

Chapter 4: Programming (as) choreography: a series of kinect videos by Mathilde Chénin

A simple video format is presented online – no transfer to monitor or large-scale projection for an exhibition space, just a link, a click, and a small-sized window typical of video-sharing web platforms. White, flat backgrounds. On them, coloured lines appear and disappear, sometimes too quickly for the eye to follow. They join to temporarily form planes that will twist, shift, and disband, replaced by a different form a few seconds later. The shapes constantly change but do not radically vary, remaining in a state of continuous but undifferentiated novelty, neutralising any appreciation of new-ness. No sound accompanies their movements, which end as abruptly as they start after a few minutes of activity.

In the early 2010s, visual artist Mathilde Chénin was interested in certain aspects of choreographic practice – most notably scoring – and in ‘*pratiques algorithmiques* [algorithmic practices]’,¹ including programming in object-oriented languages.² These concurrent interests led her to explore their interrelations in a series of video works using kinect cameras: *Prototype distance* (2011), *Danse pour deux dans la cuisine, petit déjeuner* (2012), *Danse pour deux dans un escalier, un dimanche* (2012), and *CLOb* (Collective Large Object, 2013).

As a visual artist, Chénin is an example of the choreographic field’s expansion, integrating practitioners that come from educational/training backgrounds that are not (solely) corporeally and kinetically focussed. In this way, her work exemplifies how (expanded) choreography has migrated towards artistic fields beyond dance, as well as the methods, approaches, and aesthetic paradigms implicated by such a migration. This migration can be understood in a context which has seen choreography come closer to the visual arts, resulting in novel formats, modes of presentation, and production/reception processes. Therefore, while Chapters 5 and 6 investigate expanded works by artists firmly anchored within a choreographic frame of reference – be it through their education, biography, artistic methods, or presentation formats – Chénin’s positionality

1 Cf. for instance Chénin, Mathilde: *Untitled Research Project*, undated, unpublished, p. 1.

2 Chénin, Mathilde: Interview with the author (July 2016 and September 2017).

provides insights into translations that occur when choreography is reactivated but also *transformed* within other artistic fields. As outlined below, her series of kinect videos touches upon cornerstone notions in choreographic history and theory – notably scoring, notation, and writing – thus manifesting the way such notions may be interrogated from an interdisciplinary position.

Kinect cameras are motion-sensing and motion-capture devices; they were mainly conceived as commercial technology (e.g. for gaming), but they have been appropriated in ways that deviate from commerce-related applications. They collect data on movement in two ways: skeleton tracking – the camera recognises a human skeleton and follows its movements across time – or the creation of “depth maps”.³ To create a depth map, the kinect camera emits an infra-red laser beam that hits and bounces back from objects; the camera can then infer the distance and hence the position of the object in space. Doing this for all surfaces in its scope, a kinect camera generates a “map” with coordinates of depth-positions. To create her series of videos, Chénin placed people moving in front of (a) kinect camera(s) and programmed the camera(s) to collect different kinds of information – including the position of specific parts and limit-points (i.e. the highest, lowest, further right and left points) of each body – and to update this information as long as the bodies remained within its/their scope.⁴ In her videos, this information is translated into visual forms made of lines and planes. These forms may represent the distance between points within a single body – e.g. neck to wrist joint [Figure 13] – or what the artist calls the ‘*espace limite* [liminal space]’ of bodies – i.e. the form defined by the highest, lowest, furthest-right and furthest-left points of a single body; or the distance between the bodies of two different users [Figure 14].⁵

3 Technical information about kinect cameras was provided by Mathilde Chénin and only relates to the version of the kinect she used. Kinect cameras also have RGB sensors. Ibid.

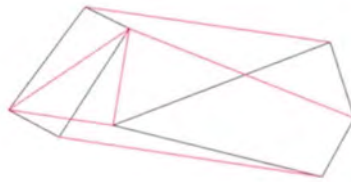
4 Ibid.

5 Chénin, Mathilde: Email to the author, June 2016.

Figure 13: Video still from Mathilde Chénin's *Prototype distance*. A central point (head or neck) is connected to other body parts. Source: Chénin, Mathilde: *Prototype distance*, 2011 variable durations, <http://www.mathildechenin.org/proto/prototype-distance/> (August 2020). No re-use without permission.



Figure 14: Video still from Mathilde Chénin's *Danse pour deux dans un escalier, un dimanche*. The planes formed by the black lines represent the "liminal space" of each user, while the red lines represent the distance between the two users. Source: Chénin, Mathilde: *Danse pour deux dans un escalier, un dimanche*, Québec: *La Chambre Blanche* 2012, 01:47, <http://www.mathildechenin.org/proto/danse-pour-deux-dans-un-escalier-un-dimanche/> (August 2020). No re-use without permission.



Therefore, the source of the videos is the human body and its actions; at the same time, however, the result presents no anthropomorphic form and, without knowledge of the production process, it is possible to completely overlook the connection to a human body figure. The works are related to dance nominally (through the titles of two of the videos), but their performance of dance remains metaphorical, replaced by low-key, abstract video art. Based on these discrepancies, this chapter interrogates how Chénin's series of videos are choreographic and, consequently, what conception of choreography is ac-

tive within them. Drawing on an analysis of the videos themselves – as well as a series of discussions with the artist and a review of her writings – it presents the works as enacting a qualitative transformation of choreography through its existence in media including, but not limited to, the (dancing) body – rather than through a focus on the loss, absence, or technological mediation of corporeality. This transformation uncouples choreography and embodiment by investing in a multiple choreographic ontology, also displayed by Feuilletian choreo-graphies in their multiple, (im)material forms [Chapter 2].

A corporeal source of reference that is lost

The starting point for all the videos considered here is bodily movement. In *Prototype distance* and *Danse pour deux dans un escalier, un dimanche*, these movements are simple improvisational dance motions performed by Chénin herself and an uncredited second person [the “users”]. In *Danse pour deux dans la cuisine, petit déjeuner*, as may be expected, they are “everyday” motions of two people taking breakfast. In *CLOb*, they are the movements of a group of people collectively trying to build a dome structure out of individual pieces [Figures 15 and 16].

Figure 15: The dome of CLOb in construction. Photograph: Ouidade Soussi-Chiadmi and Pierre Friour. Source: Chénin, Mathilde: CLOb (Collective Large Object), undated, <http://www.mathildechenin.org/clob/clob-collective-large-object/> (August 2020). No reuse without permission.



Figure 16: The completed dome of CLOb. Photograph: Ouidade Soussi-Chiadmi and Pierre Friour. Source: Chénin, Mathilde: CLOb (Collective Large Object), undated, <http://www.mathildechenin.org/clob/clob-collective-large-object/> (August 2020). No re-use without permission.



In the case of *Prototype distance*, the camera “knows” that the objects in its optic field are human bodies, as the programme Chénin created requires the kinect to track skeletons. Here, the camera recognises human bodies by following their joints’ movement across time; this includes how each person’s joints relate to each other and to another person’s joints in space.⁶ Even when skeleton recognition is not active – i.e. when the camera only registers the body as one more volume that bounces back laser beams – the videos contain information drawn from the bodies that acted in front of the camera, including how the “limit” points of each person form geometric shapes (*Danse pour deux dans un escalier, un dimanche; Danse pour deux dans la cuisine, petit déjeuner; CLOb*), or via the form created in the space between two different bodies (*Danse pour deux dans un escalier, un dimanche; Danse pour deux dans la cuisine, petit déjeuner*). Chénin confirms this basis in the movements of the human body by connecting her thinking when developing her programmes with Rudolf Laban’s notion of the kinesphere – a visualisation and conceptualisation of the space around the body.⁷ A Labanian influence is also identifiable in the notion of the “*espace limite*” – the two-dimensional plane occupied by a single body and defined by its extremities – that is visually similar to Laban’s vertical and horizontal planes.

Even if the videos are based on people moving, some of them expand to also capture the movement of non-human, inanimate presences in the kinect camera’s field. For example, in *Danse pour deux dans la cuisine, petit déjeuner*,

6 Chénin: Interview.

7 Chénin: Untitled Research Project, p. 5.

objects used in breakfast were captured by the camera even if this was not Chénin's intention.⁸ In *CLOb*, it was one of the work's aims to introduce inanimate objects and record their interactions with human users; the artist and her collaborators Bachir Soussi-Chiadmi and Sarah Garcin programmed the camera to also capture the positions of the coloured sticks manipulated by the participants in order to form the dome.⁹ Such simultaneous treatments of animate and inanimate, human and non-human performers reveal the kinect's camera's telling confusions between the two. In the case of the breakfast scene – where objects were not purposefully recorded – the camera sometimes interpreted them as extensions of a human body, amalgamating them with their user. In other words, since its skeleton tracking system was off, it could not tell whether or not the object in question was a human being. Even when the skeleton tracking system is on, the camera can miss the human figure; in order for it to recognise a body in an unusual position – for instance bent in two or performing a headstand – it would have to track its movements from a standard starting position (standing upright with arms in the air).¹⁰ In the case of the dome construction, the double interest in the motion of human and non-human entities was translated into practice by instructing the camera to use different programmes for each; it projected its infra-red beam to create a depth-map recording human movements, while simultaneously applying a colour-recognition programme to capture the sticks – a complex procedure whose results were not fully representative of the scene.¹¹ In other words, in the world of the kinect – especially in cases where no skeleton recognition is used – the limits between animate and inanimate bodies, human and non-human ones, are fuzzy.

Apart from bringing the representation of human and non-human movements closer, the creation of the visualisations includes dephysicalisation; the movement in the videos is detached from the material, organic, living medium which initially moved. Consequently, the videos marginalise the purportedly-fundamentally corporeal mode of reception that emerges in response to dance as a bodily act, relating to what John Martin termed “metakinesis”.¹² The videos' disembodiment render corporeally-empathetic processes of reception inadequate. Moreover, the videos display a depersonalisation of motion through abstraction; the users are visualised by generic lines, with no correspondence to their specific identities or situations. While using motion-capture technology,

8 Chénin: Interview.

9 Chénin: Email.

10 Chénin: Interview.

11 Chénin: Email.

12 Martin, John: *The Modern Dance*, Princeton: Dance Horizons 1989 [1933], pp. 12–15.

therefore, the videos are opposed to one of the main traits of choreographic applications of such technologies, as explained by artists Martine Epoque and Denis Poulin:

[M]otion capture (Mocap) makes it possible to cut off dance from one of its fundamental characteristics: the obligatory presence of [sic] physical human body. But if Mocap permits to release the dance of the dancer's body, undoubtedly it does not allow releasing the dancer himself. On the contrary, while making it possible to extract his "motion signature", which is quite as specific and representative as his figure, it restores his presence not by his morphology but by his particular way of moving.¹³

Here, not only is the physical body absent, but the individual "signature" – the specificity of the performer – that Epoque and Poulin describe is deviated from as well. Any expression, individual colour, or mood in the movements of the kinect's users are erased in the final product. In these ways, the videos both undo a vision of dance as a primarily-embodied practice and respond to a view of expanded choreography as being 'disconnected from subjectivist bodily expression, style and representation. [...] not a priori performative, nor [...] bound to expression and reiteration of subjectivity'.¹⁴ Through depysicalisation, depersonnalisation, and abstraction, the videos are distanced from the initial corporeal medium. This distance is a concern present in dance notation and scoring, implicating the translation of corporeal motion into, for example, drawing, graphic sign, or letter/text (notation) and vice versa (score). However, while the videos share this consideration with scores and notations, their relationship with embodied (dance) action reveals that they are not reducible to either.

The first reason why the videos fail to function as documentations or notations of corporeal actions is that they *cannot*; quite simply, the kinect camera makes far too many mistakes for a reliable notation.¹⁵ At times, as described above, the camera cannot differentiate between separate objects, creating amalgams of users and their object-extensions (the same issue may arise if two people move in very close contact). At other times, the camera mistakes elements in the background for humans, tracking users who are not there or, inversely, misregistering that a user has left its field of capture when they

13 Epoque, Martine & Poulin, Denis: Nobody Dance. An On-screen Choreography Introducing 'Dance Without Body', in: Tercio, Daniel (ed.): *TeDance - Perspectives on Technologically Expanded Dance*, Cruz Quebrada: Faculdade de Motricidade Humana 2009, p. 74.

14 Expanded Choreography. Situations, Movements, Objects..., Conference presentation, MACBA 2012, <http://www.macba.cat/en/expanded-choreography-situations> (August 2020).

15 Information about these technical limitations was provided in Chénin: Interview.

have only increased their distance from the camera. The light illuminating the scene, the number of background objects creating visual noise, and high-speed movements can all interfere with the camera's function too. Other obstacles of accurate representation are not related to the camera as hardware, but to the visualisation of its data; the "original" movement speed cannot, for example, always be reliably translated in the video due to technical-display limitations. By concealing the exact durations of the movements, the video is incapable of transmitting their dynamics, replacing them with the dynamics of its own geometrical performers.

These issues may be due to the limited technical knowledge of the artist – who is not a specialised kinect user – and may have been resolved in more-recent and technically-advanced cameras. Nevertheless, even if there was technical proficiency and capacity to accurately represent the actions in front of the camera, Chénin has made specific choices that indicate this was not her aim; the videos are not notations also because they purposefully undermine movement reconstructability. The lines and planes in the works do not visually resemble the body's forms; this may be a characteristic of several notation systems – Labanotation being a prime example – but, in contrast, Chénin's de-anthropomorphised forms do not allow us to *infer* the body's posture, either. Visualisations connecting different joints of a single body provide no information as to which parts of the body are concerned – and therefore thwart reconstructing the body's position. Similarly, a plane defined by the highest, lowest, furthest-left, and furthest-right points of a body provides no information about the position the body is in. A rhombus-shaped plane could correspond to a figure defined by a head, two spread arms, and two feet together on the ground; or to a figure with one arm over the head, one arm spread to the side, one foot on the ground and one leg lifted to the other side. The artist sees this vagueness as positive – valuing the fact that each shape could correspond to multiple postural possibilities – since the representation of corporeal posture is not her goal: *'le corps n'est pas représenté dans les vidéos justement pour brouiller la hiérarchie habituelle des parties du corps* [the body is not represented in the videos precisely in order to blur the habitual hierarchy of body parts]'.¹⁶ Beyond postures, the videos also render it impossible to understand the body's positions in space: in Figures 17 and 18, black lines draw the liminal spaces of users and red lines connect body parts of one user to another. In Figure 17, one cannot know if the small plane means that one user is behind their fellow user. Figure 18 could mean that the two users are directly in front/behind one another (their liminal spaces coinciding), or that one user has left the camera's field.

16 Chénin: Email.

Figure 17: Video still from Mathilde Chénin's *Danse pour deux dans un escalier, un dimanche*. Source: Chénin, Mathilde: *Danse pour deux dans un escalier, un dimanche*, Québec: La Chambre Blanche 2012, 01:47, <http://www.mathildechenin.org/proto/danse-pour-deux-dans-un-escalier-un-dimanche/> (August 2020). No re-use without permission.



Figure 18: Video still from Mathilde Chénin's *Danse pour deux dans un escalier, un dimanche*. Source: Chénin, Mathilde: *Danse pour deux dans un escalier, un dimanche*, Québec: La Chambre Blanche 2012, 01:47, <http://www.mathildechenin.org/proto/danse-pour-deux-dans-un-escalier-un-dimanche/> (August 2020). No re-use without permission.

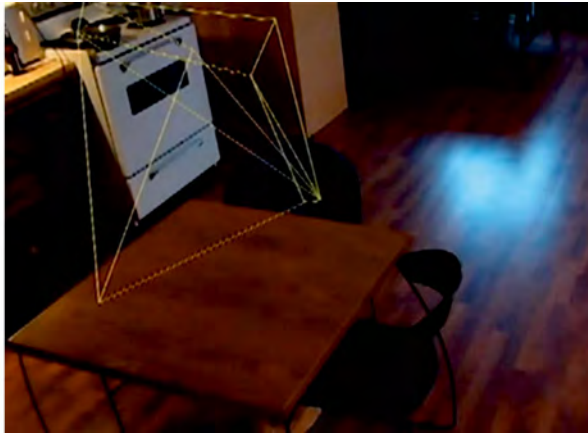


To intensify the viewer's incapacity to reconstruct movements, Chénin purposefully decontextualises her moving forms, presenting them in most cases against a white background, without any indication of scale.¹⁷ Only in *Danse*

¹⁷ Ibid.

pour deux dans la cuisine, petit déjeuner – in which the kinect principle is applied to having breakfast – is the video superimposed on a photograph of the “real” breakfast table; the moving forms becoming foreign to their context [Figure 19].

Figure 19: Video still from Mathilde Chénin's *Danse pour deux dans la cuisine, petit déjeuner*. Source: Chénin, Mathilde: *Danse pour deux dans la cuisine, petit déjeuner*, Québec: *La Chambre Blanche* 2012, 01:50, <https://vimeo.com/39841965> (August 2020). No re-use without permission.



Therefore, the videos are the result of what bodies are doing, but are not accurate or complete representations of these actions. They contain neither a deincarnated visualisation of their movement – an iconic representation based on resemblance – nor a symbolic encoding of information that allows access to the “original” action. In other words, the videos’ forms do not function as bodily signifiers.¹⁸ Rather, they function as quasi-signs; their capacity to signify and represent is not fulfilled, yet they exist as disconnected references to body parts and to relations between body parts or bodies.

Just as they are not notations, the videos are not scores, either – even if Chénin’s creative process did consider that the pieces could function in a generative way, like scores: ‘[mouvement données { objets partition } interprétation

18 In effect, the artist takes care to differentiate between her visual forms and language, since she does not consider their capacity to signify, or ‘code’ reality, is sufficiently precise: all occurrences of each sign (point, line, or plane) of this could-be language do not correspond to the same signified, therefore making it impossible to fully decode/read the videos’ content. Chénin : Interview.

mouvement] [movement data { objects score } interpretation movement]'.¹⁹ This interest in scoring parallels the artist's desire to reduce the importance of subjective expression in her choreographic work:

La contrainte, la règle qui dit quoi faire – et non pas comment faire – permet de désubjectiviser la pratique quelle qu'elle soit. Au sein d'une pratique d'improvisation chorégraphique [...] la contrainte, la règle, la partition permettent de créer des états de corps et de présences différents de ceux qui sont produits par une improvisation complètement libre, et qui en arrive presque inévitablement à une primauté de la sensation personnelle, du ressenti. [The restriction, the rule that says what to do – and not how to do – allows a de-subjectivisation of the practice, whatever that practice may be. In the framework of a practice of choreographic improvisation [...] the restriction, the rule, the score, allow creation of corporeal and presence states different from those that can be produced through completely free improvisation, and which thus almost inevitably leads to a primacy of personal sensation, of feeling].²⁰

But the idea of using the videos' lines and planes as scoring material was never realised, partly due to the artist's hesitations about the artistic interest of interpreting visual forms through movement.²¹ This choice points to the fact that the criterion for the (non)use of the videos as scores – moving from images back to bodily physicality and performance – was not their initial connection with the body, but, rather, the specificity of the videos' forms as a new *kind* of (visual) material to be interpreted by dancers.

The videos, then, are not notations – if notations represent the body or its actions, and form reliable bases for the reconstruction of corporeal movement – and they are not scores – they do not aim to generate incarnated movements. They exist neither as a preliminary causal source nor as an aftereffect of physically-embodied performance; they are not secondary to performance. In this sense, the issue here is not the loss or postulation of embodied, phenomenologically-accessible performance, but the possible creation of a new type of object, not subordinated to its relationship with the body. The videos, in this reading, are not choreographic because they represent or mediate the choreography performed by a body, or because they generate choreography in bodies; they are – expanded – choreographic works capable of existing in multiple media. As such, they reflect contemporary interrogations about the necessity of choreographic embodiment – such as William Forsythe's question whether 'choreographic practice is not destined for another domain, not exclusively live

19 Chénin: Untitled Research Project, p. 4.

20 Chénin, Mathilde: *Ici: un titre*, MA thesis, Cergy: Ecole nationale supérieure d'arts de Paris-Cergy 2011, upaginated.

21 Chénin: Untitled Research Project, p. 5.

performance'.²² But they also reflect Feuilletian choreo-graphies' own distance from the necessity of embodiment. Feuillet notations cannot be understood through a contemporary view of notation; they are not documentation of an essentially-corporeal practice [Chapter 2]. And, it is precisely this latter view that the kinect videos reject, forming a critical response to a post-Feuilletian conception of (choreography as) notation, one to which Raoul Auger Feuillet's choreo-graphy also provides an alternative.

Body, video, code – multiple choreographies

If the videos' forms as signifiers lose their link to the body, this is partly because they do not represent the body *per se*, but, rather, relations developing within it (one body part to another) or between it and other bodies. Similar to how the physicality and specificity of the body's action may seem lost in the realm of video, such relations may seem abstract as well – as illustrated by the last work in the series, *CLOb*. In this project, the artist was primarily interested in creating and observing a moment of participants being-together, and a moment between participants and materials. Invited to cooperate on the construction of a dome (based on designs by architect and author Richard Buckminster Fuller) – which would become a collectively-run greenhouse for a garden in northern Paris – participants interacted and exchanged, were and did together, and took part in a common space.²³ It was the reality of these interactions – this state of being together – that led to the work being the last in the kinect series. Apart from its multiple technical difficulties, the motion capture procedure did not detract from the experience of actually *being* together by drawing attention to the abstract representation of this togetherness.²⁴ The embodied, lived relationality thus seems ungraspable by the digital procedure. Yet, the video choreographies' relations are not devoid of reality.

In effect, while the experience of interpersonal (or object-personal) relations may be absent in the videos, there is a form of between-ness – of relationality – that is present in them. Paradoxically, this is not most evident in the video resulting from *CLOb*'s collaborative format – it does not trace lines among participants or between participants and objects – but in older pieces, where

22 Forsythe, William & Hennermann, Célestine: Interview 11/2012, in: Hennermann, Célestine & deLahunta, Scott (eds.): *Motion Bank: Starting Points & Aspirations*, Frankfurt am Main: Motion Bank/The Forsythe Company 2013, p. 14.

23 Cf. Chénin, Mathilde: *CLOb* (Collective Large Object), undated, <http://www.mathildechenin.org/clob/clob-collective-large-object/> (August 2020).

24 Chénin: Interview.

interactions may have been unintentional. The lines connecting body parts of different people in *Danse pour deux dans la cuisine, petit déjeuner* and *Danse pour deux dans un escalier, un dimanche* define a space that is not seen by the artist as “negative” or empty, but fully concrete and real; these lines mark a territory filled with a relation. Two people coexisting in space are not, in this perspective, divided by a gap; their being together creates a new form, a new volume in space, which, although immaterial or projected, bears witness to their interaction.²⁵ The videos make this immaterial, relational reality visible through a plane or a line; they show what is there, present between two physical beings – a fully real, but invisible, entity. In this sense, when a line appears in the video, it represents *and* embodies the relation between the kinect users. Relations – as Brian Massumi, referring to William James, would have it – ‘are no less fundamentally given, no less directly given, than discrete objects and their component properties. That they are directly given means that they are directly perceived. Relation is immediately perceived *as such*.’²⁶ The videos make the existence of the relation-as-such visible – often to the detriment of representing its poles. Consistent with this, while Chénin stopped working with kinect cameras – partly because her interests shifted towards collective forms of being – she does not see this move as a negation of, or in opposition to, her kinect experiments.²⁷ In other words, the relations that the kinect works visualise can be seen as building blocks for pieces focussing on experiences of *actually* being together. The lines in the videos – far from being empty abstract shapes – are ways of thinking of co-presence and co-being, of relation as something real.

If the forms in the videos represent, or even perform and embody, a reality, they may also have effects in their viewer’s experienced reality. In an unrealised elaboration of her kinect cameras series, Chénin planned to help spectators actually feel their existence in this in-between relational territory. For this project, she imagined an immersive space, wherein kinect cameras would collect positional data from a group of people moving in a room. Abstract visual representations of the inter-personal, dynamic space would be projected on the walls: ‘[l]es lignes apparaîtraient alors reliant littéralement les corps des personnes présentes dans l’espace de la pièce [the lines would therefore appear to be literally connecting the bodies of the people present in the space of the room]’.²⁸ If this project had been realised, it would have provided a feeling of the reality of

25 Ibid.; Chénin : Email.

26 Massumi, Brian : *Parables for the Virtual: Movement, Affect, Sensation*, Durham: Duke University Press 2002, pp. 230–231.

27 Chénin : Interview.

28 Chénin: Untitled Research Project, p. 9.

relational movement. However, the four videos studied here are mediators of real experiences too, their forms acting less as traces of an absent – because of being mediated, digitised, virtual – body and act, than as presences that can make new forms emerge.²⁹ This possibility is based on rupturing the strict relationship of signification between video forms and body; since the lines and planes do not function as a stable system of reference to bodily actions, they acquire an openness of interpretation, allowing unintended and unexpected action/relation images to appear. A quotation concerning scoring from one of Chénin's texts helps elaborate this thought:

*Je propose [...] des partitions chorégraphiques, gestuelles ou relationnelles, qui peuvent ou non donner lieu à des interprétations collectives. Ces dernières existent avant tout comme des textes-objets, des textes-dessins, contenant dans leur matière même l'ensemble des possibles auxquels ils peuvent donner corps [I propose [...] choreographic, gestural or relational scores, which can or not give rise to collective interpretations. These exist first and foremost as text-objects, text-drawings, containing in their very matter the totality of possibilities which they can engender].*³⁰

Applying this perspective to the videos, the focus is not on what actions they have (not) given rise to, but on the actions or relations that *could* be generated from them – a choreographic practice that allows relational choreographic options to appear, whether or not the body ever incorporates them. This idea shifts focus from the videos as actual generators of real action/relation – viewed from the perspective of their tangible results – towards the videos as containers of – equally real – potential action/relation.³¹ In this sense, the videos affect reality by generating real experiences of non-realised relation and/or action, as opposed to real experiences of real relation and/or action.

If Chénin's pieces take their starting point in real, experiencing, (dancing) bodies, they themselves depict the reality of an immaterial relation and may, furthermore, have effects in the real. Describing her work through these two poles, however, excludes a further, equally-real and -active, component: the code. Indeed, while Chénin's series of kinect works are video choreographies, the project has very little to do with video as a medium; as mentioned above,

29 Cf. for instance *ibid.*, p. 2.

30 *Ibid.*, p. 3, emphasis added.

31 Chénin sees these potential actions as virtualities residing within scores: '*le virtuel ne s'oppose pas au réel dans le sens où le corps y serait absent, mais il constitue au contraire une structure nouvelle – qui répond à ses propres règles et possède ses propres objets – dans laquelle le corps peut s'inscrire et s'investir* [the virtual does not oppose itself to the real in the sense of the body being *absent*, but on the contrary constitutes a new structure – which follows its own *rules* and possesses its own *objects* – in which the body can inscribe and engage itself'. Chénin: *Ici: un titre*, unpaginated. On the concept of virtuality see also Chapter 6.

the pieces are not framed as video works, but are only available online – more as illustrations, one is led to think, of the process that gave rise to them. It is in this respect that, despite the resulting video format, the kinect project is not essentially or primarily a choreographic-video work, but a choreographic-algorithmic one. The transformation of moving bodies to visual video forms is the result of combining kinect technology – the way in which the camera-object functions – and algorithmic “instructions” – what the artist has programmed the camera to do. Chénin very explicitly refers to choreographic and algorithmic *practices*,³² indicating her focus on the process of programming, rather than the specific medium in which the programme is manifested. And, while an algorithm does need an interface to present results, it can also be considered independently of these results – in whatever medium they manifest. This is the proposition of Stamatia Portanova and Luciana Parisi, who argue for an aesthetic valourisation of code beyond its generative capacities, and beyond the ways in which it is perceived through an interface. Against an insistence on the productivity of code, ‘an operative mode of thinking “in” and “through” matter, in the sense of presupposing a corollary of material realizations [...] where an abstract code is always in need of being concretely *doing something*’,³³ the two researchers suggest concentrating on

the autonomy of code, “code in itself” [...] the very possibility for digital algorithms to be seen as what they primarily are, i.e. mechanisms for the processing and calculation of quantities of data, rather than instruments for the production of qualities/effects. It is mainly to this quantifying capacity that we ascribe the aesthetic value of software, a value that we want to associate not to sensorial perception but to something that we define as “thought”: a thinking not relative to any subjective or conscious reflection but to the automated, abstract dimension of numbers.³⁴

The possibility of concentrating on the code itself as choreographic material is supported by Chénin; she has expressed interest in presenting her algorithms themselves, and not their video-rendering. There are obstacles to this, mostly practical; many audiences cannot read code, raising questions of accessibility, and the programme includes code passages that are under protected copyright

32 For example Chénin: *Untitled Research Project*, p. 1.

33 Parisi, Luciana & Portanova, Stamatia: *Soft Thought* (in *Architecture and Choreography*), in: *Computational Culture* 1 (2011), <http://computationalculture.net/soft-thought/> (August 2020), emphasis added.

34 Ibid.

(and therefore not openly publishable).³⁵ However, barring these issues, Chénin's works could be presented as lines of code to be read themselves, rather than videos resulting from lines of code. This would allow the reader to understand how their syntax can be generative of visual forms and how the algorithm arrives at its results. It would also allow an appreciation of the code for its own aesthetic and choreographic value. As Portanova and Parisi put it, numbers (and algorithms) 'do not have to produce something, and do not need to be transduced into colours and sounds, in order to be considered as aesthetic objects'.³⁶

Just as the code's abstract existence and aesthetic value can be recognised, the algorithm's presence in the real is discernible too. This is again possible through a reflection on the code as a score which never functioned as one; the algorithm's generativity is the source of the video's multiple virtual, dormant options. It is interesting to consider the way in which these options may be grasped *as such* – not as physically-instantiated and accessible, body-residing events, but as abstract entities, which are nonetheless *there*, within the code. The experience of code and its content "as such" is compatible with Parisi and Portanova's incitation to focus on 'the numerical aesthetic of code with a more "abstract" kind of feeling, the feeling of numbers indirectly felt as conceptual contagions, that are conceptually felt but not directly sensed'.³⁷ It can also be related to Chénin's own writings, which indicate an interest in an experience of the abstract, the immaterial, by asking: '[q]uelles sont les conséquences kinesthésiques, sociologiques, culturelles et politiques, du rapport inédit avec des données immatérielles [...]?' [what are the kinaesthetic, sociological, cultural and political consequences of the novel relationship with immaterial data [...]?].³⁸ By being open to experiencing an abstract, immaterial – but, nonetheless, existing – entity, the multitude of possibilities of relation within the code's structure can be grasped. In this construal, the algorithmic choreography is not opposed to an embodied, lived reality, but has a reality of its own; it is not relegated to an inaccessible realm of incorporeal abstractness, waiting for embodiment in order to become real, but may be sensed as a purveyor of real experiences of potential relation. The programmes are not scores generating actual action, but territories in which virtual potentials can be experienced as such.

In this view – like how Feuillet notations circulated between bodies, pages, and signs [Chapter 2] – Chénin's works are tripartite, and oscillate between

35 Chénin: Interview. Chénin has, similarly, been interested in scores as "plastic forms" in themselves. Chénin: Untitled Research Project, p. 1.

36 Parisi & Portanova: *Soft Thought*.

37 Ibid.

38 Chénin: Untitled Research Project, p. 8.

body, video, and code. And, like paper choreo-graphies were used by bodies and carried signs that communicated motions, the three parts of Chénin's kinect works are interconnected and influence each other, too: the camera has technical particularities limiting the code, the programme tells the camera what to do, the body provides input... However, while certain hierarchies do exist in Chénin's project – the body and code are “effaced” by the video – if one follows the above argument about the non-subordination of the video to bodily action; or Portanova and Parisi's arguments about the non-subordination of code to its (here, visual) expressions; or, for that matter, Feuillet's contemporaries' conception of choreo-graphies as aesthetic objects valid in themselves, beyond their communication value towards dancers; then choreography seems to equally exist in three different media, as three distinct, yet interconnected, entities. All three – body, video, code – are examples of choreography's multiplicity – manifestations of a plural choreographic ontology. A choreography can exist in bodies, videos, graphic/visual shapes, or code; these are not shadows of each other but parallel, interconnected, *different* ways of choreography's being that place it in a transmedia plane, undoing post-Feuilletian choreographic-corporeal essentialisms.

Adaptive choreographic data

The multiplication of choreographic media seen in Chénin's work has been prominent in the years surrounding the appearance of a notion of expanded choreography. The choreographic field has seen the emergence of choreographed books (Daliya Acin, *Exercise for Choreography of Attention – “Point of no Return”*, 2012), choreographed exhibitions (Xavier Le Roy, “*Rétrospective*”, 2012-; Mathieu Copeland, *Chorégrapheur l'exposition*, 2008),³⁹ choreographed texts and ideas (Noé Soulier, *Idéographie*, 2011), choreographed postcards (Emilia Gasiorek, *Ghostcards*, 2014),⁴⁰ and choreographed sounds (MAMAZA & Nikel Ensemble, *The Nikel Project – Songs & Poems*, 2012). Similarly, the “foundational” MACBA text on choreographic expansion proposed that choreography ‘needs to remain inclusive’ of those choreographic artists who are ‘expanding towards cinematic strategies, documentary and documentation and rethinking publication, exhibition, display, mediatization, production and post-production’.⁴¹ Choreographer Rasmus

39 Cf. Cvejic: “*Rétrospective*” par Xavier Le Roy; Copeland, Mathieu (ed.): *Chorégrapheur l'exposition*, Dijon: Les Presses du réel 2013.

40 Cf. Gasiorek, Emilia: *Ghostcards*, in: Caspao, Paula (ed.): *The Page as a Dancing Site*, Lisbon: Ghost Editions 2014, pp. 23–32.

41 Expanded Choreography. Situations, Movements, Objects...

Ölme has noted that '[c]horeography can engage in curating, production design, dramaturgy and image making'.⁴² If choreographers can practice such an expanded choreography, their role as creative agents also becomes multiple, like choreo-graphers of the early-18th century – some of whom were dance makers, dancers, notators, editors, and graphic artists all in one [Chapter 2].

The process of choreographing varying media – be it a video, exhibition, sound, text, or (beyond the examples given above) a building, piece of clothing, or furniture – implicates applying knowledge, practices, and methods based on dance and the body in motion to media not habitually associated with dance and choreography. It is in this sense that one of the central claims of the MACBA text on expanded choreography – characterised as an 'open cluster of tools that can be used in a generic capacity'⁴³ – can be understood; and it is in this way that some of the works referred to above function. While applying a physical-kinetic choreographic thinking to other fields has been widely emphasised, the inverse contributions of other media and materialities to choreography's thinking modes can also be examined. Portanova's *Moving without a Body: Digital Philosophy and Choreographic Thoughts* (2013) studies how technology – notably, digital technologies – may think, or incite thinking, choreographically;⁴⁴ it therefore, in the present case, invites an investigation of what kinds of choreographic thinking a camera and a code may generate. It is these contributions that are examined in the remainder of this chapter, as a basis for understanding the "being-choreographic" of Chénin's videos.

The passage from bodily movement to kinect recording to algorithmic processing to video visualisation implicates successive transformations, in which the links between steps are partly lost. The physical body moves, but what the kinect camera "sees" (especially when not using skeleton-tracking) is not a moving body, but a collection of points forming volumes and repositioning themselves in spacetime. In this initial transformation, corporeal movement loses its inscription in a coherent body image, its possible gestural signification, and its eventual intentional expressivity; it becomes volume and points. The position points registered by the camera then enter a second transformation through the artist's programme; they are turned into lines, forming planes from which knowledge about volumes or positions in space is only partly recoverable. Each stage of transformation follows a particular logic; the units – from body

42 Ölme, Rasmus: *From Model to Module: A Move towards Generative Choreography*, PhD thesis, Stockholm: DOCH University of Dance and Circus/Stockholm University of the Arts/KTH Royal Institute of Technology 2014, p. 40.

43 Expanded Choreography. Situations, Movements, Objects...

44 Portanova, Stamatia: *Moving without a Body: Digital Philosophy and Choreographic Thoughts*, Cambridge/London: MIT Press 2013.

part to position points to two-dimensional form – are processed differently in each stage.

This transformation has implications about how choreography is processed at each stage as well. When people see bodies moving, most think in terms of persons, limbs, actions, intentions, and gestures; when the camera sees bodies moving, it “thinks” in terms of position coordinates and points, and therefore does not – unless using skeleton tracking – see *bodies* moving. In effect, without skeleton tracking, the camera’s only way of knowing a body is present is through a process of “background subtraction”, wherein it distinguishes the pixels of moving figures from the pixels of an immobile background.⁴⁵ Similarly, if the camera thinks in terms of position and points, the video resulting from the code functions in two-dimensional geometrical forms – sets of lines – and only makes those forms visible. Kinect technology conventionally creates three-dimensional representations of the captured scenes; here, in contrast, the programme explicitly diverges from this and shifts the resulting image towards abstract forms. Each step of the transformation thus implicates a different way of thinking choreographically, rather than an exportation of physical thinking to new media.

Indeed, in discussions with Chénin, she frequently referred to the ways in which the kinect “thinks”, “sees”, or “perceives”; the user does not simply “make” the camera “do” things, but also needs to follow the camera’s logic, seeing material from its perspective. While kinect devices augment the range of what it is possible to do with the capture and recording of bodily movement, they also impose their own rules and limits on motion capture practices. There are three important points that emerge from this. Firstly, if the videos are expanded choreographies going “beyond” the human body, this is not only due to the dancing bodies being dematerialised and transformed; it is also partly because the human artist loses their position of control with respect to the media they utilise. In other words, it is not only the dancing subject that is abstracted and de-subjectified; it is also the author-subject that becomes multiple and partially non-human. Secondly, as a corollary, the influence of the kinect on the transformation of choreography draws attention to the limitations imposed by any medium, including the body. The idea that the artist has more control over the process by working with a body is a partial illusion, undone by the experience of working with the camera. Thirdly – and most importantly in the present discussion – the agency and effects of the kinect (the fact that it imposes its own particular logic) imply that choreography follows a logic that takes into account the camera’s specificities, behaviours, reactions, limits, capacities – and its mode of functioning, or “thinking”. Introducing discreteness into movement

45 Chénin: Email.

is one such specificity of the kinect (and other cameras); it registers a series of separate motion-instants, therefore “cutting up” a continuous flow of motion into chunks or “kinetic snapshots”. This is a feature shared with cinema that has gently haunted movement concepts since Eadweard Muybridge’s photographic studies, here transposed into a digital process.⁴⁶ In the case of Chénin’s videos, the camera needs to decide, from a continuous train of motion, when to update data about bodies’ positions; the moments when the depth map will shift its landscape, creating *its own* train of motion. This occurs no matter how close the kinetic snapshots may be to one another in time; movement still needs to be cut into discrete bits for the depth map to update. Interestingly, the camera both imposes a “snapshotting” of movement before data is extracted, and partially determines the frequency at which this will happen: while the user can define the frequency at which the depth map’s coordinates will be “refreshed”, the choices are limited by the camera’s technical constraints.⁴⁷ The programmed camera, then, “sees” movement differently from human observers, transforming this movement into numerical information, and gathering and processing this movement information as discrete objects, rather than motional flow. The camera “thinks” in chunks, and it is this thinking that is visualised in the videos. Thus, the work “thinks” choreographically in a way introduced by the camera, and invites the viewer to do so as well.

If the camera thinks choreographically, the algorithm can do so too. Chénin has been interested in the ways in which computational processes, or algorithms, can become choreographic logics or ways of thinking. Notably, she has considered how algorithmic principles themselves organise thought, and how that information can be used choreographically. An example of this is her reflection on the transposition of programming syntax (based on Boolean connectives) to action, considering the possibilities of enacted responses to the “AND”, “OR” or “NO” values used in programming.⁴⁸ In a comparable way, one of media artist Mark Coniglio’s projects thought of choreography through principles drawn from computation, rather than merely adding computer technology to an already-defined choreographic practice.⁴⁹ For the 2009 piece *Loopdriver* – developed with the company Troika Ranch – a filmed dance sequence was processed, complexified, and lengthened with a looping tool software; the numerically-looped version was given as a score to dancers to perform with/in their bodies.

46 Portanova: *Moving without a Body*, pp. 57, 74.

47 Chénin: Email.

48 Chénin: Untitled Research Project, p. 4.

49 Coniglio, Mark: Conclusion. Reflections, Interventions, and the Dramaturgy of Interactivity, in: Sutil, Nicolas Salazar & Popat, Sita (eds.): *Digital Movement: Essays in Motion Technology and Performance*, Basingstoke/New York: Palgrave Macmillan 2015 [2013], pp. 280–281.

Comparable to Chénin's reflection on choreographing through Boolean connectives, Coniglio 'adopted a rigorous process of composition that was, down at its core, technological in nature'⁵⁰ – one that thought choreographically through an algorithm, even though it was not performed by technological agents.

What is being sketched out here is a shift from choreography *using* digital technology to choreography functioning *through* modes of thinking attributable to computing – to a camera and code. Reflecting the need for such a shift, Coniglio has formulated a severe critique of “technologically-enhanced” dance, precisely because ‘it has not led us to any significant shifts in choreographic practice’; it has not allowed choreographers to conceive of their practice differently, but merely to ‘rely on an established choreographic practice and attempt to “splice in” the technological elements’.⁵¹ In contrast, the process of successive transformations implicated in the production of Chénin's videos allows choreography to change, penetrated by the functioning and thinking of video and algorithms. Here, the technology is not an add-on to a corporeal choreographic practice, but is a medium through which choreography is invited to think anew. The skills necessary for choreographic practice are correspondingly modified; an acquaintance with the body and technical corporeal work are decentralised, while an experience with, or knowledge of, non-corporeal, non-kinetic media (such as coding) becomes an expanded-choreographic skill.

Such shifts in choreographic thinking and practice are not, of course, limited to the digital; they apply to any medium or materiality that could contribute to an expanded choreographic practice. In this sense, choreography is unattached to any specific medium and therefore applicable and adaptable to diverse ones. Mårten Spångberg provides a notion that resonates with this conception of the choreographic when he notes that ‘it's not a question of mixing and collaborating across media and disciplines, but *specifically doing choreography by way of* other media and disciplines’⁵²; to describe such a practice of choreography, he proposes “media-multi” replace the term “multimedia”. Choreography is thus not (only) multimedia, but is also expanded by its adaptive capacity to take diverse forms *in* different kinds of media and materials.

This adaptability of choreography does not implicate its dissolution into “other” media, as expected by equating the choreographic with the posited, original, embodied practice; rather, it is the basis for a necessary shift in our

50 Ibid., p. 281.

51 Ibid., p. 276.

52 Quoted in: Hoogenboom, Marijke: Who's Afraid of (Art) Education? Some Indecent Proposals, in: Melzwig, Ulrike, Spångberg, Mårten & Thielicke, Nina (eds.): *Reverse Engineering Education in Dance, Choreography and the Performing Arts*, Berlin: b_books 2007, p. 76, emphasis added.

conception of choreography itself. Chénin's transfer from bodies to points and from points to geometrical forms is not a translation of a fixed choreographic structure in non-bodily media – turning an entity that would be choreographic into an “other” entity. Rather, it is an extraction of choreographic *data* which can be processed differently in various media. The specificity of the kinest choreographies is not found in any one type of manifestation – be it body, video, or code – effaced by others, but in the informational content they carry. Thus, choreography is not a physical practice transformed *into* non-bodily media, but an art whose products comprise bundles of information – data that can be materially manifested *in* diverse media.

Again, in this respect, Chénin's work is comparable to contemporary choreographic projects, such as the exemplary 2009 interdisciplinary initiative *Synchronous Objects*,⁵³ which collected data from Forsythe's dance piece *One Flat Thing, reproduced* (2000) and used them to create digital visualisations of its complex, contrapuntal choreographic organisation. Specific pieces of information about the embodied performance of *One Flat Thing* – including positions in space and cueing between dancers – were gathered and transmitted to/by non-corporeal media. While some of the “synchronous objects” provide simple visualisations of the dance's organisation, others use the dance's data as material for creating new *kinds* of objects (akin to Chénin's project). For example, one named *Performative architecture* takes the choreographic organisation of the dance as a starting point for the invention of dynamic furniture models.⁵⁴

Along with this contemporary inscription, Chénin's work is once more also comparable to Feuilletian choreo-graphy, which is both a process of transferring dance onto paper – thereby causing the loss of physical choreographic attributes – and a system of transferability of information between forms of embodiment and a language of signs [Chapter 2]. Chénin's work translates information conceived from the perspective of the digital, using numerical data points, while Feuillet's choreo-graphy translated a taxonomic *episteme*, using classifiable

53 Cf. *Synchronous Objects for One Flat Thing, reproduced* by William Forsythe, 2009, <https://synchronousobjects.osu.edu/> (August 2020).

54 Stephen Turk explains the thought process behind such objects as a search ‘for a way to make a non-literal translation of the table dance [i.e. *One Flat Thing*] by taking into account the effects of the piece and finding parallel architectural phenomena in which they could be re-inscribed. Our goal was not to produce a simple one to one transposition between the notational and contrapuntal analyses and an architectural object but rather to produce a space that was performative and combinatorial in a resonant way with *One Flat Thing, reproduced*’. Turk, Stephen: *Tables of Weights and Measures: Architecture and the Synchronous Objects Project*, 2009, [https://synchronousobjects.osu.edu/assets/object s/furnitureSystem/TurkTablesOfWeightsAndMeasures.pdf](https://synchronousobjects.osu.edu/assets/object%2Fs/furnitureSystem/TurkTablesOfWeightsAndMeasures.pdf) (August 2020).

formal units; their differences are found *within* their conception of choreography as abstractable material transferable across media.

Conclusion

Just a link, a click, and a small-sized window. Mathilde Chénin's kinect series is related to choreographic practice but does not conform to the expectations habitually associated with it. Her videos may find their source in the moving and, at times, dancing human body, but through multiple processes of transformation they lose their connection to it, refusing to become signifiers of corporeality or secondary generators of action. This transposition of choreography from body to video is characteristic of a contemporary expanded choreographic field in which films – as well as sounds, books, exhibitions, and buildings – can be choreographed.

A body dancing but never seen; a video, and a code presentable in its own right. Chénin's work implies no subordination of digital moving image to live performance, or of algorithmic source to digital performance in video. Rather, her work develops three concurrent, connected, but different choreographies; choreographic expansion becomes synonymous with plurality. The kinect works thus display a non-hierarchical, horizontal, multiple choreographic ontology that spans bodies as well as other (im)materialities and (in)tangible entities, and that decentralises choreographic authorship away from dance-specific skills. A body dancing but never seen; a video and a code presentable in its own right: three choreographic entities, each with its own mode of existence, anchored in the real.

Transformed into non-signifying visual forms, choreography enters the video format. In this process, it changes: its speed and dynamics become subject to the technical limitations of internet connections and streaming software; discrete chunks are cut from the continuous flow of motion experienced by, or seen in, the body, inviting a recognition of motion's equally-multiple conceptions; its forms are algorithmically translated into the two-dimensionality of a screen. In the process of these transformations, the units, functioning, and mode of thinking of choreography shift as well, allowing new medialities to interfere with its conception, authoring, and performance: choreography thinks and develops through the material limitations and technical particularities of the camera, screen, and programmes. In this way, the videos illustrate that applying choreography to non-dance products and non-corporeal or -kinetic media may include the transfer of a choreographic structure – of a dance-, motion-, or body-based mode of thinking – to a new materiality, but can also implicate an exploration of how the specific materiality and mediality of a

code, book, sound, video, installation, or drawing may transform choreographic practice and thinking. This *adaptive* choreography – entering, interacting with, influenced, and transformed by different materialities and technologies – constitutes a shift in the very conception of choreography, from practice inscribed in (any) mediality to *informational content* transferable across different media.

In its refusal to be aligned with either score or notation as a secondary document subservient to embodied performance, Chénin's series of videos echo early-18th-century conceptions of Feuillet notations as paper dances [Chapter 2]. In their tripartite nature and circulation between embodiment, video, and code, the kinect works echo Feuillet's dances' own circulation between dancing body, page, and signs. In their widening of choreographic skill from corporeal technique and dance composition to coding, they form an echo, too, of choreographers' functions as notators, dance-makers, teachers and, at times, editors. In their thinking of choreography in non-corporeal ways – extracting data out of a physical performance – Chénin's works echo the possibility of using Feuillet notations for abstract choreographic thinking in a choreo-graphic language. Avoiding an illusory historiographic teleology, these echoes are not indications that Feuillet was a determinist precursor of Chénin. They are, first and foremost, results of a juxtaposition of heterogeneities that allow unexpected relevance to emerge. But, this relevance is, in itself, an indication of a contemporary choreographic practice expanding away from an essentialised choreography, which the early-18th century had not yet fully internalised; contemporary expansions and early-18th-century choreo-graphies therefore both serve as counterexamples to that essentialisation. The common problematics identifiable in a largely-successful, early-18th century, European system of dance writing and three online videos made by a contemporary artist are neither coincidental nor causally related; they indicate that both are inscribed in common macro-historical frameworks, that both are outliers to entrenched conceptions of choreography, and that both could be part of common alternative choreographic histories. Adopting an expanded choreographic perspective led to the identification of the potentially-neglected, disembodied aspects in the *Chorégraphie* – and as the notions of the parallax (Hal Foster) and preposterous history (Mieke Bal) warn,⁵⁵ this perspectivisation implicates a return of the historical gaze towards the present, by activating a distant past in the reading of a present not isolated from it.

55 Foster, Hal: *The Return of the Real: The Avant-Garde at the End of the Century*. Cambridge/London: MIT Press, 1996, p. xii; Bal, Mieke: *Quoting Caravaggio: Contemporary Art, Preposterous History*, Chicago/London: The University of Chicago Press 1999.