

Human Empathy in the Face of Affective Robotics

Research Perspectives on Empathic Interaction between Humans and Robots

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Abstract

This contribution intends to propose a reflection on the experience of empathy in its multiple forms of manifestation: starting from the phenomenological analysis of the empathic experience proposed by Edith Stein and then reformulated by Max Scheler in the form of sympathy, we intend to focus on the dynamism of affective openness that characterizes human existence in its pathic nature to investigate, therefore, the possible declinations of artificial empathy on the basis of the most recent studies of robotic ethics. The last part of the contribution is dedicated to affective robotics and the possible impacts that robotic agents can exert on the human capacity to experience empathy and, more generally, openness to otherness. The implementation of the use of such robots, in fact, not only increases the forms of human-machine interaction by stimulating the cognitive and affective capacities of the subjects but poses new ethical challenges in order to re-understand the human pathos within an anthropology of the artificial.

Keywords: Empathy, Robotics, Human affectivity, Technology

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1 HUMAN EMPATHY AS A PATHIC EXPERIENCE OF OPENNESS TO OTHERNESS

A fundamental and in some ways still unsurpassed contribution to the phenomenological understanding of empathy is represented by Edith Stein's essay entitled *Das Problem der Einfühlung* from 1917:¹ here the philosopher, keeping in the background the distinction between material corporeality (*Körper*) and living corporeality (*Leib*) which is typical of human subjectivity,² offers an attempt to understand the human empathic experience as an intentional experience of openness to otherness.

Searching for the essence of empathic acts in compliance with the phenomenological method, Edith Stein comes to define empathy (*Einfühlung*)³ as the sharing of the experience of others as the other's or in maintaining a generative distance between the I and the You. With this definition the philosopher intends to differentiate her conception from that elaborated in the same years by Theodor Lipps according to which in the empathic act any possibility of distinction between the lived experience of another and one's own is eliminated since the differentiation between one's own and the foreign self would be entrusted only to the association of different psychophysical individuals and not to the experienced experience.⁴

From Stein's point of view, instead, the presentification of the other's expe-

¹E. STEIN, *Zum Problem der Einfühlung*, Buchdruckerei des Waisenhausens, Halle 1917; EAD., *Zum Problem der Einfühlung*, ed. by M. A. Sondermann, *Edith Stein Gesamtausgabe* (ESGA) 5, Herder, Freiburg-Basel-Vienna 2008; *Il problema dell'empatia*, trans. E. Costantini, E. Schulze Costantini, Edizioni Studium, Rome 1985.

²Making Husserlian distinction between *Körper* and *Leib* her own, Stein focuses on the description of the body (movements, expressions, limits) and its interaction with the soul since it is always the «soul of a body». Taking up the Thomistic lexicon, the philosopher defines the soul as an essential form inherent in every living being, or as that which forms the organism making it alive. A hylomorphic conception of the soul-body relationship emerges, enriched by a phenomenological perspective. In fact, for Stein, the soul is always placed within a living body (*Leib*) characterized by the psychic dynamics of intentional and existential lived experiences (*Erlebnisse*). See E. STEIN, *Der Aufbau der menschlichen Person in Edith Steins Werke*, vol. xvi (ed. by L. Gelber, M. Linssen), Verlag Herder, Freiburg i.Br. 1994; ed. it. *La struttura della persona umana*, Città Nuova, Rome 2000.

³The term *Einfühlung* is translated as «empathy» by Angela Ales Bello who prefers it to «empathy» «because the word empathy, which also serves to translate it, has commonly taken on a connotation that is not faithful to the indication of phenomenologists, in particular Edmund Husserl and Edith Stein who were the first to use it in a philosophical sense to highlight the intuitive recognition of otherness and not to indicate an attitude of benevolence or identification» (A. ALES BELLO, *Dalla "neutralità" dell'umano alla differenza di genere. L'antropologia duale di Edith Stein, in Pensare Altrimenti. In dialogo con Francesca Brezzi*, «B@belonline», 16/17 [2014], pp. 21-34).

⁴See T. LIPPS, *Das Bewusstsein von fremden Ichen*, in ID., *Psychologische Untersuchung*, Band 1, Leipzig, Engelmann 1907, pp. 694-722.

rience in the self does not imply, at the same time, an affective assimilation with the otherness but occurs in the awareness that there is a radical difference between the two subjects who enter into a relationship. In this sense, for Stein, the emotional experience is perceived as one's own but in the awareness of the irreducible distance with respect to the otherness. From her point of view, then, empathizing with a psychophysical being means emotionally sharing its horizon of values and immediately grasping the other as a being who carries a point of view on the world, as a living subjectivity endowed with sensations and actions. According to the philosopher, therefore, in empathy the subject grasps the other not only as a material body, but as a living body (*Leib*), or as a spiritual person who through his gestures, his words expresses his personal structure. This implies a reciprocal movement of openness to the other and of knowledge of the self which discovers itself in a structural and constitutive relationship with the otherness.

This means that for Stein, through corporeality and its expressiveness, the human subject is immediately led to the significant connections of the psychic, so that through empathy he comes to grasp the experiences of others, experiencing them not as his own but as bearers of a different perception of the world. In this sense, as the philosopher writes,

the perceived world and the empathically given world are the same world seen differently. But here it is not just the same world seen from different sides, as when, perceiving in an original way, I move from one point to another so that I pass through an uninterrupted multiplicity of appearances, of which the preceding appearance motivates the following one, while the following appearance gives way to the preceding one. [...] Imprisoned within the barriers of my individuality, I could not go beyond the "world as it appears to me," and in any case one might think that the possibility of its independent existence – which could still be given as a possibility – always remains unproven. As soon, however, with the aid of empathy I cross that barrier and arrive at a second and third appearance of the same world, which is independent of my perception, such a possibility is demonstrated. In this way empathy, as the foundation of intersubjective experience, becomes the condition of possibility for a knowledge of the existing external world.⁵

This dense passage from Stein's book attests how for the philosopher empathy constitutes the transcendental horizon of every inter-subjective experience as it allows the possibility of an objective knowledge of the world capable of going beyond the barriers of a purely solipsistic and self-conscious perception. Through empathy the human subject encounters otherness and knows the world for what it is, that is, as a presence outside of him that manifests itself in the relationship with others.

It is then understood that for Stein human empathy must be understood as a

⁵E. STEIN, *Il problema dell'empatia*, cit., pp. 157-158 (my translation).

complex intentional experience which is phenomenologically divided into three synchronous stages appropriately described by the philosopher: the first is that of the *emergence of the experience* which coincides with the moment in which the subject encounters the living corporeality of others and is able to read their emotional expression. Through the mediation of the corporeality of the other (of their face, for example) the experience that they are experiencing emerges. The second stage is that of the *filling explicitation* through which the object of the experience of the empathic subject coincides with the state of mind of the other with whom one identifies, thus welcoming it within oneself; this is the assimilative moment of empathy which however must not crystallize, leaving space, rather, for the *comprehensive objectification of the explicit experience* or rather to the moment in which attention is directed to the state of mind of the other, grasped as an experience of others through a distance enriched by the awareness of the previous state. In short, for Edith Stein, for there to truly be an empathic state, the subject must “make room” for the other and recognize him in his irreducible diversity: this means that the empathic self, after having identified with the other, must take a step back and look at the affective state shared with the other as an object outside of him. And, as Laura Boella highlights, this dynamism implies a transformative process of the self and a dynamic of identity formation.⁶

From the phenomenological description of empathy as a complex experience, the idea emerges that the empathic capacity depends on the personal structure of the human being articulated in body, soul and spirit. Only as a bio-psycho-spiritual reality is the human being able to operate the dynamism of exiting from the self and filling the experience of others, typical of empathy, which emerges within an anthropological framework of an “integral” type for which the human subject is a complex set of physical, psychic and spiritual elements but also of pathic, logical and ethical moments.

As in the phenomenological description of empathy proposed by Edith Steih, also in the analysis of the sympathetic functions that Max Scheler elaborates in *Wesen und Formen der Sympatie*⁷ there is a complex anthropological vision. It

⁶In the book *Sentire l'altro: conoscere e pratica l'empatia* (Raffello Cortina, Milan 2005) Laura Boella offers a description of the empathic experience divided into three moments: 1) *The emotion of the encounter* : when the other appears in front of me, all of a sudden, in person, he is in front of me as a thing, but he is not a thing, he has a living body like me. What shocks me, scares me, enchants me is the revelation of the relationship between me and the other; 2) *Imagining and understanding*: after the emotion of the encounter and the discovery of the existence of others, I feel the need to restructure my identity; 3) *Transformation of the self* : when I come to experience feelings that do not belong to me; through recognition and the mutual exchange of inner strength I come to feel the fragile humanity that unites me to others and at the same time overwhelms me and the others.

⁷M. SCHELER, *Wesen und Formen der Sympathie*, Gesammelte Werke, Bd. 7, hrsg. von M. S. Frings, Bouvier, Bonn 1986 (3., durchges. Aufl.); *Essenza e forme della simpatia*, ed. by L. Boella,

can be assumed that Scheler's treatment of unipathic phenomena, understood as phenomena of affective fusion that are at the basis of the process of founding the sympathetic degrees, could correspond to an attempt, urged by Stein herself, to lead the phenomenon of empathy back not so much to internal perception as to the even more original horizon of an absolute givenness of the pure Ego. Scheler however prefers to speak of sympathy and not of empathy: from his point of view, the original unipathy is surpassed by a conscious re-feeling that makes the individual an essence free to relate to otherness while maintaining a distance. It is *Mitgefühl* (co-feeling, sympathy) that, according to Scheler, makes the person aware of the other's ego (*fremden Ich*) because it manifests the reality of the other as the one who is in front of me. If through co-feeling the other is recognized in his personal identity and in his unrepeatable affective state, this means that for the philosopher only sympathetic acts are those in which the affective tension of a fusional type is overcome by an experience capable of recognizing the other for what he is.

It should be noted, however, that Scheler, radically differentiating himself from previous doctrines of empathy, intends to argue that a psychic experience can be given through "internal perception" in a way that is indifferent to whether it is mine or someone else's. In fact, he emphasizes that to experience the existence of the other, it is not necessary to have knowledge of his body. It is a question of being able to distinguish, in the perception of the other, the two spheres of the body and the psyche, each of which corresponds to its own eidological and phenomenological modality. In Scheler's words:

I do not say (with Lipps): my body is "my body" only because I – "me" – know myself as active in it as an individual and know myself as this individual who has lived. That would be too much. Instead, I experience my body as mine [*Ich erlebe meinen Körper als meinen*] (and also the body of others as belonging to another), because I know that both, the I and the body (including physical body, living body and psyche) belong to the same concrete unitary person. Both the I and the body find their ultimate individualization in the experienceable belonging to the unitary person.⁸

The phenomenological issue then becomes whether it is possible to internally perceive not only the self but also the experience of another. According to Scheler, the answer would be affirmative since internal intuition (*Innere Anschauung*) is a direction of the spiritual act that includes both one's own experiences and those of others. Scheler's novelty of an essential phenomenology of the self-other is thus summarized:

A's act of internal intuition includes not only the processes of his own psyche, but also, according to right and possibility, the entire existing realm of the psyche –

Franco Angeli, Milan 2010.

⁸Id., *Essenza e forme della simpatia*, cit., pp. 229-230 (my translation).

first of all as an as yet unarticulated flow of experience [*zunächst als einen noch ungegliederten Strom vom Erlebnissen*]. And just as we grasp our present self from the beginning against the background of the totality of our temporal experience – but not only through syntheses of the present ego with previous and remembered ego states – so we also grasp our own ego always against the background of an all-comprehending and increasingly confused consciousness, in which even the being of the ego and the experience of all others are as if in principle contained.⁹

Scheler's other-self belongs to the immanent structure of intentional subjectivity and precedes the physical encounter with otherness: in this sense it represents the transcendental condition of every sympathetic function which implies a bodily encounter with the other as radically different.

Stein and Scheler's analyses of the empathic experience and sympathetic functions respectively attest that, from a phenomenological perspective, the human subject has within himself the capacity to open up to the other and to meet him in his irreducible difference, while sharing his emotional states. This means that, in the view of the two thinkers, for there to be empathy or sympathy, it is necessary for the intentional self to make a movement of exit from itself and of recognition of the other as a subjectivity endowed with the same affective experiences.¹⁰ Pathos is here configured as a movement of reciprocal affective encounter or as a dynamism of transcendence of the intentional subjectivity that implies an overcoming of the individualistic closure of the self and a manifestation of the objective reality of the other as different.

2 EMPATHY AND NEUROSCIENCE: THE DISCOVERY OF MIRROR NEURONS

It should be noted that phenomenological reflections on human empathy and the articulation of sympathetic functions have in fact anticipated from a philosophical point of view what would later emerge in the field of neuroscientific research. In fact, one can immediately perceive a convergence between the phenomenological understanding of empathic experience and the discovery of mirror neurons by neuroscience. As is known, studies on mirror neurons have revolutionized the understanding of the human brain, interpersonal relationships and social behavior. Discovered for the first time in the 1990s by Rizzolatti and Gallese,¹¹ it was understood that these neurons are essential for the process of imitation, empathy and social learning because they are activated both when a subject performs an action and when the subject observes someone else doing it. As attested by neu-

⁹*Ibidem*, p. 235.

¹⁰In this regard, see A. DONISE, *Critica della ragion empatica. Fenomenologia dell'altruismo e della crudeltà*, Il Mulino, Bologna 2019.

¹¹See G. DI PELLEGRINO, L. FADIGA, L. FOGASSI, V. GALLESE, G. RIZZOLATTI, *Understanding Motor Events: a Neurophysiological Study*, «Experimental Brain Research», 91 (1992), pp. 176-180.

roscientific research,¹² mirror neurons therefore constitute the neurobiological basis of empathy and of all simulation behavior. In addition to playing a crucial role in empathy, these neurons influence social learning, allowing us to acquire skills by observing others, both in early childhood and in adulthood. In other words, these neurons allow the human subject to imitate what he sees and to understand the actions of others. This mechanism helps him to learn through observation and to develop a deeper understanding of the emotional states of others.

In the specific case of empathy, mirror neurons come into play when the subject observes the emotional states that emerge from the body of the other. For example, when you see someone suffering or feeling joy, mirror neurons are activated, allowing the observer to experience and share the emotions of the other by perceiving their same emotional state. It should be emphasized that such a dynamism, from the point of view of physical anthropology, represents a key element in the formation of social bonds and in the processes of social interaction. Furthermore, mirror neurons play an important role in understanding the intentions of others because they allow us to “grasp” the mental states of others, understanding their motivations and desires.

Research on mirror neurons has important implications for understanding disorders related to empathy and imitation. For example, the inability of mirror neurons to function properly has been associated with autism spectrum disorders, in which empathy and imitation may be limited or inhibited. However, it should be noted that studies on mirror neurons provide a neurobiological basis for the phenomenological theory of empathy, attesting to its intrinsically corporeal character. Human empathy, then, can only manifest itself as an encounter between two living corporeities that in their mutual exchange recognize each other as different while being able to share each other’s experiences.

3 POSSIBLE CONFIGURATIONS OF ARTIFICIAL EMPATHY AND THEIR IMPACT ON HUMAN AFFECTIVITY

However can the same empathic dynamic described by phenomenology and then attested on a neuro-biological basis by neuroscience also be extended to the relationships between human beings and technological artifacts? Is it possible to speak of “artificial empathy” in this sense? Paul Dumouchel and Luisa Damiano answer this question by analyzing the scenarios of social robotics, and they come to support the possibility of developing a *synthetic ethics* based on the interaction

¹²G. RIZZOLATTI, L. CRAIGHERO, *The Mirror-Neuron System*, «Annual Review of Neuroscience», 27 (2004), pp. 169-192; M. IACOBONI, *Imitation, Empathy, and Mirror Neurons*, «Annual Review of Psychology», 60 (2009), pp. 653-670; V. GALLESE, L. FADIGA, L. FOGASSI, G. RIZZOLATTI, *Action Recognition in the Premotor Cortex*, «Brain», 119/2 (1996), pp. 593-609.

between humans and robotic artifacts.¹³ The two scholars, overcoming both the reductionist and dualist approaches in understanding human pathos, propose a plural methodology focused on the interconnection between various cognitive systems, including artificial ones. Thus, from their point of view, artificial empathy, unlike human empathy, would be the result of a dynamic of “imbrication” between human pathos and a robotic agent programmed with specific purposes of affective stimulation. The two scholars show, in particular, how social robotics places the affective dimension at the center of its investigations in light of the possibility of building robots capable of expressing characteristics of interaction with humans. The so-called affective robots, in fact, arouse the perception of being with another, of being in the presence of someone, being equipped with the ability to know and interpret the affective manifestations of human interlocutors and to establish artificially “empathetic” relationships. But in the case of the interaction between human beings and affective robots, can we speak of authentically empathetic relationships? As Paul Dumouchel and Luisa Damiano always underline,¹⁴ artificial empathy is not comparable to human empathy as it is based on human-machine interactions and not on interpersonal relationships; however, such interactions can stimulate human empathy, promoting it in its authentic expression.

The two scholars also distinguish the internal and external aspects of emotional processes in affective robotics, showing how these actually intersect in a co-evolutionary way in the process of emergence of empathic experience. If external robotics of emotions focuses on the social aspect of anthropomorphic robots that provoke emotional reactions in interlocutors (according to this perspective, robotic agents do not have mental states but simulate/pretend the affective responses of human interlocutors by arousing their emotional reactions), internal robotics of emotions instead intends to model affective self-regulation systems for the same robotic agents in the belief that natural cognitive and emotional properties are artificially reproducible.¹⁵ From this point of view, artificial empathy is understood as a dynamic interaction of a plurality of complex organizational levels that interact with each other in an “imbrication” mechanism. With the application of the synthetic method to affective robotics, we thus arrive at the attempt to artificially recreate emotional mechanisms, leaving space for their possible emergence. The interesting aspect of the conclusions of Paul Dumouchel and Luisa Damiano is that, from their point of view, artificial emotions, such as empathy, although distinct from physiological and psychological ones, are not false. This means that we cannot ignore that form of empathy that emerges in the

¹³See P. DUMOUCHEL, L. DAMIANO, *Vivere con i robot. Saggio sull'empatia artificiale*, Raffaello Cortina, Milan 2019, in particular pp. 102-132, 140-165.

¹⁴*Ibidem*, p. 107.

¹⁵*Ibidem*, pp. 110-123.

relationship between humans and artificial agents, in particular affective robots that would thus assume the role of rings of affective co-determination with human agents. The idea of an affective co-evolution deriving from the interaction between humans and artificial agents is a very interesting avenue of research, especially if applied to the field of social robotics.¹⁶ The implementation of the use of affective robots in crucial sectors of society such as education or assistance to the frail therefore leads to an ethical-philosophical reflection on the impacts of such technologies on the expression and evolution of human pathos,¹⁷ as well as on its most authentic axiological explanation. From the writer's point of view, the interaction between humans and affective robots remains a functional one that cannot replace but only integrate interpersonal care relationships.¹⁸ Robots are not able to implement that empathic dynamism described phenomenologically as a movement of exit from oneself and recognition of otherness as such. Robotic agents do not have the capacity to open up to the world (*Weltoffenheit*) and theirs is a form of automated and purely functional empathy that can certainly stimulate human affective capacities without, however, replacing the presence of the other as a personal You who stands in front of and comes to meet the self as a living revelation. That of affective robots is an "artificial presence" that cannot in any way replace but only support relationships of help and care; if, in fact, artificial empathy generates a dynamic that leads to socially pertinent forms of coordination that facilitate and promote interpersonal relationships, it can constitute itself as an artificial mediator instrumental to the generation and consolidation of authentic social bonds.

4 CONCLUSIONS

From the analysis conducted here, a radical distinction between human empathy and artificial empathy emerges, such that any attempt to apply the phenomenological description of the former to the relationship between human subjects and artificial agents might seem inadequate and perhaps even philosophically inap-

¹⁶On social robotics see V. TRIPODI, *Robotica sociale e assistenza sanitaria* in M. Galletti, in S. Zipoli Caiani (a cura di), *Filosofia dell'intelligenza artificiale. Sfide etiche e teoretiche*, Il Mulino, Bologna 2024, pp. 281-201; P. LIN, R. JENKINS, K. ABNEY (eds.), *Robot Ethics 2.0. From Autonomous Cars to Artificial Intelligence*, Oxford University Press, Oxford 2017; G. TAMBURRINI, *Etica delle macchine. Dilemmi morali per robotica e intelligenza artificiale*, Carocci, Rome 2020.

¹⁷On the impact of social robots on the human affective sphere, see C. BREAZEL, *Designing Sociable Robots*, MIT Press, Cambridge 2002.

¹⁸In this regard, see F. DI BLASI, *Anziani digitali. La risposta della tecnologia ad una popolazione che invecchia*, Armando, Rome 2023, pp. 94-110. For a more general overview of the ethics of care, see L. MORTARI, *Sull'etica della cura*, Vita e Pensiero, Milan 2003; ID., *Filosofia della cura*, Raffaello Cortina, Milan 2025 and C. Palazzini (ed.) *Le relazioni che curano*, Lateran University Press, Rome 2013.

appropriate. However, starting from the anthropological assumption that the human being is “naturally” techno-human,¹⁹ it must be recognized that, faced with the scenarios of contemporary techno-humanity, a cooperation between human empathy and artificial empathy must be understood as structural, as well as necessary.

Cooperation between the two forms of empathy, then, is not only practicable but can also be ethically guided if the full revelation of the human as such is set as its goal. If there is no doubt that the value of the human as an end in itself comes to manifestation in interpersonal empathic relationships, founded on the mutual recognition of the I and the you as personal and valuable realities, it can also come to light in the forms of artificial empathy when it integrates itself as a “processual medium” for the promotion of inter-human dynamics but also of anthropo-artificial interactions that are ethically established. For a re-understanding of pathos within the framework of an anthropology of the artificial, it is necessary to address the forms of affectivity that emerge from the interaction between humans and artificial agents, in order to show their potential and limits for the promotion of authentic interpersonal affective relationships. These are, from the writer’s point of view, the only ones with and in which the human being brings to completion his original pathos, which is first and foremost being struck by personal otherness,²⁰ thus discovering his fullness of meaning and his axiological destination.²¹

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¹⁹In this regard, see P. BENANTI, *La condizione tecno-umana. Domande di senso nell'era della tecnologia*, EDB, Bologna 2016 and Id., *Pensare la tecnologia*, in C. Caltagirone, L. Curcurachi (eds.), *La condizione tecnoumana tra eccesso ed eccedenza*, Morcelliana, Brescia 2021, pp. 99-109.

²⁰On pathos as the original dimension of the human being, see F. BOTTURI, *Etica degli affetti?*, «Annuario di etica», 1 (2004), pp. 37-64; C. VIGNA, *Etica del desiderio come etica del riconoscimento*, Orthotes, Naples-Salerno 2015.

²¹The idea of interpersonal relationships as a perspective of human fulfillment emerges in C. CALTAGIRONE, «Sono me grazie a te». *Per un'antropologia e un'etica delle relazioni umane*, Studium, Rome 2022.