

---

## Some thoughts on the subject and relations<sup>1</sup>

Romina Coin\*

**ABSTRACT.** – The author proposes some reflections on the theoretical declination of the correlation between the subject and relations, in an attempt to translate the categories of the epistemology of complexity into the perspective of the Psychoanalysis of Relations. The resulting relational conception of the human being offers useful stimuli for rethinking some fundamental assumptions of clinical action. The study was inspired by the work of Michele Minolli, who in the last twenty years has increasingly focused on the elaboration of a theory of the human being and his life process.

**Key words:** Self-eco-organisation; interaction; epistemology of complexity; recognition; dependency.

### Introduction

Linking the word ‘relationship’ to ‘psychoanalysis’ represented the challenge that, since the 1970s, long before the publication in Italy of the works by J. Greenberg and S. Mitchell (1987), brought together the original group of what in 1985 became the SIPRe (*Società Italiana di Psicoanalisi della Relazione*).

The relationship was considered an integral dimension of a subject observed in a ‘unitary’ perspective and redefined then as ‘I-subject’ to highlight the difference from the concept of the ego as a psychic instance or an abstractly understood subject. This approach has characterised a specific area of research and intervention in SIPRe for over 50 years now,

‘Psychoanalysis of Relationship’ was considered an oxymoron pointing to an horizon that was thought to be as necessary as it was inconceivable, at

---

\*Società Italiana di Psicoanalisi della Relazione. E-mail: romina.coin@fastwebnet.it

<sup>1</sup> This paper was inspired by the thoughts of Michele Minolli and the work conducted together with a group of colleagues at the SIPRe Institute in Milan. I would like to thank Laura Girelli, Massimo Schneider and Francesco Dettori for sharing their thoughts and support in the drafting of this paper.

a time when psychoanalysis was identified with an intrapsychic vision of the human being and cultivated the conception of a cure where the analyst was an inaccessible and anonymous figure, supposedly capable of capturing and bringing out the origin of psychological suffering from the innermost truths of the human mind.

Since its beginnings, alternative visions have emerged in the psychoanalytic context in favour of a less individualistic and deterministic perspective of human beings, their sufferings and the possibilities of understanding them. Even so, a need took shape, still difficult to situate in a theoretical framework, to understand the subject and psychological therapy in a participatory, real, embodied human dimension, one that could resist the allure of a knowledge and practice essentially isolated and protective (for the analyst) from the disturbances of the encounter with the suffering of the other, and instead open up to the need to give a place and a scientific status to the 'real', lived and (not thought) relationship confined to the imaginary.

The vicissitudes, even dramatic ones, are well known in the biographies of psychoanalysts who distanced themselves from orthodoxy and, by bringing a different voice, undermined the delicate and crucial operation of scientific validation of a discipline poised between natural and human science.

Tragic ruptures, disavowals, betrayals have marked the history of psychoanalysis, demonstrating how the scientific debate and theoretical alignments triggered such intense and powerful dynamics as to overwhelm not only the choices of thinking and belonging, but the very existences of those involved.

In today's very different horizon, which assimilates the epistemology of complexity and many relational assumptions and concepts, we can try to integrate the diversity of outlooks in a composite vision, aware that any cognitive act is, first and foremost, a vehicle for a personal research and conception of life, of the human being, of relationships and ways of being in the world, in the relationship with oneself and with what is other than oneself.

This premise is useful to remind ourselves that the process of evolution of ideas and knowledge is structurally connected to the subjectivities and histories of those who elaborate or adopt those theories, 'in the tangled web of individual-group dynamics (...) between individual creativity and collective value recognition' (Fox-Keller, 1983, p. 12).

In short, it is not simply a matter of assuming the relativity of every possible gaze on reality, but of considering the gaze itself as revealing a vision of the world and a way of inhabiting the existence of the observer.

We can therefore extend the 'theory-method-technique' sequence and articulate it by adding the worldview (*Weltanschauung*) and epistemic foundations which shape ideas, and find their arguments (Minolli, 2015). That is to say that the way we frame reality and how we know it are not the frame

and background elements to our system of thinking but constitute its very plot and essence.

This nexus between life and thought, between existence and consciousness, which we can assume to be present in every discipline, is all the more stringent when the object of knowledge is the subject of knowledge itself, its reality, and the theories derived from it cannot be handled as an intellectual heritage divorced from the rest of its existence. All this should remind us that our models and theories of reference are part of us because they are traversed by dimensions of value and meaning consistent with who we are and the way we interpret our profession and the business of living (Gius & Coin, 1999).

### What we mean by 'relationship'

While it is true that today everyone talks about relationships and recognises themselves in many of the aspects that relational psychoanalysis has brought to the fore, it is also evident that the concept lends itself to multiple interpretations and is used in different applications in clinical practice.

In order to define the field, we will not consider the more strictly phenomenal and experiential meanings, on which much relational psychoanalysis (and also various non-psychodynamic approaches) has dwelt, probably also due to an interest that, with the demise of Freudian metapsychology, has been oriented more towards clinical theory than formal theory.

The focus on the experiential plane of the relationship has had the undoubted merit of dismantling the aseptic image of the analyst but has also brought with it the limitation of often stopping at a descriptive rather than explanatory level of phenomena.

P.F. Galli commented many years ago that we have moved on from the hieratic analyst who offers interpretations, to what he has repeatedly called the 'analyst in his underwear', who dispenses affection and acknowledgement, thereby criticising the affective-emotional-experiential emphasis given to the analytical encounter, to the detriment of other levels of understanding.

In the same vein, Minolli used to repeat that 'the relationship does not cure', thereby questioning the hypothesis that the therapeutic factor was linked to the device of a reparative parental relationship or a corrective emotional experience, to the response to a need for recognition, or to the experience of reliance, dependence, fine-tuning, empathy. All of these elements undoubtedly participate in the therapeutic experience, but they cannot represent the only therapeutic key to an analytical process.

Rather than taking it for granted, it would be worth questioning what the relation is on a theoretical-explanatory level and within the logic of analytical interventions with people.

What status do we assign to the relationship and how does it position itself within a theory of the subject and a theory of the clinic? How does the relationship with the other affect the psychic life of human beings? What role and what relevance does the other have in determining the conditions of life and the well-being of the subject?

## Reality exists

There is no doubt that the relationship raises the question of reality, and reality refers us to the epistemological question, before the theoretical and clinical ones, of the relationship between objectivity and subjectivity, between the observing subject and the datum of his observation.

We take as our starting assumption that reality exists in spite of and beyond ourselves and our possibility of conceiving, signifying and understanding it.

Therefore, we assume that reality is not the product of a mental construction and that its complexity remains irreducible and unpredictable, in the sense that it does not bend because of our need to process it, control it, dominate it. There is the reality of ourselves, of what we are, subjects, living organisms, with a beginning and an end, each with our own origins, with our own life history, with our own uniqueness; just as there is the reality of the other who is other than us.

We might consider the 'reality' of the human subject as his biological, psychological, social, cultural uniqueness, and probably also the fundamental anxieties of existence, which derive from the fact that, unlike all other living beings, the human being knows that he has a beginning and an end.

We happen in the world as an emergence, an expression of interactions that preceded us. At conception and birth, we find ourselves configured into the unique identity that defines us and that will forever ground our existence. For a certain period of time, perhaps until the emergence of the reflexive capacity, the child is active within the parameters established by the genetic and environmental heritage that constitute it, by the bios and by the care of others (the investment): at least until 15/18 months of age (Stern, 1985) the child has not yet matured the reflexive capacity, which is the necessary requirement to develop the faculty of creative and propositional expression, going beyond the primary dependence of the child on the caregiver.

The subject is defined in the interaction with the caregiver in full coherence and continuity with the parent. This means that there is no assumption of the existence of an anterior subjective entity or agent, which pre-exists the facts and then enters into a relationship with the circumstances, events, the vicissitudes of living. There is no assumption of an original, integral, authentic self, projected towards a predictable and optimal trajectory, which

events and the vicissitudes of experience then deviate, corrupt, compromise, pollute. For this reason, the hypothesis is challenged according to which therapeutic efforts should be inspired by the criteria of some normality, as an endowment to be restored or aimed at so that the patient can recover one of his 'truths' or well-being.

The subject exists and is real, starting with what he is, how he is configured: he does not enter the flow, he is that flow.

The life process of the human subject, his natural being and becoming, is the slow proceeding in life by working out the possibility of continually measuring, confronting and mediating existential solutions that make his relationship with the inescapable stresses and aspects of reality, of self and of what is other than self, sustainable.

Reality exists but we cannot know it except through our own eyes. What I grasp is thus reality *for me* and the other's reality *for me*.

In this perspective, the therapeutic factor no longer consists in promoting some structural transformation or repairing deficiencies and deficits, but in fostering the possibility of an active recognition and appropriation of one's own reality, because 'well-being' does not depend tout court on the data of reality but on the quality of the relationship the subject establishes with that reality, which is his or her own.

This may appear to be a trivial and obvious statement, or simplistic and reductive; on the contrary, it announces the proposal for a complete overturning of the conventional approach to thinking and clinical reasoning. The new element is in the attempt to translate the heuristics of complexity into a conception of clinical method and practice that coherently integrates its principles and categories.

This involves working towards an idea of human being that does not focus on the pre-eminence and explanatory centrality of the mental: the view that the control booth of human experience is in intra- and interpsychic processes and their ability to process every level of self-experience, has been overcome.

The proposal to give relative and non-foundational weight to content, meanings, the symbolic plane and the many concepts on which man's self-image is built, with the myth of interiority (Jervis, 2011) and the culture of introspection (Foucault, 1992), also incorporates the contributions of neuroscience and cognitive science, which now identify the processes of consciousness as the area of greatest interest for psychological research.

It would be impossible to go into such a vast topic here. We will limit ourselves to its etymological definition: the term consciousness comes from the Latin *consciens*, present participle of *conscire*, meaning to be aware. It is the consciousness that the subject has of himself and the external world with which he is in relationship, of his own identity and, for the human being, of the complex of his own inner state, with his thoughts, fantasies, feelings, emotions, sensations, *etc.*

In these terms, consciousness is, in its essence, approachable to the meaning of computation and cognition of the living, proposed by Maturana and Varela (1980) and Morin (1986) to denote the capacity proper to every living form to distinguish the me from the non-me. Living computation is devoted essentially to the organization of being, to remaining alive and to its reproduction.

In this perspective, the axis of attention shifts from the plane of representations and mental processes to the factual, empirical, organic plane and invites us to set the productions of consciousness as subordinate and functional to the overall organization of the living being. A human subject that does not define itself in a psychic identity but is rooted in its existence from the bios and its being governed, like any other living form, by self-eco-regulatory processes.

Each part, function or aspect of the living being moves in concert with the other parts for the essential purpose of maintaining its unity and coherence, that is, the conditions necessary for its subsistence (Sander, 2007).

The understanding of the human being is thus reversed from *cogito ergo sum* to *sum ergo cogito*, because human existence includes the secondary functions of thought, reflexivity, mentalization; but these 'higher' faculties are but a relative component, in equilibrium with the many others that constitute it as a unitary system and which, together, operate for the purpose of the preservation of one's life.

This equilibrium is inherently fine-tuned also in its ecological dimension, to everything other than itself, seamlessly, thus overcoming any residual traces of an inside-outside, I-other dichotomy. The ecological vision grasps the simultaneity of 'internal' and 'external', subject-environment events, and the necessitating and inescapable link uniting them.

The relationship with the other, then, is not something the subject enters into or a context within which he is placed: the subject, and his connection with the other than itself, are the same thing, the two sides of the same coin. The subject does not 'have' but 'is' its connections with the world.

## The relationship as interaction

Once we have taken into consideration the aspect of reality, of the reality that exists according to its own principles and logic, we need to outline the aspect of subjectivity, in other words the eyes of the beholder.

If the impossibility of neutrality, *i.e.* of knowledge reflecting some objective truth, can now be taken for granted, when the facts are put to the test, abandoning all support for some sort of objectivity leaves one disoriented and disenfranchised. When, for example, we have an idea of the patient, of his history, of the course of his relationship with us, we tend to

resort to definitions which, in traditional clinical reasoning, objectify him. And the same happens outside the professional settings, when in everyday life we enter into relationships.

When we consider, in theoretical terms or in the flow of our existence, the relationship between two or more subjects, we inevitably run into a dilemma: what is the 'objective' contribution of each to the generation of the phenomena occurring in the interpersonal field, 'between' the interpreters of that relationship?

At best, the epistemic assumption of subjective implication shows itself where and when one wonders whether the situations experienced depend on oneself, on how one is made, on how one has acted, or whether they depend on something external to oneself: on the other, on one's parents, one's partner, the government, a traumatic event, and so on. *'Subjective' is that which affects me, where I have something to do with it, while 'objective' is that which is beyond me, which I come across, which happens beyond me.*

A great deal of psychological literature uses descriptive categories such as functional/ dysfunctional, match/mismatch, adaptive/maladaptive, in an explanatory manner. These are categories which, in addition to implicitly referring to some optimal criterion, of adequacy, health, validity, of the relationship (functional, adaptive, 'fit'), assume the dimension 'between' the subject and reality (the other) as the co-constructed product, the 'third' element resulting from that encounter.

This objectification of the 'between' seems to enshrine as inescapable a position of dependence (albeit reciprocal) of the subject on the other, opening up to a more topical and refined reinterpretation of the decisive weight that the other would have on the subject.

The recurring problem - which, as mentioned, is the same one that runs through the processes of naive psychology - is to establish which contribution comes from the one, which from the other. The 'between' would thus be the outcome of the more or less happy convergence between the two, where that 'between' is understood as the place of the confluence of the worlds of the subjects and the area of the bargaining, mediation and negotiation between the poles of the relationship.

How can we get out of this scheme which, beneath the surface, continues to refer to (and get stuck in) the I-you, subject-other, inside-outside dichotomy? And above all, how to get out of it without losing the subject, and the radicality of its real being, in the complexity of the relationship?

Incidentally, this is a junction one always encounters in the process of patients in analysis: when projection and delegation are faced with a crisis ('my suffering depends on something external to me') in order to open up and consider one's own participation in events, experiences of guilt, unworthiness, inadequacy ('then it is my fault', 'I am wrong') inexorably arise which, while reflecting on the one hand the difficulty, also cultural, of con-

ceiving responsibility in a non-duty or judgmental key, on the other hand they cover the personal fatigue of taking on one's own responsibility in the first person.

An interesting avenue to explore in attempting to unravel this I-you back-and-forth is to keep in mind how the concept of relationship itself is used, because it is this use that delineates the context of meaning within which the encounter takes place (or is analysed). The concept of the relationship is a construct, a representation that informs, precedes and follows interaction: the relationship is an idea we have in our heads, it is a content (and a reference model) which, as such, is functional to the maintenance of the overall existential equilibrium; in other words, thinking about the relationship in a certain way serves to affirm and find self-affirmation.

Things may then appear differently when we dwell on the most tangible aspect, which is interaction, that is, the fact of the exchange that takes place continuously, reciprocally and simultaneously between subjects. One cannot but interact, and interaction takes place at all levels of experience, somatic, sensory, perceptual, emotional, affective, *etc.*, of the self and the self with the other.

Interaction as an observable phenomenon, which highlights the self-eco-organising logic of subjects (the subject is its connections). Interaction as a reciprocal, recursive incidence between living beings that act, come into being (self-eco-organise) through that interaction.

In this reciprocal incidence, the impact of one on the other is always commensurate, modulated by the self-regulation of each: each transposes and integrates what the other expresses, insofar as the contribution of the other is sustainable, functional and consistent with one's own self-affirmation.

Interaction can then be thought of as a dance that expresses one hundred per cent of what each one is, in congruence with what the other is.

No external stimulus can have an instructive value per se on the subject; nothing and no one that is external to the subject can condition or influence it except to the extent that the subject assimilates and remodels that stimulus as a function of itself. Just as nothing the subject expresses can be understood as a mere reaction to the external stimulus because the response is always, inevitably, the outcome of a process of appropriation commensurate with the subject's self-organisation.

This dance is well illustrated by the 'specificity mechanism' enunciated by biologist Paul Weiss (1947) and taken up by L. Sander in his analysis of dyadic adult-child micro-interactions.

The author reports on the observation of what happens between a father and the eight-day-old baby girl who falls asleep in his arms (2005, 273-274): each movement of each one of them is calibrated to the gesture of the other, in a circularity that is highlighted in the slowed-down reproduction of the sequence of frames.



The observation of this type of dyadic interaction is particularly interesting because it has the advantage of emphasising the simplest, most immediate, corporeal components of a communication that still travels entirely on implicit, biological, instinctive channels.

If then, in an interaction, nothing that is implemented by one is foreign to the other, for as long as that dance takes place, we might ask ourselves what it is that generates and drives this convergence? Why do two or more subjects establish an interaction and what is it that allows this interaction to stabilise and continue for a long time?

We can trace this agreement on convergence back to the need the living being has to actualize itself, and in its actualization it necessarily contemplates its connection with the other than itself. Minolli (2016) proposed framing this 'motive' in terms of an 'investment', understood in its most basic and valid meaning for every form of life: as a vector necessary for survival, which drives the living being to actualize itself by relating, and to relate by acting out itself for what it is.

Therefore, interacting concretely expresses and accounts for 'that' subject in its wholeness and in the processuality of its becoming.

Assuming the subject as the apex of the analysis, we can read relational phenomena in the light of the self-eco-organisation of each one, which, in that peculiar interaction, finds incessantly, dynamically (in the sense of non-static but constantly moving) its equilibrium, the optimal habitat for self-affirmation, which for that living being - and this should be stressed - coincides with preserving the conditions indispensable to its subsistence.

Any type of interaction, and therefore any interpersonal relationship, takes place under optimal conditions of security for each one involved, in a dance that, to the eye of the observer, may appear incomprehensible, pathological, incongruent, maladaptive, but from the point of view of vital organisation restores to the subjects a sense of self that coincides with the feeling of their existence.

## In conclusion

Adopting this perspective on the subject and his relationships imposes a choice of field that is diriment with respect to how we conceive the human being, the unfolding of his existence, the origin of suffering and the horizons of psychological care.

The basic question that is raised is whether the relational life of the subject should be framed as an innate and structural predisposition to dependence on the other, or whether the very hypothesis of this dependence should instead be considered an expression of a reading of reality; a reading that is

functional to an (individual, cultural, social) way of conceiving oneself and one's being in the world.

Human life, like that of every living form, would be impossible outside its relationality, but does this really imply that the human being remains - throughout his life - necessarily dependent on the other and conditioned by its recognition?

We are born into a naturally asymmetrical relationship, where the child is dependent on the adult and builds his or her self-image and feeling of self and the world based on the experience he or she has of himself or herself in the relationship with his or her caregivers.

We are thus constituted by the relationship as children and, for a long time in life, this position corresponds to the feeling of our existence. This entails experiencing ourselves in a relationship with reality where we perforce maintain a subordinate, passive position, in need of completion from the other.

If we assume that this position of dependence continues throughout life, we will understand suffering as the effect of a lack of conformity between the subject's demands and reality: the relationship is the source of suffering. Consequently, its solution will have to come through a change in the structural conditions, either with a change in the subject, or with a change in the other, or with a change in the relationship between the two.

This is the most widespread idea in common thinking, and it is also the leading hypothesis of a conception of care understood as repair or compensation, which aims at modifying the internal or external conditions of the subject in the direction of favouring better adaptation and congruence between the self and reality.

In this perspective, the reference to a normative (cultural, statistical) criterion is kept fixed in the background, indicating the modes and forms of being and realisation best suited to ensuring an optimal relationship between subject and reality, between the subject and the other.

In light of what has been said so far, another way is possible. We can indeed question the assumption of dependence as an inescapable datum of the human condition and affirm that theorising an ontological dependence on the other and its recognition is functional to maintaining ourselves in a reassuring and confirming position, because it demotes to the other, to the objectivity of things, the power to define ourselves, deferring the time for a pronouncement and an assumption of the self in the first person.

Dependency could then be considered not as a structural component of the relationship, but as one of the possible readings in the interpretation of the reality of the relationship. With this change of perspective, the focus shifts from the observed reality to the eyes of the observer.

This means not stopping at the level of experience but going back to the existential logic that underlies it and integrates it into the subject's overall organisation.

From this point of view, suffering does not arise from the relationship, with the frustrations, shortcomings and limitations that the latter always brings with it, but ultimately derives from the difficulty of abandoning the original position, of the 'child', in order to open up to the discovery of a relationship with oneself and with reality no longer centred on an external referent.

By identifying this functionality as a criterion for understanding relationships, and not some ideal model of relationship one should strive towards, the aim of care can then consist in taking in hand this displacement of self in the other, to this delegation of self to reality, in order to promote in the subject the possibility of self-recognition as he is configured and to see in his suffering the laborious elaboration of his life process, which is the elaboration of his relationship with life.

Care can be oriented towards this return to oneself (not reflexive but as appropriation, recognition and acceptance of what one is) which was at the time considered 'self-awareness' (Minolli & Tricoli, 2004) and which, over time, has been specified as the quality of presence to oneself, which is the prelude to every possible appropriation and pronouncement of the creative self in one's living.

Perhaps, then, it becomes possible to interrupt the short-circuit of the 'between', with its perpetual back-and-forth of claims and delegations, and to clear the space of the experience of self, and of the self with the other, from a fatal, reciprocal condemnation to having to be the response to the other's need for confirmation.

#### REFERENCES

- Ceruti, M., & Lo Verso, G. (1998). *Epistemologia e psicoterapia. Complessità e frontiere contemporanee*. Milano: Raffaello Cortina Editore.
- Foucault, M. (1992). *Tecnologie del sé*. Tr. it. Torino: Bollati Boringhieri.
- Fox Keller, E. (1983). *In sintonia con l'organismo*. Tr. it. Milano: La Salamandra, 1987.
- Jervis, G. (2011). *Il mito dell'interiorità. Tra psicologia e filosofia*. Torino: Bollati Boringhieri.
- Gius, E., & Coin, R. (1999). *I dilemmi dello psicoterapeuta*. Milano: Raffaello Cortina.
- Greenberg, J. R., & Mitchell, S. A. (1983). *Le relazioni oggettuali nella teoria psicoanalitica*. Tr. it. Il Bologna: Mulino, 1987.
- Maturana, H. (1990). *Autocoscienza e realtà*. Tr.it. Milano: Raffaello Cortina, 1993.
- Maturana, H., & Varela, F. J. (1980). *Autopoiesi e cognizione. La realizzazione del vivente*. Tr. it. Venezia: Marsilio 1985.
- Minolli, M., & Tricoli, M. L. (2004). Solving the problem of duality: the Third and Self-consciousness. *Psychoanalytic Quarterly*, LXXIII, 137-166.
- Minolli, M., & Coin, R. (2006). Per una psicoanalisi della relazione. *Psicoterapia e Scienze Umane*, XL(3), 641-652.
- Minolli, M., & Coin, R. (2007). *Amarsi amando. Per una psicoanalisi della relazione di coppia*. Roma: Borla.
- Minolli, M. (2009). *Psicoanalisi della Relazione*. Milano: FrancoAngeli.
- Minolli, M. (2015). *Essere e divenire. La sofferenza dell'individualismo*. Milano: FrancoAngeli.

- Minolli, M. (2016). *Che aspetti and andartene? L'amore nella cultura iper-moderna*. Roma: Alpes.
- Morin, E. (2004). *Il metodo 2*. Milano: Raffaello Cortina Editore.
- Morin, E. (1986). *Il metodo 3. La conoscenza della conoscenza*. Milano: Raffaello Cortina Editore, 2007.
- Sander, L. W. (2005). Pensare diversamente. Per una concettualizzazione dei processi di base dei sistemi viventi. La specificità del riconoscimento. *Ricerca Psicoanalitica*, XVI(3), 267-300.
- Sander, L. W. (2007). *Sistemi viventi. L'emergere della persona attraverso l'evoluzione della consapevolezza*. Milano: Raffaello Cortina Editore.
- Schneider, M. (2012). *La presenza nella stanza di analisi*. Milano: Mimesis.
- Stern, D. N. (1985). *Il mondo interpersonale del bambino*. Torino: Bollati Boringhieri, 1987.

---

Conflict of interests: the author declares no potential conflict of interests.

Ethics approval and consent to participate: not required.

Received for publication: 17 July 2022.

Accepted for publication: 20 September 2022.

Editor's Note: All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, editors and reviewers, or any third party mentioned. Any materials (and their original source) used to support the authors' opinions are not guaranteed or endorsed by the publisher.

©Copyright: the Author(s), 2022

Licensee PAGEPress, Italy

*Ricerca Psicoanalitica* 2022; XXXIII(s1):713

doi:10.4081/rp.2022.713

*This article is distributed under the terms of the Creative Commons Attribution-NonCommercial International License (CC BY-NC 4.0) which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author(s) and source are credited.*