Research Article

Conceptualising self-reflexive practice as transformational competence: Exploring relationships and relatedness in a fourth industrial revolution technological environment

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ABSTRACT

In the author's exploration of the literature, little seems to be known regarding the potential value of self-reflexive practice in exploring the fourth industrial revolution (4IR) and its related phenomena. The thesis is presented in narrative format and based on personal experience and insights, supported by a non-systematic review of the literature on self-reflexive practice and the 4IR. This perspective argues that one of the most impactful transformational competences in the context of the 4IR, is arguably what is known as self-reflexive practice (SRP). Through this practice we elucidate our conscious and unconscious assumptions and orientations towards the 4IR and associated phenomena. The aim of this article was to highlight the importance of self-reflexive practice as a critical skill for navigating the complexities and challenges presented by the Fourth Industrial Revolution. In this article SRP is conceptualised as the critically informed stance of reflexive dialogue with the self, regarding conscious and unconscious realities. It is argued that the value of SRP lies in its capacity to a) foster critical thinking, b) manage paradoxes, dilemmas and complexities that are characteristic of the 4IR, and c) create psychological "containing spaces" for complexity, ambivalence, and ambiguity. Thus, reflexivity as a way of being, could help us reshape and reorient how we relate to the 4IR and enable practitioners to learn from experience (through deep reflection) about themselves, their work and the way they relate..
Keywords: Critical thinking; Fourth industrial revolution (4IR); Reflexivity; Relatedness; Self-reflexive practice

1. Introduction

We continue to witness seismic changes in the modern world of work. The one distinguishing element is that organisations are being increasingly judged based on the quality of their relationships – with their workers, their customers, and their communities including their impact on society at large, transforming them from *business* enterprises into social enterprises[1]. Advances in artificial intelligence (AI) and new communication technologies are changing not simply how work gets done, and who does it, but also how it influences society[2]. This requires business leaders to listen, to collaborate and to engage more than ever before. Even more critically, however, they are expected to reflect and to make time to think as well.

The purpose of reflection and self-reflexive practice in particular, is to help individuals, groups and organisations to become more effective. Efficacy and competence are created through a trifecta of actions,

namely, the raising of interpretive awareness (enhanced understanding), the ability to make informed decisions and then to engage in informed actions. It is not always easy to find reflective spaces in contemporary organisations. The acts of thinking and reflection are not always recognised as work. Let alone the work of working with the organisation in the mind. Little is known about the potential role self-reflexive practice could play in exploring relationships, relatedness and future transformation skills competence from a socio-analytic stance within the context of the fourth industrial revolution (4IR).

The aim of this perspective is to explore the value of self-reflexive practice as potential transformational competence, as a method of inquiry in the context of the 4IR. This perspective argues that one of the most impactful and fundamental transformational competences in the uncertain, complex and ambivalent context of the 4IR, is arguably the skill and method of self-reflexive practice. The 4IR generally refers to the revolutionising of work, the workplace, and the meaning of work, through the digital and technological transformation of society in the 21st Century[3-5]. Technologies such as Robotics, Artificial Intelligence (AI), System Dynamics (SD), and the Internet of Things (IoT) are increasingly merging with human lives in the form of human-machine, but also machine-machine interaction[6]. This blurring of lines between the physical, digital, and biological spheres[6], is resulting in an upheaval in technology which brings its own set of challenges. Despite these challenges, it should be noted that this technological revolution also provides us with an opportunity to harness the positive developments of this radical societal transformation. One way of exploring these opportunities is by consciously and consistently applying self-reflexive practice.

This reflection is presented in the form of a *narrative review*, which is essentially the description of a topic of interest[7]. This narrative review is informed by the author's personal experience and insights, supported by a non-systematic review of the literature on self-reflexive practice and the 4IR[8], as well as research which has been conducted from a socio-analytic stance. Socio-analysis studies human and social phenomena from a systems theory and psychoanalytic perspective[9]. The non-systematic review of the literature was directed by the following steps[10]:

a) Planning phase: The steps involved, firstly, framing the research question; and determining the applicability of the review to the study. This assessment was based on several questions, including, "Has the topic been studied by different scholars?" and "How has the understanding of the topic and its application evolved?"

b) Searching and mapping phase: The steps included, deciding on the inclusion and exclusion criteria. Then, identifying relevant publications for the study. Conducting electronic searches with key words, for example, reflexivity, self-reflexive, self-reflexive practice, socio-analysis, systems psychodynamics, Fourth industrial revolution (4IR). The search ultimately generated 255 relevant sources. These were reduced to 83 during the elimination process. Sources were selected based on the title and abstract of the source. Thus, there was also a preliminary assessment of the quality of the material, for example, by asking: "How has SRP been studied in the past, and in which disciplines and settings?" "What methods have mostly been used?" "What were the results?"

c) Appraisal phase: During this phase, data were formally extracted from selected sources. This was done to also develop "codes and themes". Final selection was based on inclusion and exclusion criteria.

d) Synthesis phase: Here, I contrasted different paradigms and research settings in how they conceptualize the nature and value of SRP. Both similarities and differences were explored and both quantitative and qualitative studies were considered. Finally, I also considered the principles of pragmatism (value), pluralism (multiplicity), contestation (difference) and reflexivity (deep structured reflection).

e) Recommendation phase: This is essentially the findings and discussion section. Findings are presented and interpreted[10]. Thus, I searched, appraised, synthesised and analysed the data, drawing conclusions. These reflections have implications for diverse social and other environments, for example, for higher education, educators, and organisations in general, but also on an individual level for psychologists and coaches.

In this article, the primary aim is to propose and expand on the value of self-reflexive practice within the context of the mechanics and dynamics of the 4IR. Firstly, I create context by focusing on the nature and implications of the 4IR. Secondly, I situate my conceptual understanding of self-reflexive practice as fundamental competence and skill to explore one's relationship and relatedness to the 4IR from a socio-analytic stance. Finally, I argue in favour of using self-reflexive practice by exploring its value as a conceptual tool in the theoretical context of socio-analysis.

2. Literature review

In the next section, a non-systematic review of the literature is presented. This discussion will include the nature and implications of the 4IR, the construct of self-reflexive practice as well as an exploration of the constructs of relationships and relatedness from a socio-analytic stance.

2.1. The fourth industrial revolution: nature and implications

One may ask, 'Why argue in favour of self-reflexive practice now?' Technologies such as Artificial Intelligence (AI), and the Internet of Things (IoT) continue to merge with human lives[12]. This infusion, which is also being referred to as the 4IR is creating a radical shift for employees, organisations and society [4]. The 4IR refers to the technological transformation society is undergoing in the 21st Century[10]. It has been predicted that the 4IR, STARA (smart technology, artificial intelligence, robotics and algorithms) would replace a third of the jobs that exist today (Krishnannair & Krishnannair, 2021)[11]. The International Labour Organisation in the Southeast Asia-Pacific region further predicts the replacement of workers with automation, the introduction of multiple work roles for each work role "lost", and attention to skills development to fill the newly evolved different work roles[10;12]. Thus, the core characteristic of the 4IR involves autonomous production methods powered by robots, which carry out tasks intelligently, safely, and with flexibility, versatility, and coordination[13-14].

Research within the context of the 4IR affirms that work and the meaning of work are changing and that workplaces will be driven by digitalisation and extensive smart ecosystems[15]. In 4IR, an increasingly digitised world is emerging as people, objects and systems become interconnected through the real-time exchange of data [16;11]. It is important to note that the implications and nuances of the 4IR will differ from context to context and culture will play an important role in how it manifests[17]. Despite the obvious opportunities, the 4IR also comes with challenges. The quantum of data being made available through digital interactions[4] raises ethical concerns, challenges the way in which we learn and creates increasing unpredictability, complexity and ambiguity. I argue that one way of managing this data overload with its associated challenges, is self-reflexive practice.

2.2. Self-reflexive practice

The increasing significance of reflexivity as a skill, art, way of being and educational tool, is evident from the growing body of research on the topic[18-21]. Reflexivity has been approached, studied, and conceptualised in different ways[22-26]. These approaches seem to share four common activities in the form of reflecting, planning, acting and evaluating[24].

The literature seems to suggest that reflective practice involves two related processes in the form of reflection and reflexivity[27]. Central to reflection is self-awareness[28]. Self-reflexive practice, however, as a deeper form of reflection, entails an ongoing meta-level reflective process (questions, thoughts, and feelings) about the self and how this reflective process is being consciously experienced in the moment[29]. Furthermore, Archer[30] conceptualises reflexivity as an ongoing, internal conversation in which one reflects on a series of pertinent questions, for example, "what's happening?" and "what is my impact on what is happening in the moment?" Hence, reflexive practice has been perceived as a dynamic, participatory, and cyclical process[31]. Reflexivity therefore seems to be the process of recognising what is happening explicitly and implicitly in the moment[32]). Given the above, Olmos-Vega et al[33] provide a very useful, comprehensive definition of reflexivity by conceptualising it as "a set of continuous, collaborative and multifaceted practices through which (practitioners) self-consciously critique, appraise and evaluate how their subjectivity and context influence the research processes." It is this deeper form of thinking and learning that facilitates grounding and enables sense-making and meaning-making during turbulent times[34]. **Table 1** below reflects how the conceptualisation of reflexivity has grown and evolved.

Table 1. Evolution and common definitions of reflexivity in different research settings.

Authors	Definitions
(Schwandt) [35]	(a) "the process of critical self-reflection on one's biases, theoretical predispositions, preferences"; (b) an acknowledgement that "the enquirer is part of the setting, context, and social phenomenon he or she seeks to understand"; and (c) "a means for critically inspecting the entire research process" (p. 224) [35].
(Russell and Kelly) [36]	"A process of honouring oneself and others in our work through an awareness of the relational and reflective nature of the task."
(Finlay) [37]	"A thoughtful, conscious self-awareness that encompasses continual evaluation of subjective responses, intersubjective dynamics and the research process itself".
(Nagata) [29]	"a deeper form of reflection, as an ongoing meta-level reflective process (questions, thoughts and feelings) about the self and how this reflective process is being consciously experienced in the moment".
(Walsh) [38]	"That which turns back upon (or takes account of) itself or the person's self".
(Dowling) [39]	"The analytic attention to the researcher's role in qualitative research. A continuous self-critique and self-appraisal where the researcher explains how his or her own experience has or has not influenced the stages of the research process."
(de Gooijer 2010) [40]	"…studying of relationships and relatedness…especially when unconscious processes…are to be discerned…"
(Gentles et al) [41]	"The generalised practice in which researchers strive to make their influence on the research explicit to themselves and to their audience."
(Kuehner et al) [42]	"A strategy of using subjectivity to examine social and psychosocial phenomena, assuming that social discourses are inscribed in, and social practices are embodied by the researcher."
(Finefter-Rosenbluh) [43]	"A continual internal dialogue and critical self-evaluation of the researcher's positionality (Pillow) [25], which leaves the researcher changed in its wake [23]."
(Olmos-Vega., et al) [33]	"a set of continuous, collaborative, and multifaceted practices through which researchers self-consciously critique, appraise and evaluate how their subjectivity and context influence the research processes."

(Adapted from Olmos-Vega., et al [33])

Numerous studies attest to the inherent value of reflexive practice. For example, reflexivity seems to be key in the context of creating a meaningful mindset and to enhance one's sense of purpose and wellbeing[44]. Scholars also suggest that reflexive practice has emerged as a critical tool to consciously explore lived

experiences, current experience, and subsequently created new knowledge[45]. What seems to be a common experience and perception is that reflection is useful and informing in the development and understanding of teaching and learning[46].

Despite the inherent value of SRP, there are challenges to contend with, as well as limitations to address. For example, the speed of technological evolution[6] makes it difficult for some people to deliberately pause to reflect in an intentional and structured manner[68]. Rapid technological evolution may also manifest as a potential distraction to reflexive practices. The very act of pausing may create even more anxiety. Some organizational cultures also do not perceive reflexivity as "work"[15]. An additional challenge is that some individuals simply do not know how to engage in reflexive work[22]. Thus, apart from not knowing how to engage in reflexivity, and not being able to find the right environment to reflect, reflexivity by nature is a difficult, painful practice. At an emotional level, SRP involves a rigorous, authentic confrontation with the self. Very few people seem to be ready for this emotional and psychological scrutiny. Therefore, it is important to always be mindful of why you started to reflect in the first place.

Individuals can utilize SRP to navigate 4IR barriers and challenges. The following are common examples of what and how to engage in SRP[19, 20,28]:

a) Set aside regular time to reflect each day or at the end of each week. This practice would create useful reflexive habits, protocols, and spaces.

b) Set recurring reminders on your smart phone to prompt you to jot down emotional moods, thoughts and preoccupations. Engaging in this practice would ensure that you actually make time to record a few reflections.

c) Find a psychologically safe space, with minimal distractions to facilitate the transition from work mode to reflexive mode. Remind yourself why you want to become a more reflexive practitioner and the value of doing so. This will have a motivating effect during difficult times.

d) Use a learning diary to record any significant insights or learning to support your practice.

2.3. Exploring 'relationships' and 'relatedness' to 4IR from a socio-analytic stance

Socio-analysis serves as the theoretical framework, in support of the arguments being made regarding self-reflexive practice within the context of the 4IR. Reflexive practice occupies a special place in socio-analytic inquiry. Krantz[47] and Long[9] define socio-analysis as the study of human social phenomena from a systems theory and psychoanalytic perspective. The study of dynamic, complex, unpredictable, and unconscious systemic organisational behaviour, which are characteristic of the 4IR and its associated phenomena, requires according to Levinson[48] and Schein[49] a systemic and psychodynamic stance. This stance, which serves as the theoretical framework for this analysis, simultaneously explores entities as complex, interconnected systems as well as the hidden and often repressed parts of the system[47]. Thus, socio-analysis strives to reveal the unconscious interconnection within a group or system[50], to understand below-the-surface dynamics and behaviours in organisations, structures, and institutions[51]. The dynamics comprise a complex set of thoughts, feelings, actions, and processes of people in a given system or context [52;50]. As such, this stance studies the manifestation of systemic and dynamic conscious-rational and unconscious-irrational behaviour in organisations[53]. In doing this socio-analytic work below the surface, we excavate the unseen to also prepare for the unforeseen. As an activity, socio-analysis is therefore the transformative process, that occurs between the organization as container and whatever is contained during socio-analytic consultancy[69-70].

Reflexive practice inevitably uncovers knowledge, because shared reflective practice has become the socio-analytic pathway to understanding the unconscious life of systems, and the subsequent development of meaningful working hypotheses that serve as diagnostic tools for reflective inquiry[54]. Therefore, our personal and work worlds should be seen, approached, and appreciated as "fields of enquiry" into which we enter, armed with the tool of self-reflective practice. It seems to be easier to adopt this reflexive stance when one strives to suspend judgement, and memory and desire [55]. A good starting point is to consciously reflect on one's relationship, attitude towards and relatedness to the 4IR and its associated practices.

People generally has a relationship with technologies, which is based on their attitude, thinking and assumptions about these technologies. This relationship could be conscious. In the context of this discussion, and from a socio-analytic perspective, *relationships* refer to any interactions, as these occur in the here and now (i.e., the present)[56]. However, there is also an unconscious element that explains our disposition towards technologies. This unconscious relationship is referred to as *relatedness*[57]. This relatedness (my experience and attitude towards the 4IR as it exists in the mind) is similar to the notion as expressed by Rosenfeld[58] as "the-gang-in-the-mind" and Armstrong[59] later referred to it as "the-organisation-in-the-mind". One's behaviour towards the 4IR will subsequently be congruent with this relationship-in-the-mind.

It is only when we can consciously explore our assumptions, anxieties, resistance, or even excitement about technologies, that we will be able to understand and decide on a more consciously informed stance towards technologies. Bridger[60] proposes that people will remain firmly rooted in their habitual mindsets, unless they change the way they think about problems (for example, fear about technologies), which will change their perspectives, and subsequently inform new possibilities for action. Self-reflexive practice therefore seems to have an empowering component, because it is in the ongoing process of reflection that the realisation dawns that one has agency to challenge, to learn and transform. It is also evident that the way in which we relate contains, and carries valuable information in terms of our thinking, our unconscious assumptions and behaviour. In summary, it is argued that this valuable information is excavated through reflexive practice. One way of harnessing the positive developments of the 4IR with its expected radical societal transformation, is by exploring our relationship with and relatedness to the 4IR. Self-reflexive practice thus becomes a tool, a mindset and method of inquiry into our relationships and relatedness to the 4IR. In the absence of SRP, it is unlikely that we would be able to *access* our thinking, our disposition, expectations, and experiences of the 4IR and its associated phenomena. Engaging in SRP will help us make sense of our lived 4IR-related experiences.

3. The value of developing self-reflexive practice (SRP)

In this article SRP is conceptualised as the critically informed stance of reflexive dialogue with the self, regarding conscious and unconscious realities. As a practice, it is ideally recurring, procedural, in tune with the dynamic and purpose driven. A good-enough[61] self-reflexive practice is based on a trifecta of capacities, for example, the capacity to access one's internal state and how we respond to this state; the capacity to be open to the unknown; and finally, being willing to suspend, judgement, memory, and desire[55]. The critical concept of good-enough is used. Not perfect-enough. This implies being aware, being responsive, being supportive and being willing to adapt when required. SRP enables us to take advantage of the opportunities of the 4IR by alerting us to any possible resistance to technologies, by making our assumptions more explicit and hopefully by embracing potential opportunities being presented by the 4IR.

The key findings in my exploration of the literature suggest that the value of SRP, lies in its capacity to a) foster critical thinking; b) manage paradoxes, dilemmas and complexities which are characteristic of the 4IR, and c) create psychological "containing spaces" for complexity, ambivalence, and ambiguity. The

findings also implicitly allude to how SRP facilitates potential space (an intermediate psychological area of experiencing that lies between fantasy and reality[71] and nurtures negative capability (an individual's ability to tolerate doubt, uncertainties, and the unknown[72].

3.1. The value of self-reflexive practice in fostering critical thinking

It has been argued that one of the essential requirements of the 4IR is critical reflection in the form of critical thinking[62]. As the world continues to evolve, our identities are also impacted. We therefore need to find the time and space to pose a series of critical, disturbing personal questions. For example, "Who am I?" "Who am I in this changing world?" "Who/What am I becoming?" "What is the impact of these changes on me as a person/professional?" "How do I need to respond?" "What is my attitude towards machine interaction?" "How do I need to reinvent myself?" "How will this reinvention help/hinder me as a person/professional?" It is argued that SRP creates the vehicle in the form of time, space, and methodology for critical thinking by allowing for these critical questions to be posed. In this volatile context, SRP becomes a compass for critical reflection.

3.2. The value of self-reflexive practice in managing paradoxes, dilemmas and other complexities

Another characteristic of the 4IR is that it creates complexity in the form of information overload, ethical dilemmas and paradoxes[29, 31]. Self-reflexive practice is also valuable in the sense that it helps to manage paradoxes, dilemmas, and other complexities. As teams, organisations and societies change, we are being constantly stretched and challenged to adapt and to remain relevant, lest we fall behind and become irrelevant and, in a sense, also incompetent. This environment is experienced as increasingly uncertain[63], life becomes less predictable, relationships come under threat, our comforting belief systems are undermined, and we become detached from our attachments. The result is that decision-making becomes increasingly complex in the presence of perceived paradoxes and dilemmas. The inevitable result is that people become traumatised and re-traumatised as they jump from one burning platform to the next with the subsequent struggle to cope with the loss of the cherished and familiar. The value of self-reflexive practice in this context is that it creates time and space to pause, breathe, grief and reflect on what is happening and to chart an informed way forward[25, 27, 28]. In pausing, people are enabled to puzzle the pieces together by building an empowering understanding of themselves, their teams, and organisations as they appreciate the complexities which they must negotiate.

3.3. The value of self-reflexive practice in creating psychological "containing spaces"

Amidst increasing complexity, competing work tasks and increasing levels of burnout[27], individuals often claim that there is simply not enough time and space for additional tasks. What can be least afforded under these challenging conditions is to stop thinking and to stop reflecting. Thus, another perceived value of SRP is that it creates the psychological space[9, 30, 33, 71] to contain complexity, ambivalence, and ambiguity. As human beings we tend to function better in the presence of space. In the absence of "space" the impact of the anxiety we experience becomes more overpowering. We become fragmented when we are confronted with uncontained anxieties[54].

As the 4IR unfolds, with its demands to do things in new ways and to reinvent ourselves, we tend to become increasingly vulnerable, because our current identities are being threatened[64]. When I am no longer skilled or relevant, what does this mean? When I do not adjust as quickly as I should to technological requirements, what are the implications for who I am? In this challenging, debilitating context it is critical to find the time and space to pause. This psychologically safe, contained space,[9, 33, 60, 69] creates the opportunity for us to sit, appreciate and reinvent a new sense of self as we attempt to also de-pathologise our

vulnerability and reassert our humanity. These safe, containing spaces should assist us to become more comfortable with increasing levels of complexity, unpredictability, and ambiguity, which have become distinguishing characteristics of the 4IR[17].

4. Implications and future research

The previous discussion alludes to several implications for practice. For example, educators, psychologists, coaches and HR practitioners may benefit from the benefits of self-reflexive practices. Firstly, the importance of SRP in relation to our currently unfolding 4IR context calls on the different stakeholders mentioned above, to consciously create space for deliberate reflexivity by embedding it into existing personal and or work routines, structures, and procedures. SRP may proof beneficial when working within a social environment, where individual, team and organisational dynamics as well as projective processes are at play. In doing this, we will be authorising self-reflexive practice as a method of purposeful enquiry to enhance self-awareness but also to consciously address the challenges and explore the opportunities of the 4IR as we go about our daily tasks. Secondly, it seems to be in our nature to be reflexive as human beings. This kind of reflection should also happen at the collective level, by engaging in shared reflexive practices, in the vein of communities of practice[65]. By reflecting collectively, for example, as policymakers or educators, people will be able to see how the 4IR manifests, and artificial intelligence impacts, for example, organisations, communities, or educational settings. Thirdly, there does not appear to be one homogenous way of reflection. Therefore, individuals and communities of practice should explore with different reflexive methodologies. A reflexive methodology that one feels comfortable with, may form the basis for the creation of negative capability, as well as a possible entry into potential space. In this way we will arrive at a personal and interpersonal practice which is meaningful, relevant, sustainable, and purposeful.

According to Walsh[38], there are four overlapping and interacting dimensions of reflexive processes: personal, interpersonal, methodological, and contextual. Empirical research in particular qualitative research could be conducted to explore the cultural implications of the 4IR and its associated phenomena on communities at the personal, interpersonal, and contextual levels. In addition, research could also be conducted to explore what SRP would look like in different socio-cultural communities and what different socio-cultural communities would need to facilitate thriving in the 4IR. The empirical grounding of this paper could be improved by conducting empirical research to explore the findings of this non-systematic review of the literature.

5. Conclusions

The aim of this paper was to highlight the importance and value of self-reflexive practice as a critical skill for navigating the complexities and challenges presented by the Fourth Industrial Revolution. When we consciously reflect, we dedicate ourselves to creating sufficient time and sufficient space to think about our work role and our experience of our work in-role as individuals, as members of a group and as members of an organisation. As reflexive beings[66], we enter an ongoing reflexive dialogue with ourselves. This conscious, structured, deep reflection, is known as self-reflexive practice. It is evident from this reflection that through reflexive practice we can capitalise on interpretative understanding and the new knowledge gained. Furthermore, when engaging consciously in this practice, agency is created. This implies that we have the responsibility to act in the interest of managing the challenges, but simultaneously harnessing the opportunities of the 4IR. Thus, personal reflexivity as transformational competence could help us reshape and reorient how we relate to 4IR. The value of SRP, therefore, is contained in its capacity to foster critical thinking; to manage paradoxes, dilemmas and complexities which are characteristic of the 4IR, and to create

psychological "containing spaces" for complexity, ambivalence, and ambiguity. In sum, self-reflexive practice enables its practitioners to learn from experience (through reflection) about themselves, their work and the way they relate and show up in the world.

This paper contributes to the ongoing discourse in environmental and social psychology pertaining to identity, culture, relationships, wellbeing, resilience, and coping mechanisms. SRP creates structured awareness around these themes. One of the keys to psychological adaptation is self-awareness and self-reflection [73]. The article also offers a different conceptualisation of SRP, which is rooted in the socio-analytic literature regarding the nature, practices, processes and the enabling capacities which should inform SRP. In line with this enquiry, it further explores the value of SRP from a socio-analytic paradigmatic stance. This article provides a further contribution in that socio-analytic and psychodynamic approaches have always contributed to our understanding of intrapsychic and interpersonal dynamics in our technical, social and psychological environment. To this end, this perception piece sought to invigorate the "social" environment discourse from a socio-analytic and psychodynamic stance.

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Conflict of interest

The author declares no conflict of interest.

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