced by, schemas, beliefs, and thoughts. Specifically, emotions influence (a) schemas by imprinting them with *affective* charges, (b) beliefs by imprinting them with *valences*, and (c) thoughts by imprinting them with *feelings*. Conversely, schemas, beliefs, and thoughts

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influence emotions only when *activated* and according to, respectively, their affective charges, valences, and feelings. In this way, we hope to clarify how all SEL skills involve emotional energies of some sort, whether or not they are acknowledged as such by practitioners or researchers (e.g., belief measures are often treated as if they have nothing to do with emotion). In our view, activating any belief (or schema) is likely to cause an emotional response, whether or not that response is noticed consciously as a feeling.

Schemas, beliefs, and awareness are the raw material from which all mental SEL skills (by whatever name) are constructed; that is, when considered together, they *are* mental skills. In addition, Figure 2 distinguishes explicitly between mental skills and *behavioral skills*, helping us to focus on the extent to which mental skill growth promotes behavioral skill growth. Finally, the neuroperson model integrates and extends previous SEL frameworks by clarifying two different kinds of human agency (described below) that result from the integration of mental and behavioral skills, focusing especially on children's emerging capacity to *intentionally* author their own development.

Schemas

We use the term s*chema* to describe how information (e.g., knowledge, memory) about the self and world is stored, organized, and processed in a particular area of the brain: the limbic system. The term schema refers to non-verbal, non-symbolic, affectively-charged representations of the self and world (Peck, 2007; Peck et al., 2019),[10] as in *attachment schemas* (Bowlby, 1988). As relatively-enduring parts of the person, attachment schemas act like *set points* for the way children initially engage in and respond to program offerings; for this reason, we refer to them as *basic regulation* skills. For example, some youth enter OST programs having had adverse childhood experiences (Carlson et al., 2019; Merrick et al., 2018) that can often result in poor basic regulation skills. 'Meeting children where they are at' means being sensitive to their current thoughts and feelings and understanding that they may be emotionally triggered in ways that make it difficult to be mentally present and engaged in the current program offering.

> *Attachment schemas act like set points for the way children initially engage in program offerings; for this reason, we refer to them as basic regulation skills.*

Schemas are formed and elaborated automatically, especially during child-caregiver interactions during infancy and early childhood. Their behavioral implications have been described in terms of four primary *attachment styles* (i.e., secure, insecure [anxious, or avoidant], and disorganized). Roughly speaking, this means that the "emotions" generated during social interactions are imprinted onto the schema for that person in the form of affective charges in long-term memory. Future encounters with that person automatically activate the schema, such that relevant memories and feelings are more *accessible* to both the behavioral response system and conscious awareness.

Past experiences that were stored in long-term memory as schemas are typically activated automatically in response to environmental triggers, without the need for conscious awareness or planning. The schemas children develop tend to be specific to particular people but can also reflect social roles (e.g., caregiver, teacher), types of people (e.g., a "good" person), events (e.g., bedtime),

objects, and situations. Where they encounter a person or situation with which they have had past experiences, children's schemas tend to unconsciously influence their thoughts, feelings, and behavior. For example, if a child's schema for "caregiver" was formed through past encounters with a negligent caregiver, future encounters with caregivers may evoke thoughts, feelings, and behaviors reflecting past trauma. Conversely, if early caregiver experiences were generally positive, this may make it easier for the child to quickly build trust and relationships with other adults.

Including schemas as a core feature of the MPC*n* framework is intended to help practitioners understand and address the current effects of children's (as well as practitioners' own) past experiences. For practitioners, a critical issue is that children's schemas operate very quickly (i.e., in milliseconds), often translating an initial environmental cue (i.e., a trigger) into strong emotional and behavioral responses that may never enter the child's conscious awareness. This means, among other things, that expecting children to consistently control their feelings and behavior, and reacting critically when they do not, is tantamount to blaming and punishing children for things that have happened *to* them (and that may take them years to understand and manage). Learning to recognize and manage such emotional episodes is a major challenge for both children and adults, but understanding the nature and functions of schemas, as core elements of everyone's self-system, can help smooth and accelerate that learning process.

Beliefs

Basic beliefs differentiate and integrate across time to form higher-order belief systems, such as attitudes that combine to form plans.

We use the term *belief* to describe how information (e.g., knowledge, memory) about the self and world is stored, organized, and processed in a second area of the brain: the neocortex. The term belief refers to verbal-symbolic representations of the self and world.[11] Basic beliefs (i.e., *beliefs in* and *beliefs about* a thing; Fishbein & Raven, 1962) are the most fundamental unit of information in the neocortex and are stored as long-term memory. Basic beliefs differentiate and integrate across time to form higher-order belief systems, such as attitudes (i.e., a belief in a thing integrated with a belief about the goodness or badness of that thing) that combine to form goals that combine to form plans. For example, goals can be defined as a system of beliefs about some end-state (e.g., the goal to graduate can be described in terms of a vast range of beliefs about the self and world, such as 'graduating requires good grades' and 'good grades require studying'). During childhood, and beyond, beliefs are formed *automatically* during social interactions but, also, *intentionally* during self-reflection (particularly, during and after adolescence).

Just as attitudes, goals, and plans can be viewed as increasingly complex belief systems, there are many other mental constructs that can be defined in terms of belief systems (e.g., values, opinions, mindsets, self-concepts, social identities). From an MPC*n* framework perspective, most (and usually all) of the terms for mental skills used by typical SEL frameworks and available SEL measures can be defined in terms of beliefs about the self and world. For example, both perspective-taking (e.g., the ability to distinguish another person's perspective from one's own perspective) and theory of mind (e.g., the ability to understand that other people have their own intentions and feelings) can be defined in terms of *beliefs about* others' goals, intentions, and feelings.

In contrast to schemas (which are relatively stable and change mainly as a result of many direct and repeated social interactions), beliefs are *relatively* malleable and can be modified as a result of even a single indirect social interaction (e.g., vicarious learning, or learning by observing something that happens to someone else) or simply by reflecting on previous or anticipated social interactions. Including beliefs as a core feature of the MPC*n* framework is intended to help practitioners address things like children's specific subject-matter knowledge (e.g., what youth need to know to complete a homework assignment) and more general personal and social identity issues (e.g., goals, values, self-concepts, self-efficacy, and social roles).

Also, in contrast to the "affective" information that is part of schemas (i.e., we use the term *affect* where referring to the emotional-state information stored in schemas), beliefs are characterized by positive and negative "valences" (i.e., we use the term *valence* [or *evaluative*] where referring to the emotional-state information stored in beliefs). This means that the "feelings" generated during interactions with the self and world *can be* encoded into belief systems in the form of *beliefs about the goodness or badness* of features of the self and world. Future encounters with similar features of the self and world will tend to automatically activate those valenced beliefs, such that relevant memories and feelings are more accessible to both the behavioral response system and conscious awareness.

The mistaken conceptualization of SEL mental skills solely in terms of valenced beliefs about the self and world was one of our primary motivations for selecting a framework that places belief systems within the larger context of the entire mental life of a person, characterized by schemas and awareness in addition to beliefs. It is important to understand that both schemas and beliefs tend to (a) be relatively enduring, (b) exist and function outside of conscious awareness, and (c) influence feelings and behavior *only* after being *activated* (e.g., by an environmental trigger or self-reflection). This means, for example, that modifying children's schemas and beliefs generally requires practitioners to prompt and sustain their activation during program activities. In addition, it is also important to understand that beliefs are more easily described, formed, accessed consciously, and modified than schemas. This means, for example, that beliefs tend to be easier targets for modification than schemas, which may help explain why beliefs often become the sole focus of intervention efforts.

The mistaken conceptualization of SEL mental skills solely in terms of beliefs was one of our primary motivations for selecting a framework that places belief systems within the larger context of schemas and awareness.

Awareness

The term *awareness* (or *executive functions*) refers specifically to consciously controlling the focus of awareness in relation to immediate thoughts and feelings (i.e., *currently-activated* schemas and beliefs). Executive functions (e.g., shifting and focusing awareness) operate on thoughts and feelings to provide the basis for all forms of self-reflection (e.g., secondary appraisal,[12] planning, and the effortful control of impulses). In this view, executive functions are the mental skills that allow individuals to participate *intentionally* in their own learning and development.

The distinctions between (a) awareness and both (b) relatively-enduring beliefs and schemas and (c) immediate thoughts/feelings can be clarified by thinking about how the hundreds of beliefs and schemas that we have accumulated across our lifespan tend to remain unconscious, in long-term memory, most of the time. If any of these beliefs or schemas become activated, they are re-represented in working memory as *potentially* consciously-accessible thoughts and feelings. In other words, the subset of currently activated beliefs and schemas, in any given moment, reflect only a tiny proportion of the total set of beliefs and schemas that could potentially be activated in any given moment. Immediate thoughts and feelings reflect only currently-activated beliefs and schemas and are the *contents* of the *stream of consciousness*. Awareness is the *process* of focusing consciously on only some of the thoughts and feelings available in the stream of consciousness. In other words, activated thoughts and feelings do not necessarily become the focus of awareness. Activated but nonconscious thoughts and feelings are also referred to as impulses and can be a major influence on behavior.

Including awareness as a core feature of the MPC*n* framework is intended to help practitioners address the most developmentally-advanced form of self-regulation: *intentional agency*. Unfortunately, the many meanings assigned to the term *agency*, both within and across disciplines, has caused much confusion. By distinguishing awareness from both beliefs/schemas and thoughts/feelings, we can define the most advanced form of agency in terms of the dynamic relation between awareness and thoughts/feelings. Consciously shifting and sustaining the focus of awareness on selective subsets of thoughts and feelings allows individuals to actively curate their own identity; that is, to selectively activate, create, elaborate, and encode into long-term memory some beliefs but not others.

When children and adults manage their own thoughts and feelings – for example, by consciously deciding what to think, feel, or do – they have achieved a highly advanced *state* of self-regulation that we refer to as intentional agency. These states tend to be fleeting and infrequent, but the advanced regulation skills that influence them are malleable; that is, they can be learned, strengthened, and practiced more frequently.

In our view, this kind of conscious participation in mental processing is necessary for achieving the highest forms of human self-regulation. In line with the bourgeoning literature on mindfulness, practitioners will benefit from a deeper understanding of awareness and its centrality to all forms of SEL skill growth. In particular, we hope the MPCn framework will motivate practitioners to spend more time helping children to develop their awareness skills and apply them intentionally to reflecting, evaluating, planning, problem solving, inhibiting and redirecting impulses, and participating consciously in their own personal and social identity development.

Awareness is the process of focusing consciously on thoughts and feelings.
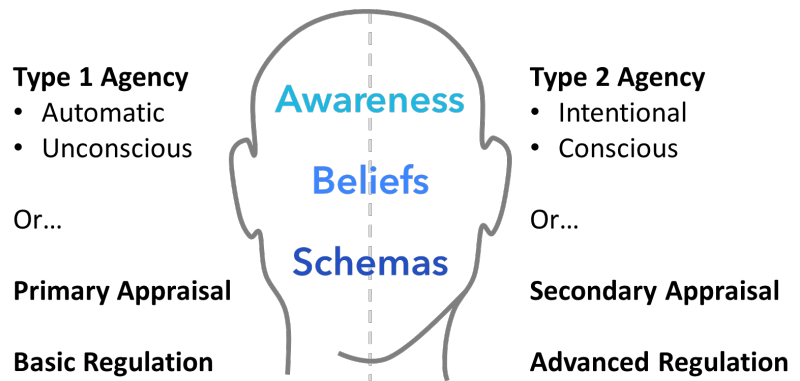
Agency

The concept of human agency can be described as the ability to act on the self or world in order to change the self or world. The MPC*n* framework refers to two types of agency: automatic and intentional (see Figure 3). All children and adults exhibit *automatic agency* (Type 1). Type 1 Agency is defined as a *primary appraisal* process; that is, settings are interpreted automatically and unconsciously, based on pre-existing beliefs and schemas. The integrated schema and belief systems that children bring to a setting provide a set point for their *basic regulation* (i.e., Type 1 Agency) skills. The behavioral consequences of these habitual ways of responding can often be detected by external observers, as when a child appears to be interested and at ease with the setting versus bored or agitated.

Blair and Raver (2012) described the automatic, primary-appraisal processes characterizing Type 1 agency as "less effortful processes associated with stress physiology, emotional arousal, and attention focusing" and "reactive, highly automatic, and phylogenetically older styles of response" (p. 648). In practical terms, having adaptive basic regulation skills means that children's beliefs and schemas tend to be triggered in a good way, such that they don't have to think much about applying their skills because they just come out effortlessly. This is often defined as mastery of a skill, and the more that a setting engages the child's current skill set (i.e., the setting is ready for the person), the more easily adaptive beliefs and schemas are automatically activated, which leads to more frequent mastery experiences and skill growth.

Figure 3. Type 1 and Type 2 Agency.

Type 1 Agency
- Automatic
- Unconscious

Or…

Primary Appraisal

Basic Regulation

Awareness

Beliefs

Schemas

Type 2 Agency
- Intentional
- Conscious

Or…

Secondary Appraisal

Advanced Regulation

In contrast, *intentional agency* (Type 2) involves the more subtle and intermittent process of consciously shifting and focusing awareness among immediate thoughts and feelings, as in self-reflection and secondary appraisal (e.g., reflecting on how current thoughts fit with goals and values). Intentionally focusing awareness on specific thoughts and feelings (e.g., reflecting on behavioral options) occurs best when children (a) have had their basic regulation needs met (e.g., they are calm, focused, and understand the task content) and (b) are supported by staff (e.g., to reflect on task content, past experiences, future plans, attributed meanings, and cause-effect relations as they emerge during POS activities). However, even in the best of circumstances, strengthening the ability to focus awareness requires practice and patience. Further, because a person's focus of awareness cannot be directly observed by others, children must be taught to recognize, monitor, and regulate their own focus of awareness (e.g., notice when their mind has wandered and intentionally refocus).

Immediate thoughts and feeling are the contents of the stream of consciousness.
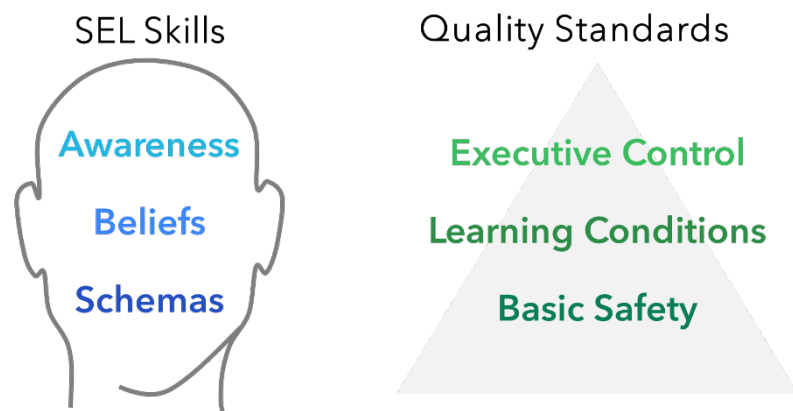
For OST (and all other) educators, these two types of agency are recognizable in the philosophical purposes of programs and curricula. Type 1 Agency is reflected in standards for program and classroom quality – typically discussed in terms of intrinsic motivation – that are designed to promote feelings of safety and interest in the setting and its content. Type 2 Agency, which is especially important for adolescents, is reflected in definitions of quality that emphasize voice, autonomy, planning, reflection, mindfulness, and other forms of *advanced regulation*.

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III. SEL History, Quality, and Equity

Socio-emotional learning is an iterative process of growing basic and advanced self-regulation skills that promotes children's agency. A person's *SEL history* reflects all of the things the person has experienced and stored in long term memory, including intense positive and negative emotional experiences. These emotion-laden links to ongoing experience are stored in memory as valenced beliefs and affectively-charged schemas, and re-activating these beliefs and schemas (e.g., via environmental triggers or self-reflection) influences ongoing thoughts, feelings, and behavior. Being sensitive to each and every child's schemas and beliefs is particularly important where serving children who have experienced chronic stress or trauma. These children are likely to respond unintentionally to setting features, in ways that can be misunderstood. This is the case, for example, when a well-studied test taker is so fearful of testing conditions that they make more mistakes than usual. The at-ease state of basic psychological safety has not been achieved. OST educators can benefit from guidance on practices that are responsive to children's specific SEL histories; such as, acknowledging children's thoughts and feelings; being supportive and responsive but not intrusive or dismissive; and helping children express what their current feelings and prior experiences mean for their ability to engage.

Figure 4 presents the alignment of widely shared standards for *SEL quality* in the OST field with the parts of *SEL skill*. In the OST field, program quality standards are already designed to activate the parts of SEL mental skill that produce SEL behavioral skills. Settings that activate children's secure attachment schemas and personal goals, at the "first look" or on the "second take," are much more likely to promote engagement and skill learning. This is just a different way of saying that high-quality settings cause positive development by responding to children's unique SEL skills and histories.

Figure 4. SEL Skills and SEL Quality Standards.

SEL Skills
- Awareness
- Beliefs
- Schemas

Quality Standards
- Executive Control
- Learning Conditions
- Basic Safety

Finally, we use the term *SEL equity* where referring to situations in which the SEL quality of OST contexts has been improved to support children who have had difficult SEL histories. Because SEL skills are critical learning skills, they have a compounding effect on many developmental outcomes (e.g., academic achievement). This process is called dynamic complementarity (Heckman, 2007), meaning SEL skills beget other types of skill. Both how well a setting scaffolds children's existing SEL skills, and how much they learn to manage those skills autonomously in that setting, matter decisively for SEL skill development and both the near and far transfer of these skills to other life settings. Although there are many ways to define and operationalize the term equity, we use a relatively generic working definition of *SEL equity effects* in our impact models: Equity effects occur where children who enter a setting with low SEL skills grow those skills at the same or higher rates than their higher-skilled peers. Equity effects also occur where children who enter a setting with higher SEL skills retain or increase those skills over time (i.e., the setting does not undermine their skills).

IV. Conclusions

Focusing on schemas, beliefs, awareness, and agency – in contrast to terms like cognition, emotion, and motivation (which tend to be ambiguous) – draws attention to, and helps demystify, some of the key challenges faced by OST (and all other) educators, such as: (a) how to understand and respond to children (and adults) who have had adverse life experiences and whose corresponding attachment schemas are triggered while participating in OST services (creating basic regulation issues), (b) how to understand the bulk of terms used in the many SEL frameworks as different words (e.g., knowledge, mindsets, values) for the same things (i.e., beliefs about the self and world), and (c) how to understand the critical role that conscious awareness plays in promoting the highest forms of human agency (e.g., allowing youth to become intentional authors of their own identity and development). Harmonization of these neuroperson systems in pursuit of life goals (e.g., developing an integrated identity, graduating from school, and keeping a good job) can be viewed as the main point of focusing on SEL skill growth.

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End Notes

[1] For simplicity, we generally use the term *children* where referring to children and youth, ages 5 to 18.

[2] We refer to variable-centered theory and methods, in general, and generalized linear modeling strategies in particular (e.g., ANOVA, regression), as *positivist* theory and methodology.

[3] *Formative explanations* describe the specific causes and effects characterizing the dynamic interactions among the objects of study (e.g., how different kinds of staff behavior at the point of service are expected to promote or undermine different kinds of child mental and behavioral engagement at the point of service) as they apply to specific individuals (e.g., staff person A in relation to child B during program-offering activity C).

[4] Given the extent of diversity across SEL frameworks, Jones et al. (2019) developed resources to help stakeholders understand the unique strengths of different frameworks as well as the alignment between core elements of these different frameworks. The general conclusions from this work are (a) there is currently no single consensus framework that is obviously more scientifically or practically valid than any or all of the others, and (b) the use of the same terms by different frameworks where presumably referring to different things (i.e., jingle fallacies), and the use of different terms by different frameworks where presumably referring to the same things (i.e., jangle fallacies), are abiding challenges faced by stakeholders charged with making funding, evaluation, training, performance, measurement, and analysis decisions.

[5] The material summarized in this white paper draws heavily from an open source *working paper* by QTurn (Peck, Smith, & Smith, 2019). The working paper provides more detailed definitions and discussion of the specific terms and concepts summarized here (many of which may sound familiar but may not correspond to a given disciplinary usage) and is accessible at: http://www.qturngroup.com/MPCn.

[6] The inherently ambiguous meaning of terms like emotion, motivation, and cognition is described in many places (e.g., Baars, 1986; Barrett, 2006; Roeser et al., 2006). We describe, below, how we use more specific terms where referring to particular mental phenomena that are usually described generally in terms of emotion and cognition.

[7] The neuroperson part of the MPC*n* framework (see Figure 2) is a practical simplification of the more detailed Basic Levels of Self (BLoS) model (Roeser et al., 2006; Roeser & Peck, 2009).

[8] The BLoS model uses similar but additional terms mapped onto to a more nuanced description of brain systems (Peck, Smith, & Smith, 2019; Roeser et al., 2006; Roeser & Peck, 2009).

[9] Dual-process (or, dual-systems) approaches to psychological functioning typically contrast a relatively-automatic, fact-acting nonconscious experiential system with a relatively-controlled, slow-acting, conscious rational system (e.g., Epstein, 2003; Kahneman & Frederick, 2007; Lieberman, 2003; Metcalfe & Mischel, 1999).

[10] The schema system in the neuroperson model corresponds to what we have described elsewhere as the iconic representation system (Peck, 2007, 2016, 2018; Peck et al., 2019; Roeser et al., 2006; Roeser & Peck, 2009; Smith et al., 2016) and is similar to Barnard et al.'s (2007) *implicational meaning* system, Epstein's (2003) *experiential* system, Deutsch and Strack's (2006) *impulsive* system, Kahneman & Tversky's (1973) *intuitive* system, Bowlby's (1988) *working model* system, Baldwin's (1992) *relational schema* system, and Izard's (2009) *emotion schema* system.

[11] The belief system in the neuroperson model corresponds to what we have described elsewhere as the symbolic representation system (Peck, 2007, 2016, 2018; Peck et al., 2019; Roeser et al., 2006; Roeser & Peck, 2009; Smith et al., 2016) and is similar to Barnard et al.'s (2007) *propositional meaning* system, Epstein's (2003) *rational* system, Deutsch and Strack's (2006) *reflective* system, Kahneman & Tversky's (1973) *reasoned* system, Kosslyn & Pomerantz's (1977) *conceptual* system, Bruner's (1964) *symbolic* system, and Schultheiss's (2001) *verbal-symbolic* system.

[12] We use the term *primary appraisal* where referring to the first 300-400 milliseconds of the brain's processing of incoming sensory stimuli (i.e., before the effects of the stimuli can become objects of conscious awareness), and we use the term *secondary appraisal* where referring to the conscious processing of incoming sensory stimuli (and associated information) that becomes available to conscious awareness approximately 500 milliseconds after the initiating stimuli.