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DANCING CYBORGS, ROBOTS, AVATARS, AND HOLOGRAMS: RECONFIGURING AUDIENCE RECEPTION IN PERFORMING ARTS

SUMMARY: “To dance is human” (Hanna, 1979), but dancers on stage may be cyborgs, robots, avatars, or holograms. The boundaries between these creatures and their creators are sometimes blurred (voluntarily or not). The phenomenon is not new, but advances in technology (including AI, deep fake) broadens their use, strengthens this confusion and deepens the “uncanny valley” (Mori, 1970). If (modern, post-modern and contemporary) dance is challenging traditional spectatorship schemes in performing arts (often based on finding narrative interpretations), these “unidentified dancing beings” emphasize dance specificities, forcing the spectators to question their relationship with dancing movements and their authors and the semiotic processes through which these movements acquire meaning. This paper analyses the example of *ROBOT* (a piece choreographed by Blanca Li) and underlines how this shift is editing spectator’s routine when attending performing arts in general and dance in particular, from both a semiotic and signification-oriented perspective.

KEYWORDS: dance, cyborgs, robots, avatars, holograms, uncanny valley, audience reception, digital performance.

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1. Introduction

In recent years, the presence of non-human performers on the dance stage has evolved from a curious novelty into a sustained artistic strategy. Choreographers such as Blanca Li have gone beyond mere technological spectacle to interrogate fundamental questions of embodiment, agency, and spectatorship by placing cyborgs, robots, avatars and holograms alongside (and sometimes in place of) human dancers. While traditional dance frames movement as a uniquely human, intentional act, these “unidentified dancing beings” force us to reconsider the very definition of dance.

From a semiotic perspective, dance can be understood as a structured system of signs, where movements function as representamina interpreted by spectators according to culturally established codes (kinesic, proxemic, rhythmic). Introducing non-human performers into this system destabilises these codes and therefore modifies the very conditions under which meaning is produced.

This paper examines how the integration of robotic and virtual performers in live performance disrupts conventional audience expectations and reconfigures the act of perception. Drawing on the case study of Li’s *ROBOT* (2013), in which eight human dancers share the stage with seven NAO robots and automaton instruments by Maywa Denki, we explore three interrelated dimensions: the semiotic boundary, how robotic movement challenges the human/non-human divide and problematizes the “uncanny valley” effect; spectatorship and agency, in what ways non-human performers provoke reflection on intentionality, authorship, and the live spectator’s role in meaning-making process; and technological co-creation, how advances in artificial intelligence and customisable robotics shift machines from mere tools to potential co-creative partners.

By situating *ROBOT* within broader debates in performance studies, semiotics, and robotics research, this study demonstrates that dancing machines do more than entertain, they open a “fracture” in our habitual sign-systems, compelling us to ask not only “Can machines dance?” but also “What does it mean to dance?”. In so doing, they renew the art form by transforming both the choreography on stage and the cognitive choreography of the audience.

2. Dance as a Semiotic System

This “cognitive choreography” corresponds to what Peirce would describe as the continuous generation of interpretants, and to Eco’s view of meaning as an open, culturally coded process.

Drawing on Peirce and Eco, dance may be described as a multimodal semiotic field where gestures, spatial configurations, rhythm, energy and proxemics act as signs. A movement (representamen) refers to an object (an intention, an emotion, a fictional action, or even a choreographic code) and generates interpretants in the mind of the spectator. Eco’s emphasis on cultural codes is particularly

relevant: spectators decode movements according to learned conventions shaped by a history of dance, bodily schemas, and shared imaginaries.

Inserting non-human bodies into this system introduces new sign-vehicles that neither obey nor fully break these codes, producing a state of semiotic tension essential to the spectator's interpretive activity. Robotic and virtual performers thus act as powerful operators of code perturbation, revealing dance as a fundamentally semiotic practice.

3. An Intriguing Choice

In July 2013, at the Montpellier Festival, choreographer Blanca Li created *ROBOT*, a show featuring eight dancers, seven NAO robots¹ and automaton instruments by Maywa Denki.²

While the title of the show and the appearance of the NAO robots leave no doubt as to their nature, their flexibility and attitudes disrupt the preconceptions the spectator may have of robotic movement. The NAO's gestures seem intentional, their energy like a living thing. They sow confusion. Confronted with human presence, they question and challenge it, forcing us to rethink the increasingly blurred boundaries between the human and the technological; between the living and the non-living. Blanca Li, an internationally acclaimed choreographer born in Granada in 1964, has deliberately chosen to make robots dance... An intriguing choice that we shall attempt to analyse.

¹ In her presentation of the robots, Blanca Li emphasises their quasi-human characteristics, describing them as follows:

At 58 cm tall, NAO has two arms, two legs (9 tactile sensors and 8 pressure sensors), two eyes (2 HD cameras) and a mouth (4 microphones), just like everyone else! He is gifted in vocal and visual recognition, the basis of his communication capabilities, which use the interface of a vocal synthesiser, LED lamps and 2 high-fidelity loudspeakers. (Li, n.d., author's translation)

² Blanca Li also highlights the role of the Maywa Denki automaton instruments, whose material and mechanical production of sound contrasts with digital music and contributes to the semiotic tension between organic, mechanical and technological regimes within the performance:

The musical instruments in the Tsukuba series (classified like their traditional inspirations as guitar, saxophone, keyboard, voice, percussion, etc.) are complex automata that actually play music via electromechanical systems operated by humans. No electronics. The functional beauty of the machinery is revealed during musical performances designed as a challenge to our contemporary world, where music has become just another piece of information, a stream of data. Maywa Denki's musical instruments bring us back to music that is substantial and non-informational. Against the flow of bits from iPod headphones, the beat of live music created on stage. Against the digital sound produced synthetically or by sampling electronic recordings, the sound of physical objects. But not just any objects: "back to the future" objects, perfect automata whose form gives them spirit! (Li, n.d.)

Although there is a fair amount of research into “Dance + robot”, most of it is in the field of robotics and has nothing whatsoever to do with live performance. Dance, like walking (one of the greatest early challenges for humanoid robots) a few decades ago, represents a technological challenge for specialists in artificial movement: to give the impression that the robot is dancing by making it more flexible and fluid; by extending its repertoire of movements with non-utilitarian, non-economic sequences; by making it follow a rhythm that is disconnected from any logic of efficiency. Of all contemporary humanoid robots, NAO is the most widely used in the world of research and education (computer science, artificial intelligence, psychology, etc.; Li, n.d.). But its technical characteristics also make it particularly attractive to the choreographer Blanca Li. This is something that SoftBank Robotics boasts on its NAO homepage: “[Blanca Li’s *ROBOT*] the world’ first show to feature robots as headliners, it has already won over audiences in Europe and North America” (Softbank-robotics, n.d.).

NAO is in fact the best example of the evolution of robotics: it is no longer just a question of creating machines to help humans with heavy, boring or thankless tasks, but of designing (also) customisable, individualisable “companions” capable of entertaining, interacting, learning, etc.:

Autonomous, NAO is the artificial companion of tomorrow, able to help and entertain humans, interacting with its own people or with us! (Li, n.d.)

NAO³ is an engaging, interactive and customisable companion robot. Everyone can build their own experience with specific applications according to their imagination. (Softbankrobotics, n.d.)

NAO is designed to be personalised: adding content, using this or that ability, enriching its personality and even developing new skills. NAO is your robot and the *Choreographer* software will help you personalise it. (Softbankrobotics, n.d.)

In short, NAO is endowed with many qualities that make it exceptional and are the source of its commercial success. But it still does not answer the question:

³ More specific description of NAO is given by Verdier and Nevaoux, one can read as follows:

NAO is now one of the best-known humanoid robots and undoubtedly the most widely used. It appeals thanks to its small size, childlike appearance, and wide range of capabilities. In 2015, there were already around 5000 units in use in more than 50 countries and at least 400 research, teaching, and healthcare establishments. [...] Nao is the first creation of the Aldebaran company. It weighs 4,3 kg and measures 58 cm. It has articulated legs, arms, and hands equipped with numerous sensors: two cameras, four microphones, sonar, pressure sensors, an inertial measurement unit, etc. Its cognitive abilities enable it to interact with a conversation partner, grasp objects, understand hundreds of commands, and even get up when it falls. (Verdier, Nevaoux, 2022, author’s translation)

why integrate robots into the cast of a choreographic show when you can simply work with real dancers?

There are many hypotheses,⁴ but Blanca Li herself provides part of the answer to this question:

In ROBOT, I address the relationships between human bodies and artificial ones and questions such as: Where are the borders between “us” and “them”? [...] The fragility and child-like imperfections of these small humanoids are magnified and conveyed to the audience while interacting with human dancers. (Li, n.d.)

Semiotically speaking, Li is not merely adding an exotic element to the stage; she is setting up a confrontation between different regimes of signification. NAO does not only function as a character or a prop but as a metatext that comments on and reframes the human dancers' movements. It is these two elements that we are going to try to understand better: the question of the boundary between them and us, and the relationships with spectators and flesh-and-blood dancers.

4. Is the “Dancing Robot” an Oxymoron?

The question is obviously provocative and purely rhetorical, because as we find in many the definitions of dance, it is specific to humans and can only be used metaphorically for animals, and a fortiori, things... The “human” character is in fact essential to dissociate dance, a choreographic and artistic work, from its metaphorical use for other phenomena in nature, such as the action of the wind on a field of poppies or the courtship of an animal. In the first case, it is a meteorological cause that provokes a physical reaction on part of the surrounding flora. Much less poetic, we admit (which is one of the advantages of the metaphor). In the second case, it is a characteristic instinctive reaction which, because of its effectiveness in reproducing the animal in question, has been retained by natural selection. A physical reaction in the first case, a biological characteristic in the second. It is not a question of dancing. Without this clarification of the human character, Paul Bouissac notes a “point-by-point correspondence” between a certain definition of live performance and the definition of lekking, a technical term used by ethologists to designate a collective phenomenon that is attested in numerous animal species (P. Bouissac, personal communication, April 23–24, 2010). Copeland and Cohen, in the introduction to *What is Dance?* also claim this distinction, and for the same reasons:

⁴ For example, choreographers may wish to explore new kinesthetic vocabularies that human bodies cannot easily produce; they may use robots to materialize abstract or non-human agencies on stage; or they may seek to question spectators' perceptual and interpretive habits by staging entities situated at the edge of the human and the artificial. Robots may also be introduced to comment on contemporary technological imaginaries, or to expand the semiotic possibilities of dance through the interplay between mechanical gesture, rhythm, and human movement.

A broad definition [...] which refuses to distinguish between human and nonhuman motion enable us to describe as “dances” the movement of waves or the orbits of the heavenly bodies. In addition, this usage enables biologists like Karl von Frisch (in *The Dancing Bees*) to describe the movement patterns of non-human creatures, like bees, as dances. (Copeland, Cohen, 1983, p. 1)

This brings to mind Sue Jones’s famous article:⁵ *Do Rabbits Dance?* (1999).

The question is what distinguishes humans from animals and things. If we take as our hypothesis Descartes’ dualism, with which our Western society is particularly imbued, the soul is *res cogitans* [the thinking thing] and the body, *res extensa* [extended thing/bodily substance]. As Jean-Pierre Sirois-Trahan points out, in Part 5 of the *Discours de la méthode*, Descartes discusses the difference between animals and humans by comparing animals without souls to automata or moving machines (cf. Sirois-Trahan, 2008). Put differently, robots function as mechanical automata, devoid of the soul-like intentionality that defines human action.

So, we could quickly conclude with this syllogism: dancing is the prerogative of humans, robots are not, so NAO cannot dance.

These two premises therefore seem, a priori, indisputable (we will come back to this later): on the one hand, dance (creation and/or interpretation) is the prerogative of humans; on the other, robots, even in their humanoid forms, cannot be considered human. However, they can imitate humans—sometimes convincingly—thus complicating the distinction between human and non-human performers and reinforcing the need to interrogate how such imitation operates and is perceived on stage.

In semiotic terms, robotic imitation produces an iconic sign (resemblance to human movement), but the cause of the gesture remains mechanical, thus shifting the interpretant toward ambiguity: is the spectator decoding a human-like action, a programmed effect, or a symbolic commentary on artificiality? This ambiguity is fundamental to the meaning-effects of *ROBOT*. It already indicates that what we call “dance” is less tied to a specific ontology of the body than to a specific regime of signification and interpretation.

We thus return to our initial question: if we can agree that dance (except in the metaphorical sense) is indissociable from a human body, why are we increasingly confronted with dance formats in which digital, virtual, artificial and mechanical bodies are so often present?

⁵ In her 1999 article, Sue Jones investigates the ontological status of “dance” by examining non-human cases (the “dancing rabbit”) to question the agency and intentionality required for movement to qualify as dance. Her analysis underscores the need to rethink the very definition of dance beyond human performers, directly informing our inquiry into robotic and cyborg embodiments on stage.

5. Duplicates That Affect Our Perception

Robotic doubles introduce what Peirce would call “multiple sign-functions”: a single gesture simultaneously acts as an icon (it resembles human movement), an index (it points to an underlying algorithm or program), and a symbol (it stands for “technology”, “mechanisation”, or “the future”).

Eco’s concept of the “open work” helps to understand why this proliferation of possible readings intensifies spectatorship: the meaning of the movement is no longer anchored in human intentionality but becomes a site of negotiation between human and non-human agencies.

The first elements of the response proposed by Blanca Li herself take us back to the notion of borders and difference(s). The idea is to show us just how different doubles and originals are by confronting them and bringing them together on stage to affect our perception of both the original and the double.

In 1999, Merce Cunningham created *Biped*, a choreography in which stylised silhouettes are (sometimes) projected simultaneously with the real dancers. Paul Kaiser, the designer of these animations, justified their use as follows: “The dance is successful if your perception of the dance has been affected by the projections, even when they are not present on the screen” (Kaiser, as cited in Broadhurst, 2007). But how can these doubles (avatars, holograms, robots, automatons, etc.) affect our perception of dance? Béatrice Picon Vallin suggests a way forward, based on digital avatars that we could extend to humanoid robots such as the NAO used by Blanca Li:

These images, multitudes of ectoplasms derived from chemistry, light, numbers and electronics, made up of pixels, seem to speak of death, whereas the body would speak of life [...]. And it is well known that it was by bringing the breath of death to the stage that Meyerhold, with his symbolist dramaturgy, and later Kantor, gave us a glimpse of the living of their time. (Picon-Vallin, 2001, p. 11; author’s translation)⁶

Similarly, Pascal Roland, in his book *Danse et imaginaire*, emphasises the effect of amplifying differentiation through the confrontation of the similar:

⁶ In the original French version, Picon-Vallin writes:

Ces images, multitudes d’ectoplasmes issus de la chimie, de la lumière, du nombre, de l’électronique, composés de pixels, semblent parler de la mort, alors que le corps parlerait de la vie [...]. Et l’on sait bien que c’est en faisant passer sur scène le souffle de la mort que Meyerhold, avec la dramaturgie symboliste, et plus tard Kantor ont donné à voir le vivant de leur époque.

The motif of the double does not necessarily reproduce the identical and enhance the value of the one; on the contrary, unity only exists through its reproduction, the ideal twin being impossible because it necessarily involves a differentiation between two units. The same is no longer reduced to the identical but is enriched by the similar. (Roland, 200, p. 169; author's translation)⁷

The co-presence of the dancer and his non-human double is therefore essential to provoke this effect of differentiation. An effect aimed at the audience, enabling them to participate in and co-create the artistic experience as defined by Nicole Everaert Desmedt:

Any artistic experience, whether of production or reception, implies the double necessity of mastering a symbolism, and of breaking it to allow the intrusion of the forces of primacy that we will call imaginary. [...] The imaginary, through the movement of its infiltration into symbolism, provokes a displacement in the codes, a modification of the filters and thus allows another access to the as yet uninterpreted real, an as yet unformulated knowledge. (Everaert-Desmedt, 1990, p. 109; author's translation)⁸

The coexistence of the real body and its mechanical replica is precisely what allows this imaginary world to develop, as Béatrice Picon-Vallin also emphasises with regard to the different registers of presence: "The coexistence of different registers of presence implies a tension between the living body and the dematerialised body, which is conducive [...] to the development of the imaginary world" (Picon-Vallin, 2001, p. 29). Abel Gance also gave this explanation, which we can also extend to the robot:

The addition of image and reality gives image and reality a new dimension, a kind of fourth dimension that undeniably enriches a show. In my opinion, the arts are all about that. It is about creating a new dimension in the spectator's mind. (As cited in Picon-Vallin, 2001; author's translation)⁹

⁷ The original French version reads as follows:

Le motif du double ne reproduit donc pas nécessairement l'identique et la valorisation de l'un, mais, au contraire, l'unité n'existe que par sa reproduction, la gemellité idéale impossible puisque relevant nécessairement d'une différenciation entre deux unités. Le même n'est, des lors, plus réduit à l'identique mais enrichi par le semblable.

⁸ In the original French text:

Toute expérience artistique, qu'il s'agisse de production ou de réception, implique la double nécessité de maîtriser un symbolisme, et de le rompre pour permettre l'intrusion des forces de la priméité que nous nommerons imaginaire [...]. L'imaginaire, par le mouvement de son infiltration dans le symbolisme, provoque un déplacement dans les codes, une modification des filtres et permet donc un autre accès au réel non encore interprété, une connaissance encore informulée.

That is precisely what it is all about: creating a deviation, an astonishment, a disturbance, even a sense of unease, which will raise questions, make people think, force them to ask questions and modify their filters to allow the artistic experience to take place.

From a semiotic point of view, the double functions as a meta-sign: it does not simply add one more body but comments on, reframes, and sometimes undermines the sign-value of the original dancer's movements. The spectator is thus confronted with a layered signifying structure where human and robotic bodies constantly re-encode each other.

This unsettling effect produced by the hyper-realistic portrayal of the double clearly evokes Freud's notion of the *Unheimlich*. On one hand, the unsettling strangeness of the robotic dancer; on the other, the disquieting familiarity (as translated by Jean-Luc Steinmetz) of the double. This tension arises both from the dehumanization of the real dancers and the humanization of the robots. Blanca Li attempts to blur the boundaries between her dancers and the NAO as much as possible: images of metal and electronic skeletons and shells are projected onto the dancers' bodies, costumes of pipes and boxes under which you doubt you will find a human, strings marionettising the dancers, etc.; touching NAOs that fall, that are dressed in overalls, that look you in the eye, etc. The interplay between real and fake and the confusion it creates is, as Philippe Noisette points out, "a recurring element in choreographers approaching the virtual" (Noisette, 2010, p. 104).

It is therefore clear that the choreographers are deliberately playing with the double in order to create confusion and an artistic experience. From this observation, we can also assume that the greater the realism of the double, the greater the disturbance / sensation of *Unheimlich*. And we might also assume that the greater the disturbance, the more profound the artistic experience. But there is another phenomenon to take into account: the *Uncanny Valley*.

6. The Uncanny Valley

Masahiro Mori has plotted the supposed emotional reaction of humans to human-looking robots: the more the robot resembles a human, the greater our empathy for it. However, this rising curve (realism on the *x*-axis, empathy on the *y*-axis) falls sharply (Uncanny Valley) when the robot resembles a real human a little too closely. This disturbing familiarity provokes rejection and even fear rather than empathy.

⁹ Original French version:

L'adjonction de l'image et de la réalité confère à l'image et à la réalité une dimension nouvelle, une sorte de quatrième dimension qui enrichit incontestablement un spectacle. A mon avis, les arts ne visent qu'à cela. Il s'agit de créer une dimension nouvelle dans l'esprit des spectateurs.

From a semiotic angle, the uncanny valley is not only a psychological effect but a semiotic threshold: it marks the limit at which the iconicity of the robot (its resemblance to humans) enters into conflict with indexical and symbolic cues of artificiality, producing contradictory interpretants in the spectator. The sign becomes internally divided: what it shows (iconically) and what it indicates (indexically) are no longer easily compatible.

What Blanca Li succeeds in producing in her show *ROBOT* is to make different bodies resonate within the same performance, to offer a continuum of dancers who are more or less human, more or less machines, more or less disturbing, more or less disruptive, without ever falling into the Uncanny Valley and losing the spectator's support for her project. Between *mise-en-abîme*, echo and distorting mirror, it allows the paradoxical reception (cf. Sirois-Trahan, 2008) that is essential to the artistic experience. A paradoxical reception that is nonetheless very "Western".

According to Machiko Kusuhara, a professor at Waseda University, Japanese people, and Asians in general, suffer less from the *unheimlich* nature of robots (Sirois-Trahan, 2008). The explanation may lie in the fact that in Buddhism, there is no difference between the lives of human beings and other animals:

Perhaps we should see the difference between, on the one hand, Asian animist religions (for whom things and animals have souls) and, on the other, the Judeo-Christian religion and its cartesian avatar (for whom machine animals have no souls), as the main reason for the difference in reactions to automata. (Sirois-Trahan, 2008, p. 204; author's translation)¹⁰

In an interview with Masahiro Mori (the author of *Uncanny Valley*) conducted by Zaven Paré, he asserts that this impossible division linked to Buddhism is much more general and also concerns the link between creator and creation: "When you create this thing, you become this creation [...]" (Mori, as cited in Paré, 2012, p. 204).

This shortens the continuum and further softens the already blurred boundaries. When, later in the conversation, he explains to Zaven Paré that in Buddhism, Buddha statues are only transitory instruments, Paré asks him whether robots could also be transitory forms of man. Mori replied, "There is nothing to stop it..." (Mori, as cited in Paré, 2012, p. 204).

Could Sue Jones' rabbits dance in Asia? This calls into question our initial premise that robots are not human because they have no soul. Our "human" premise is certainly a *sine qua non* condition for the emergence of dance, but not

¹⁰ Original French version:

Peut-être faut-il voir la différence entre, d'une part, les religions animistes asiatiques (pour lesquels les choses et les animaux ont une âme) et, d'autre part, la religion judéo-chrétienne et son avatar cartésien (pour lesquels les animaux-machines n'ont aucune âme), comme la principale raison de la différence dans les réactions que suscitent les automates.

so much in that it is a matter of the soul as Buddhists endow animals and things with, but in that it is *res cogitans*, a matter of intentionality and full consciousness. In her preface to the new edition of *To Dance is Human*, Hanna wishes to emphasise this human criterion. And particularly on one element of her definition in this regard:

My phrase “from the dancer’s perspective”¹¹ applies not to the conceptualization but to the purpose of dance. This proviso is meant to deal with ethnocentrism [...] as well as the contrast between intentional selection of movement and other animals’ programmed action sequences. (Hanna, 1979, p. XIV)

The human nature of dance is a necessary but not sufficient condition. Intentionality, mindfulness, body-mind centering and sub-partition are all elements linked to the human and are also sine qua non conditions for the emergence of dance. So, what about the intentionality of the robot? Advances in artificial intelligence will certainly force us to study this question in the medium or short term: self-programming, decision-making, consciousness, feelings are already subjects of study in robotics... From a semiotic perspective, the key issue is not whether robots “really” feel, but how their actions are read as signs by spectators embedded in particular cultural and technological contexts. In the end, we have asked more questions than we have answered...

7. Conclusion

This study has shown that the integration of cyborgs, robots, avatars and holograms in dance performance is not simply a technological innovation but a profound semiotic event. In *ROBOT*, movement becomes the site of a conflict between heterogeneous regimes of signification: human intentionality, mechanical causality, choreographic authorship, and spectators’ cultural decoding practices.

From a Peircean perspective, NAO’s gestures constitute *overdetermined signs*: they operate simultaneously as icons (through resemblance), indices (through mechanical execution), and symbols (through cultural associations of artificiality). This triadic saturation produces divergent interpretants, which destabilise the spectator’s interpretive habits and generate what we may call a semiotic bifurcation: a moment where the sign cannot be anchored in a single enunciative source.

Eco’s notion of the interpretant further illuminates this process. Because meaning is culturally coded and always open, the presence of a robotic performer

¹¹ Judith Lynn Hanna’s definition of dance, grounded in intentionality and human agency, highlights the centrality of purposeful and culturally coded movement:

[...] dance is defined as human behaviour composed, from the dancer’s perspective, of purposeful, intentionally rhythmical, and culturally patterned sequences of nonverbal body movement which are not ordinary motor activities, the motion having inherent and aesthetic value. (Hanna, 1979, p. 48)

multiplies the possible readings of a movement and shifts the semiotic burden toward the spectator. In this sense, *ROBOT* reveals that dance meaning does not arise from bodies alone but from the relational semiosis circulating among human and non-human agents.

The key theoretical implication is that robotic performers introduce a new regime of enunciation into dance. Their gestures do not express intention in the human sense, yet they produce an *effect of enunciation* that spectators interpret as meaningful. This dissociation between intention and enunciation challenges one of the foundational axioms of dance studies—the idea that choreography emerges from human intentionality—and calls for a renewed semiotic framework capable of accounting for distributed or composite enunciators.

In this light, *ROBOT* is not merely a playful confrontation between dancers and machines; it performs a reconfiguration of the semiotic ontology of dance itself. By staging movements that oscillate between the organic and the artificial, the work exposes the instability of dance as a signifying practice and reveals that meaning arises not from the purity of embodiment but from the tension between heterogeneous bodies and codes.

Ultimately, dancing machines compel us to reconsider what a danced sign is, who or what may produce it, and how spectators construct meaning in conditions where intentionality is uncertain, ambiguous, or multi-layered. Far from threatening the essence of dance, robotic performers broaden its semiotic horizon and open new possibilities for rethinking embodiment, agency, and movement in the twenty-first century.

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