

# Drawing as a site of critical knowledge production in design research

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## Abstract

The question of critical representation is discussed within architectural design for its potential to provide other ways of exploration and production. This study focuses on drawing within the extensive field of critical representation discussions. There has been a growing interest in this area (which is distinguished from the earlier architectural representation discussions) due to its reference to the scope of criticality. This reference is taken as a starting point since it reveals the transformative relationship between content and methodology. The aim of this article is to discuss drawing as a critical practice within architectural design by focusing on the actions that are involved in the process of drawing. It is argued that through this approach, practice has a potential to become a site of critical knowledge production in design research. The article provides an understanding of how criticality is discussed within architectural design with an emphasis on design research and how these discussions have affected the scope of drawing within architectural representation. The study suggests a connection between the methodology of design research and the discussion on critical drawing through the aspects of proximity, objectivity and reflectivity. These aspects propose a way of discovering the actions of drawing which are explored through two case studies. The focus is therefore shifted to the process of drawing, not merely the final product, and how this process can be considered as a critical practice.

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## Keywords

Critical practices, Design research, Drawing.

## 1. Introduction

The study focuses on the relationship between critical knowledge production in design research with an emphasis on drawing as a critical practice. The term critical refers to, but is not limited by the work of the Frankfurt School of early twentieth century (Geuss, 1981), which is extended and conceptualized by Rendell (2006) as practices that are “self-critical and desirous for social change” (p.3). Critical knowledge in this sense, is considered as a type of knowledge that emerges from practice. Design research on the other hand, according to Fraser (2013) involves the process of research into design thinking. This process consists of research actions (thinking, writing, discussing, performing, etc.) and research methods that work together. Design research differs from other architectural works because it mediates understanding and knowledge production (Fraser, 2013). The term also has a connection to Frayling’s (1993) differentiation on the relationship between research and design, which is categorized into three as research for, into and through design. The latter two are related to this approach.

The argument is formed by discussing the relationship between critical knowledge and design research, how critical knowledge is produced through the process of design research and how drawing becomes a site for this type of knowledge production to take place. Critical knowledge production in design research, within this article, is obtained by bringing attention to proximity, objectivity, reflectivity. If the distance between the practitioner and the practice depends on the context and the perspective of the practitioner, acknowledging this distance or proximity becomes significant for self-reflectivity, as well as understanding the scope of objectivity. A self-reflective process results in a transformation that is not projected from outside but generated through practice. In this context, objectivity is discussed as partial and situated. This problematizes the split between theory and action, by offering a situated, embodied and critical practice.

Design research demonstrates processes of researching through practice, whereas this study focuses on researching through drawing with an emphasis on action. The literature review on the relationship between criticality, drawing and representation demonstrates different approaches on how drawing embodies architectural knowledge. Although these examples document a variety, this study specifically indicates drawing as an action. The term action refers to the bodily actions of the drawer, the motion and interaction between different bodies. To further this argument, actions of all agents involved in the process of drawing can be taken into consideration, however this is not included in the limited scope of the article.

The study offers a perspective that aims to unfold the embedded actions within drawing. Through the dictionary review, it is seen that a selection of actions relate to spatiality and disciplinarity. These are demonstrated through examples that approach drawing outside of the established form and open up a site of exploration. Established form of drawing is understood as any type of instrumentalization under the task of representation, specifically representation of something that is separate from the drawing itself. What may be outside of this form is to be discovered. This is where drawing is considered as a site where all of these embedded actions dwell, critical knowledge emerges and creative processes take place.

## 2. Critical knowledge and design research

Critical theories, as defined by Geuss (1981), are distinguished from theories of natural sciences in terms of the epistemological difference; critical theories are ‘reflective’ whereas natural sciences are ‘objectifying’ (p. 2). A scientific theory aims at manipulating the external world by instrumentalization, is objectifying as the theory is separated from the object of that theory and require empirical evidence; whereas a critical theory aims at freeing the agents through making them aware of existing and hidden

power structures, is reflective as the theory is always partly about itself and is acceptable if it can survive evaluation (Geuss, 1981, p. 55). This description, points out that critical theories focus on what already is present, revealing the constraints that are evident in a given context. Through critical theories, another form of knowledge which is outside of the scope and methodology of natural sciences becomes possible.

Criticality has become the subject of architecture due to issues such as knowledge derived from design processes, relevance of this form of knowledge, power relations and values. Design knowledge, according to Jiménez-Narváez (2000), belongs to the socio-critical approach which aims to liberate, focuses on social imbalance, consists of a critical attitude and a theoretical model for social action, purposes to transform through critical analysis and knowledge production by using a transformational methodology. When the design object is reviewed within this category, the socio-critical approach results in a transformer object which may lead to a social transformation and a knowledge production that modifies the attitudes, habits and values through the object of design (Jiménez-Narváez, 2000, p. 48).

Although there is a potential for transformation, the relationship between architectural design and critical approach also holds the risk of becoming a justification of an existing social structure which dislocates architecture from its context (Cunningham, 2007). At this point, interdisciplinary research becomes important, since interdisciplinarity brings the scope, methods and structures of the discipline into question. Architecture is a multidisciplinary field of study as it relates to disciplines such as history, theory, design, technology, but also it is open to interdisciplinary work through questioning disciplinary assumptions (Rendell, 2007a). In this sense, an interdisciplinary practice not only allows for a critical, creative and transformative knowledge production, but also has the ability to affect and change the established disciplinary structures. Rendell (2013) introduces 'critical spatial practices' as a way of interdisciplinary

architectural design research that leads to questions about disciplinary definitions. Through properties of self-reflection, desire for social change, transformation, questions about existing power structures, investigation of limits, critical spatial practices are positioned in between theory and practice, art and architecture, public and private (Rendell, 2013, p. 258). Questioning these definitions enables for a critical knowledge production as well as the possibility of a creative practice. In a later study, Rendell (2020) reconsiders 'critical spatial practices' arguing that these practices cannot be separated from ethical concerns and reproduces 'ethical and critical spatial practices' in a transdisciplinary approach.

Similarly, Doucet and Janssens (2011) recommend adopting a transdisciplinary approach and draw attention to the relation between theory and practice, experimentation in production forms (developing methods or thinking differently by questioning existing methods) and the ethical scope and impact of production. Doucet and Janssens (2011) point out that there is a possibility of transforming the disciplinary practice only when taken together with the transdisciplinary approach. In particular, the relationship with ethics emphasizes the importance of the context in which production takes place. Such discussions exemplify an ongoing attempt for positioning criticality in relation to discipline within the scope of design research in architecture.

In relation to transformation through a socio-critical approach, Grillner (2013) offers to question the purpose and direction of this transformation that has been projected onto the critical practice, stating that such approach needs to be "involved on the ground, and perform the research at the same time as it works to transform" (p. 180). This view brings the ground into the discussion, both physically and conceptually, which emphasizes the site, location and place of the research. Through this understanding, it becomes possible to question the existing structure of a design practice, as both raised in the discussions of criticality and disciplinarity. These posi-

tions indicate that if critical knowledge emerges out of design, research and action, then the context of these processes inevitably become a part of the discussion.

### 3. Critical knowledge production in design research

This section suggests a connection between the methodology of design research and critical practices through questioning the context of practice. Critical knowledge production in design research, within this article, is obtained by bringing attention to the selected aspects of proximity, objectivity and reflectivity.

The distance or the relationship between practitioner and practice appeared in the earlier discussions on criticality. On this subject, Fraser (2013) points out a specific approach as “from critical distance to critical proximity” (p. 12) in design research. Criticality is assumed to require a distance from the object of criticism in order to gain a complete perspective of what that object in question might be. However, this excludes the fact that perspective is partial and variable depending on the context and the position, where the distance results in a detachment between things in question. When the dynamics between practitioner and practice become multidirectional, this relationship might become interchangeable resulting in an interaction rather than a fixed situation. This is where proximity becomes an important aspect in order to understand this interactive relationship.

When Rendell (2007a) refers to criticism as a ‘self reflective and embodied’ action, there appears to be an emphasis on the separation between design and criticism as the former being “material, subjective and embodied”, the latter being “abstract, objective and distanced”, as oppositional processes (p. 4). The term embodied holds the notion of the body in itself as well as the interaction of all bodies that are in contact. These bodies include the body of the practitioner as well as the material bodies that take part in practice. If design and practice are performed as an exploration into both the material and the conceptual premises, the separation

does not serve the purpose of distancing but rather offers a movement (in proximity) between different positions.

The proximity of practitioner and practice brings position and objectivity into question within the discussions on knowledge production. Donna Haraway’s (1988) notion of ‘situated knowledges’ opens the phenomenon of scientific objectivity for discussion. Through situated knowledges, Haraway calls into question the ‘disembodied scientific objectivity’. If the knower and the knowledge cannot be separated completely, it can only be misleading to say that objectivity is not biased. Haraway offers the alternative understanding to avoid binary oppositions such as objective vs. subjective; revealing a partial, situated and critical perspective. In this sense, Haraway’s concept of situated knowledges is embodied objectivity through an understanding that objectivity is acquired in a limited location in relation to its context. The partial perspective explains the fragmented view brought about by situatedness, in contrast to the misleading promise of the all-seeing gaze without any location (Haraway, 1988, p. 586), emphasizing the importance of position. The partiality, divisions and multiplicities make inferences about the nature of the variable position and the partial perspective. The embodied, situated and critical knowledge revealed in this discussion challenges the notion of objectivity.

Discussions on objectivity in design research are most apparent in the split between theory and action. Doucet and Frichot (2018) problematize the separation of theory and action in having a positioned perspective while discussing the relationship between architecture and its context. They propose the production of a situated theory through the notion of ‘theory as practice’. While expanding on a situated, embodied and critical practice, Doucet and Frichot (2018) include features such as “connectedness, inclusivity, subjectivity and complexity” instead of “abstraction and dualistic thinking” (p. 2). This argument draws attention to current architectural discussions, in which many agents including not only architects and non-architects, but

also humans and non-humans who are involved in or affected by architectural production are left out of the process. This expansion can be achieved through paying attention to the context of practice. Furthermore, this view can be questioned in terms of negotiation with the context of practice since a situated practice requires responding to existing conditions. This bears similarity to the earlier discussions on positioning criticality in relation to discipline where there is a risk of justification instead of transformation.

In order to come to terms with this risk of justification, the reflectivity aspect of practice suggests a transformation process that is not projected from outside but generated through practice. Blythe and van Schaik (2013) state a method of researching through design practice (p. 56) while pointing out a specific way of working with a critical approach. Design research, in this sense, requires the practitioner to be critical about their own work through the work itself, which brings out the importance of its context. Their 'PhD by Project' model, takes into account that projects are publications since they simultaneously question, examine and reflect the past experiences as the designers are practicing on their current work. This model also challenges the separation between research and practice as the processes of "discovery, integration, application and dissemination" (Blythe & van Schaik, 2013, p. 60) happen in both research and practice where a separation becomes ambiguous, or even unnecessary.

The reflective practice model, as stated by Blythe and van Schaik (2013), focuses on the problem of disassociation similar to what is being discussed about the different effects of critical distance and proximity. Their model consists of the following processes: 'reflecting on' an existing work requires telling the back story, recalling aspects and placing them in a new context of design (p. 61); 'reflecting in' the act of designing where the two become simultaneous; 'reflecting for' future moves and potential future designs that are to emerge (p. 62). This model points out the significance of time, not as a constraint to be limited by; but as a

notion that relates these different processes that are taking place. This action is a dynamic and perhaps transformative reflection, emphasizing the focus on the context of production.

The quality of reflectivity relates to the discussion on the distance that has been projected onto the notion of objectivity, which splits practitioner and practice in a way that the context of practice becomes neglected or even irrelevant. The proposition of a 'creative ecology of practice' by Hélène Frichot (2017) defines practice as a creative act of resistance which is about being "critical of the context of action" (p.139). This type of resistance refers to an action that can adapt and transform together with its context, as opposed to an immutable situation. Frichot (2017) emphasizes the context in which practice takes place and the habits that shape the process. The characteristics of the practitioner who performs the creative resistance action are one of the factors that determine the context of the practice. Therefore, the criticality of practice becomes related to the constraints and boundaries of the practitioner. This is where reflectivity is crucial in practice. Criticality is a creative process in which the agents involved in the practice carry out as they become aware of their own limits and positions.

#### **4. Drawing as a site of critical knowledge production in design research**

##### **4.1. The relationship between criticality and drawing**

The relationship between criticality and drawing have been taken into consideration under the common purpose of architectural representation. Recent studies (Pellegrini, 2015; Serra et al., 2015; Grover et al., 2020; Sadokierski, 2020; Asar & Dursun Çebi, 2020; Tanrıverdi Çetin & Dülgeroğlu Yücel, 2020; Mortaş & Dursun Çebi, 2023) have shown that drawing is challenged in the field of architectural representation. Critical approaches in architectural design practices require critical positions in ways of making as well as the issues that are being raised. This section will indicate different approaches to critical drawing practices with an emphasis on drawing as a

transformative and reflective action. Through this unfolding, it is aimed to portray a shift in the established understanding of drawing as a tool for representing something other than/ outside of itself.

As a part of the existing discussion on architectural drawing, there has been an emphasis on the differentiation in the medium drawing, whether it has been produced by hand or digitally. Frascari (2007) writes that “even the digital production of architectural drawings ... fulfill the sole purpose of mechanically describing visual appearances that are utterly insignificant from a properly imaginative way of architectural thinking” (p. 2), pointing out the interrelation between imagination and drawing. This statement shows that although there has been a shift in the medium of production, the instrumentalization purpose remains; drawing is only taken as a documentation tool and not as an exploration process. Frascari then suggests that drawings are “important architectural agents, since they carry embodied in them the non-verbal essence of architectural theory” which takes drawing as an agent that embodies the architectural knowledge (p. 5). This agency of drawing causes the efficiency, precision and representation purposes to come into question.

As drawing's agency affects its relationship to knowledge production, the assigned roles do not perform a limit but rather result in another layer of information to work together with. Hamel (2007) discusses “drawing's role to confound and question as opposed to resolve” (p. 201) and points out the purpose or the attained mission of drawing. Drawing might still hold the process of documenting, recording, transmitting, explaining and instructing, however it becomes problematic, as the main issue reviewed in this article, when it is only limited to these processes. The urge to categorize, limit and make clear boundaries becomes distorted because as Hamel (2007) states “the principle of absolutes fears contamination” (p. 201). The process of asking questions through drawing reveals the ambiguities and everything else that can be overlooked for the task of production. When Jennifer Bloomer

(1992) contaminated the act of drawing through ‘dirty drawings’, there has not only been a shift in the materiality but also everything that has been attached to the concept of representation, especially the separation between theory and practice. Bloomer (1992) distinguishes drawings into three; the first two, sketchbook drawings and shop drawings aim to document and inform construction, materiality and form, whereas the third category, dirty drawings, “aim both to exploit the power of the pornographic image and to mark the connection between it and the conventions of architectural representation” (p. 19). Through the dirty drawings, Bloomer questions, challenges and responds to the “sterility, precision, control, gender” (Rendell, 2018) qualities that have been fundamental to and established in architectural representation.

Drawing is a political act in terms of what is included, what is left out and the relationships that influence these decisions. The political quality puts emphasis on the significance of positionality and partial perspective, in this case, both to be aware of and unfold. Supporting this view, Hamel (2007) writes “to define something is to mark its boundaries” (p. 205) and “to abstract is to select, to select is to make a choice, to choose one thing is to disregard others ... (where) ideological positions are revealed” (p. 206). The question is not about how to dissolve this hierarchy, but rather to become aware of this order and what this entails in terms of design. This is possible through revealing the positionality of the drawer, which will be partial, situated and contextual as discussed in the reflective quality of research.

Although there is a great variety of approaches that deal with drawing within the realm of representation and problematize this relationship, it is argued that drawing has been taken into account as a word or a concept and not as an action. If there is an established understanding of what a drawing is - precisely what an architectural drawing is - it is difficult to approach this subject critically when there is an expectation of a similar result. Since “ambiguity is a quality rarely attributed to the criti-

cal” (Hill, 2007, p. 213) this study aims to reveal the possibilities that dwell in drawing rather than producing a description. The discussion on drawing can also be pursued for modeling. Starkey (2007) points out that “architectural theorists use the modes of drawing and writing to theorize their work, but they rarely use the architectural model as a critical or theoretical tool” (p. 231), and discusses models ‘of’ something else, models ‘for’ something else (p. 233) and models that ‘generate’ design ideas instead (p. 234).

These views on the scope of drawing (what is included and left out) propose a critical approach since they contain discussions on the medium, tools, processes, materiality of drawing as well as its relation to imagination, agency, role to question, select, choose, position and embody architectural knowledge. If critical knowledge is a type of knowledge that emerges from practice, then the context of that specific practice comes into question. Such discussions that examine the context of practice or the context of action imply a possibility of transformation.

#### 4.2. Actions that constitute drawing

In order to approach drawing critically, the embedded actions within drawing that shapes its boundaries are to be revealed. These boundaries, however, are not to be discarded, but to be worked together with. Hill (2013) writes that “the term design comes from the Italian word *disegno*, meaning drawing” (p. 76) and suggests that “the original meaning of design -the drawing of a line and the drawing forth an idea- remains valuable to architectural practice and research as long as its limitations are acknowledged and challenged” (p. 90). In this sense, challenging the notion of drawing and exposing the embedded actions within, becomes a critical practice in itself. This adds another layer to the relationship between criticality and drawing; which is not only about the subject and context or the tools and medium of drawing, but about what drawing consists of as an action in itself.

In order to unfold drawing, the embedded actions within the notion will be shown through a dictionary review

(Online Etymology Dictionary, n.d.; Merriam-Webster, n.d.). When the notion of drawing unfolds, the actions that already dwell within drawing become visible. These embedded actions will be selected according to their reflection in bodily motion and possibility of bringing different concepts in proximity. This relates to spatiality and disciplinarity issues that were raised previously. It is intended to open up the conditions of drawing and its relation to representation. For the latter part of this section, two case studies will be presented, which approach drawing through action and express the potential of the body as an agent in a critical practice. It is argued that these examples provide an embodied approach to drawing.

Draw apart, draw away, draw back, draw from, draw in, draw into, draw off, draw on, draw out, draw up, draw upon and more. This group involves an action embedded in the word which can also be expressed in bodily motion. When drawing is taken as a bodily motion, it starts to lose its tight bound to the realm of two dimensionality and exposes the embedded notion of time and place. Since motion is a spatial action within and depending on a specific time and place, drawing’s context comes into question.

Draw a lesson, draw a meaning, draw a parallel between, draw advantage from, draw attention to, draw an audience, draw a breath, draw close, draw conclusion, draw information, draw inspiration, draw reaction, draw a line, draw together and more. This group involves a relationship that is attained through bringing different concepts in proximity. This is clearly related to the multi/inter/trans/cross disciplinarity question that is an ongoing part of the design research discussion.

The relationship between the actions within drawing is not defined by the format of the table as shown (Figure 1), since these relationships are defined by their context. Aarhus Arc study by David Gersten and Arts, Letters & Numbers (2012) investigates the actions of drawing that infiltrates into a border/wall. The co-constructed semicircular wall is positioned inside the architectural studio space as defining a new

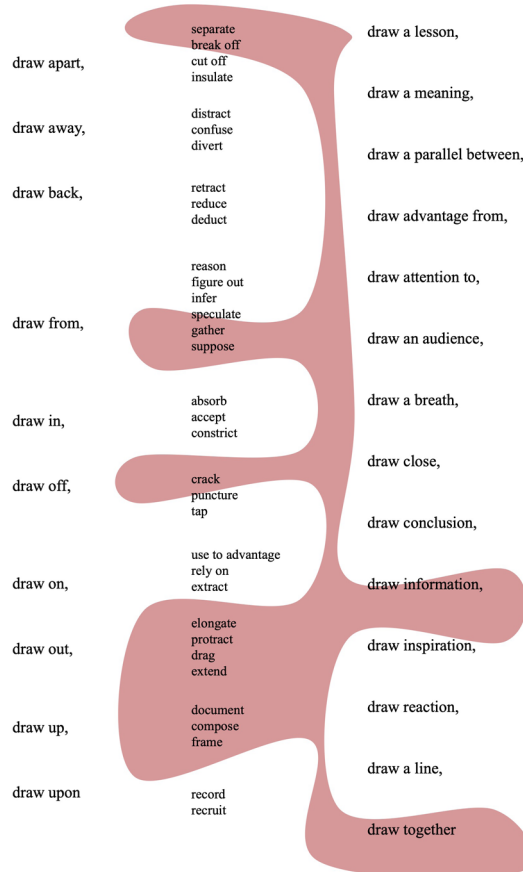
boundary. When the border/wall is established, it separates the studio into sections. Along with the live video and images projected onto it, the border/wall begins to accommodate different locations in itself. A different spatiality comes about even though the physical features of the border/wall do not change. Through the interventions by the workshop participants, the form of the border/wall begins to change. Along with the actions of drawing, the drawing tools and drawing bodies used also interfere with the border/wall. Different agents communicate with each other through the constructed boundary. The border/wall becomes a boundary that can be inhabited and turns into a space that is both separating and enabling to establish new connections at the same time.

As this work records, punctures, extends the boundary of the wall and the studio space; documents, frames, separates, gathers the process of working together; draws information from the environment and draws together a critical approach in architectural education (Figure 2), it becomes evident that the actions of drawing can not be reduced to a medium, scale, dimension or common instrumentalized purpose.

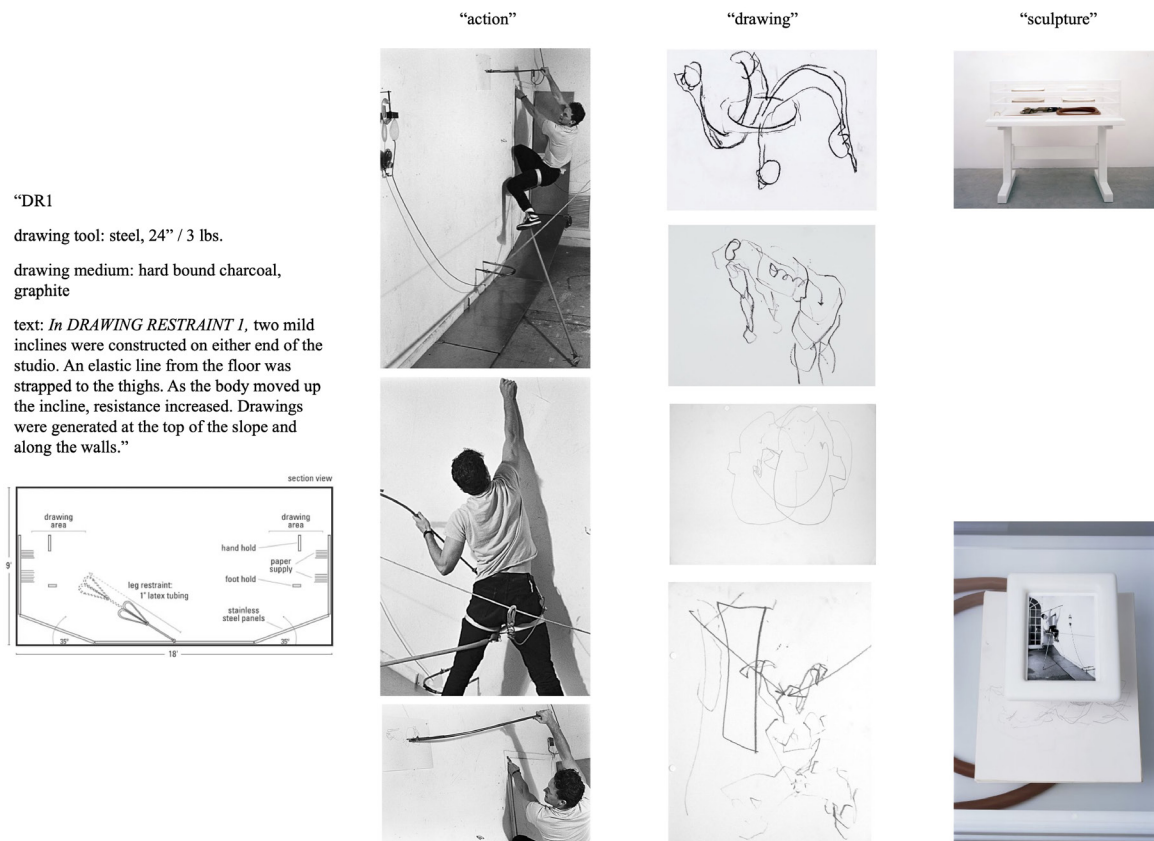
Drawing Restraint, an ongoing project since 1987 by Matthew Barney questions the scope of drawing as a bodily action that results in spatial transformation and provides insight into how to expand the discussion on the actions of drawing. Through this example, it also becomes possible to understand the scope of critical practices, as in what constitutes a critical practice. Within Drawing Restraint (Barney, 1987-2005), each 'path' (or study) consists of action, drawing and sculpture categories. These categories remain throughout different paths, however, they vary in medium, size, location or time. The studies are not limited to the established formal qualities of the categories. As stated in the title, limit, boundary, restraint are taken as notions to explore and engage with. For each path, information on drawing tool, medium and an explanatory text is included along with a section scheme of the planned performance (Figure 3).

draw apart,	separate break off cut off insulate	draw a lesson,
draw away,	distract confuse divert	draw a meaning,
draw back,	retract reduce deduct	draw a parallel between,
draw from,	reason figure out infer speculate gather suppose	draw advantage from,
draw in,	absorb accept constrict	draw attention to,
draw off,	crack puncture tap	draw an audience,
draw on,	use to advantage rely on extract	draw a breath,
draw out,	elongate protract drag extend	draw close,
draw up,	document compose frame	draw conclusion,
draw upon	record recruit	draw information,
		draw inspiration,
		draw reaction,
		draw a line,
		draw together

**Figure 1.** Selected acts that constitute "to draw" (Online Etymology Dictionary, n.d.; Merriam-Webster, n.d.) (prepared by the author).



**Figure 2.** Selected acts that constitute "to draw" for the particular example (prepared by the author).



**Figure 3.** Matthew Barney, *Drawing Restraint 1*, 1987. Table showing information on drawing tools, medium, action, drawing and sculpture. Table by the author; photographs and information by Matthew Barney.

For the scope of this study, ‘actions’ that are involved on these paths become significant. From *Drawing Restraint 1-23*, each study requires different actions that are shaped by their context and transform their context in return. As the context of the performance changes (interior, exterior, open, high, closed, unstable and so on), actions differ accordingly. Although the actions can be seen as the bodily action of the performer/artist, it can also be understood that space and production are also fragments of these actions that have been gathered on paths; reach, lean, bend, touch, jump, pull, limit, climb, hold on, leave a mark, push, pull, hold, overturn (Figure 4).







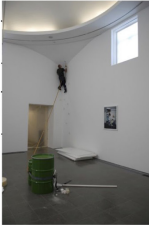


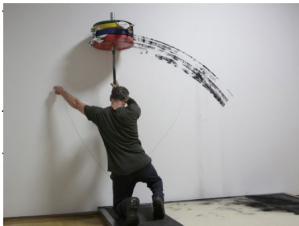

As these actions provide insight into the actions of drawing, it becomes possible to question the term ‘embodiment’. Embodiment, in relationship to the body, often comes up as a concept or a physical threshold rather than an agent of research. These studies do not take the body within the boundaries of daily action but physically expand it in relation to space, therefore have the possibility to result in a spatial trans-

formation. In later studies, the performance moves towards a collective path, as the physical restraint of a single body is extended by working together. This example shows that drawing, as an action, can be taken as a research methodology, while still maintaining its earlier properties (such as leaving a mark). In this analysis, it can be argued that *Drawing Restraint* appears to be closer to the group on ‘the relationship between bodily motion and space’ whereas Aarhus Arc relates more to ‘bringing different concepts in proximity’ since it problematizes the boundaries of architectural education through practice. Through these two examples, along with the introduction that unfolds the notion of drawing, it is observed that drawing and the actions associated with drawing generate a site of exploration.

When criticality is considered as an approach that seeks change and transformation which is generated through the practice itself, these examples perform critically as the scope of drawing is questioned. By solely looking at the actions embedded in drawing, it can be

argued that the boundaries of drawing expand or become inhabitable, new relationships emerge or interactions become materialized. Questions regard-

ing drawings relation to the body of the drawer, the space of practice or the agents of this process become evident as the practice unfolds.

DR1		
DR2 <i>desire to make a mark</i>		
DR3 <i>a character of refusal</i>		
DR4		
DR5		
DR6		
DR7 <i>resistance as a vehicle for creativity</i>		
DR8		
DR9		
DR10		
DR11		
DR12		
DR13		
DR14		
DR15 <i>immediate temporal experiences</i>		
DR16		
DR17		
DR18		
DR19		
DR20		
DR21		
DR22		
DR23		

**Figure 4.** Matthew Barney, *Drawing Restraint 1-23*, 1987-2015. Table on different drawing actions. Table by the author, photographs and information by Matthew Barney.

### 4.3. Drawing as a site of critical practice

In order to explore how drawing is considered as a site of critical knowledge production, Rendell (2007b) states that “the re-making of a drawing raises questions of its site in terms of cultural context and architectural production and reproduction” (p. 183). Rendell (2007b) further elaborates on drawing that “does not attempt to re-stage history ‘as it really was,’ but rather explore historical knowledge as an ongoing reconstruction in the present, located somewhere between fact and fiction” (p. 187). Both considerations bring out the context of drawing, not as something to be represented through, but something that is already in the process of drawing, allowing the actions to reveal the context that it takes place in and is shaped by. As the time of drawing and the place of drawing comes into discussion, the imaginative aspect of the process begins to be included, which was left out for the purpose of instrumentalization as a tool for representation.

When drawing is considered as a site of critical, embodied and situated knowledge production, its separation from the context of time, place and spatiality becomes a significant quality. In this sense, Aarhus Arc is a site of a critical approach to architectural education, which is not represented, but reproduced in a different context (the border/wall of studio space) through drawing. It becomes evident in the works that have been reviewed, that criticality is still discussed and challenged. In order for these discussions to result in transformation, two issues have become crucial. The disciplinarity aspect is to be taken into account as practicing a discipline while questioning its own methods, structures, hierarchies and relationships. This is where the embodied and self-reflective qualities of the practice come as a defining feature. The criticality aspect, on the other hand, does not only reside in the content and the scope of the practice, but also in the ways of making, taking action, and generating knowledge. Taking drawing as an action or taking action in drawing interferes with both issues that have been recurring in de-

sign research on different scales of spatial practice.

In *Actions of Architecture*, Hill (2003) writes “drawing a building or building a drawing ... great pleasure and creative tension exists where they overlap, one feeding the other” (p. 25), which is not only about a process of translation, but a site of action that has been defined or fixed in place through the established notions of an organizational structure over time.

### 5. Conclusion

This article lays out a study within design research in architecture that investigates the actions embedded in drawing, which are not limited to what drawing is about, but instead looking into what drawing already is. This study does not intend to re-conceptualize drawing, but only to reveal what it already encompasses, in order to become transformative in design research. Drawing is a site where all of the actions that it embodies take place. This also challenges the relationship between drawing and representation including the aspects materiality, dimensionality, content and disciplinarity. Through this research, it becomes clear that in order for drawing to become a critical practice, its relationship with representation should be challenged. While drawing can still have a representative property, it is not only limited to this classification. The studies included in the third section show that working with the body with a focus on the bodily actions opens up a space where the argument unfolds through practice. This is where the transformative potential of an embodied approach becomes visible. This approach, as shown through examples, challenges the process of design research as it interferes with the established scope and methodologies of the practice.

Although the relationship between drawing and representation was challenged and discussed through this study, the critical, spatial, embodied practice still remains to be explored. In this process however, the intention is not to produce guidelines for a critical drawing practice for design research, but rather propose methods that shape

and are shaped by each context, in a dynamic and responsive nature that leads to self-reflection and a critical, embodied and situated knowledge production.

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