Why to build university spaces? *How* to discuss them? Emergence of a new lens

Aslı Alanlı.

Received: 23.10.2021
Reviewed: 20.11.2021
Published: 30.12.2021
How to cite this article
Aslı Alanlı, A., 2021. "*Why* to build university spaces? *How* to discuss them? Emergence of a new lens" *Inmaterial. Diseño, Arte y Sociedad*, 6 (12), pp. 49-71

Abstract

Since the 1990's, the university space has been the subject of many discussions arising from the introduction of new communication technologies to the learning process. This has become more visible as a result of the COVID-19 pandemic. These debates focus on the two extremes of whether or not university space is necessary. In this regard, this study intends to show that the arguments on this topic are based on subject–object duality. It aims to develop grounds over which to contextualize the discussions that swing between the two extremes by referring to sociomateriality, a theory that advocates the interwovenness of subject and object. Adopting a retrospective viewpoint, it rediscovers the onto–epistemological debates of the 1960's through a sociomaterial lens. Finally, it situates the discussion on university space within a past–present–future dialogue.

Keywords: university space, sociomateriality, onto-epistemology, the 1960's, subject-object duality.

Resumen

Desde los años 90, el espacio universitario ha sido objeto de numerosos debates debido a la introducción de las tecnologías de la comunicación en el proceso de aprendizaje, que se ha hecho significativamente visible tras los efectos de la pandemia del COVID-19 en la actualidad. Estos debates se centran en los dos puntos extremos sobre si el espacio universitario es necesario o no. A este respecto, esta investigación afirma que los argumentos sobre este tema se basan en la dualidad sujeto–objeto. Esta investigación pretende desarrollar un terreno que cubra las discusiones que oscilan entre los dos extremos refiriéndose a la sociomaterialidad, la cual aboga por la imbricación de sujeto y objeto. Adoptando una perspectiva retrospectiva, esta investigación redescubre los debates de los años sesenta en el plano onto–epistemológico a través de una lente sociomaterial. Por último, sitúa la discusión sobre el espacio universitario dentro del diálogo pasado–presente–futuro.

Palabras clave: espacio universitario, sociomaterialidad, onto-epistemología, años 60, dualidad sujeto-objeto.

Discussions and speculations on university space

For nearly 200 years, the term *university* has been on the agenda of many disciplines as a sociological, philosophical, educational and architectural concern. The university space as an architectural problematic appears in many discussion fields and constitutes the primary object of inquiry of this paper. Although the COVID-19 pandemic has made the questioning of university spaces a prominent aspect of the current agenda through seminars and lectures such as "The Future of the University"[1] and "The Future of Learning"[2], there have been discussions and studies on this topic since long before the pandemic.

When in 1997 Peter Drucker made some predictions on the next thirty years, he stated that "the big university campuses [would] be relics" as a result of the impact of technology (Harrison and Hutton, 2014, p. 14). He asserted that the universities "won't survive as a residential institution" because the buildings were "hopelessly unsuited and totally unneeded" (Harrison and Hutton, 2014, p. 14). In *The American Interest* in 2012, Nathan Harden predicts a digital kingdom that would eventually dissolve the traditional campus, asserting that "the residential college campus [would] become largely obsolete" (Coulson, Roberts and Taylor, 2015, p. 116). Harden (2012) classifies universities' attempts to expand their physical space as a mistake. For him, "buying large swaths of land and erecting vast new buildings is an investment in the past, not the future" (Harden, 2012). In an article published in 2015 titled "How Technology [Would] Affect Studies in 2020", it was made clear that the digital revolution threatened on-campus universities by introducing online learning/courses (Agarwal and Paucek, 2015).

[1] "The Future of the University" hosted by DigitalFUTURES was held on 3 July 2020 with those participants: Nader Tehrani (Cooper Union), Hashim Sarkis (MIT), Eva Franch (AA), Ila Berman (UVirginia), Neil Leach (Tongji/FIU). (DigitalFUTURES: The Future of the University, 2020)

[2] Sanjay Sarma made a presentation titled "The Future of Learning" on 15 October 2020 within the scope of IAAC Lecture Series. (IAAC Lecture Series - The Future of Learning, 2020)

While numerous arguments have been made that the university space would disappear completely, others assert that it will not become extinct; it simply needs to be transformed. For example, APPA Thought Leaders[3] (2012) considered campus spaces as problematic and published a report on their necessary transformation in 2012. This report made several assumptions about campus space such as "space is expensive", "space is in demand", "space is underutilized", "space is poorly measured", "space is poorly managed", "space is free", "space doesn't work" and "space can't be ignored" (APPA Thought Leaders, 2012, p. 4). The striking point here is that on the one hand space is in great demand, and on the other, there is no need for space. To the contrary, there are implications suggesting an excess of space[4]. The problem may be put forward as a matter of inadequate knowledge/practice/approach in how to handle space. Similarly, the report made inferences on the transformation of campus space by implying that the most critical policy requiring focus is "space management and utilization" (APPA Thought Leaders, 2012). The report "The Transformation of Campus", published in 2015, further emphasized the urgency and necessity of the transformation of campuses (APPA Thought Leaders, 2015).

Other authors, such as Andrew Harrison and Les Hutton (2014, p. 15) do not see this problematic as the seeds of the university's extinction. They believe that the university has undergone a period of transformation and has begun to influence every bit of the campus rather than abandoning its footprint completely. For them, space is expected to be conceptualized regarding "patterns of human interaction rather than specific needs of particular departments, disciplines or technologies" (Harrison and Hutton, 2014, p. 16).

These attitudes, that consider transformation as a necessary step, attribute value to the physical spatiality of the university. The university's physical spatiality is claimed to be "underconceptualized" (Temple, 2007, p. 29). It is stated that "the physical environment is perhaps the least understood and the most neglected" (Strange and Banning, 2001,

[3] "APPA is the association of choice serving educational facilities professionals and their institutions." (APPA Thought Leaders, 2012)

[4] The report gave an example as follows: "The University of Michigan (U-M) wasn't using enough of its classroom space at night. Nearby Washtenaw Community College (WCC), on the other hand, regularly ran out of classroom space. In 2010, the two institutions realized they could solve each other's problems and began an innovative partnership to share space." (APPA Thought Leaders, 2012)

p. 31). A university becomes a university "to the extent that we can be there, dwell in it, have a sense of (co) ownership of it and feel agency in relation to it" (Nørgård and Bengtsen, 2016, p. 8). This comes out of "the interactions between university, people and society" (Nørgård and Bengtsen, 2016, p. 5). Campus spaces with all their assets are defined as the representations of a "sense of place" belonging to the university and institution (APPA Thought Leaders, 2012).

While technology is said to have played a central role in the destruction of campus environments, it is also believed to have contributed to their prominence (Coulson, Roberts and Taylor, 2015, pp. 116–117). It is implied that "place has a valuable strategic function" for universities now more than ever (Coulson, Roberts and Taylor, 2015, p. 117). Even Sanjay Sarma, the head of Open Learning at MIT[5], calls the campus experience "the magic of campus" (Agarwal and Paucek, 2015). For Sarma, online learning, made possible by technology, cannot match in-person learning (IAAC Lecture Series - The Future of Learning, 2020). The physical experience of campus opens a particular part of the brain, something that cannot be achieved through the online experience (IAAC Lecture Series - The Future of Learning, 2020).

In addition, there are discussions regarding the necessity of the university space based on the term *material*, which becomes one of the keywords in later sections of this paper. For instance, Hashim Sarkis speculates that "material presence becomes even more heightened" (DigitalFUTURES: The Future of the University, 2020). Also, Ila Berman notes that there is a need for an alternative model for university spaces which will be "the construction of a kind of spectrum from the most immaterial context to the most material" (DigitalFUTURES: The Future of the University, 2020). She emphasizes the discovery of new spatialities in which humans can interact with *matter* (DigitalFUTURES: The Future of the University, 2020).

Therefore, the discursive field can be described as a ground for a duality that increases the arc of the swing with the effects of the pandemic, and in this way, emphasizes a debate on whether there is a real need

[5] Sanjay Sarma expresses himself in his speech as stated: "Even me who is the head of Open Learning at MIT (…)." (IAAC Lecture Series - The Future of Learning, 2020)

for physical space. These debates can be thought of as the viewpoints that precede the subject or object, that vary in grades, or highlight the subject-object duality. For example, while the statement that the physical space is "underconceptualized" may underline the university space's interwovenness with the objective world, those who argue that universities would not survive as the physical space may defend the detachment of the university space from the objective world. It is also possible to find the seeds of subject-object dichotomy in a few examples from the historical path taken by universities.

For example, universities' desire to generate "independent thought", which is a step that led to establishing Cambridge and Oxford universities in England, has created a spatial detachment from the city (Parsons, 1963, p. 16). Through an epistemological question, the university can be spatiality read as a reflection of the idea that knowledge can be conveyed by isolating the university from the world. In other words, there may be a spatiality in which the subject is distanced from the object[6]. Another example is the foundation of the Invisible College[7] in the 17th century. As a community gathered in many places around the city, the Invisible College was formed by the transition of scholars from Oxford and Cambridge to the city (Parsons, 1963, p. 17). There can also be an emphasis on the university as a social community; it is possible to grasp the seeds of the university space that is generated around the mastery of a subject. Such a view legitimizes the idea of a university "not identified with an institution or its buildings." (Sturm and Turner, 2017, p. 299). Related to such views, more recently, anti-institutional movements such as "Really Open University-(ROU)"[8], "Invisible University"[9] which emerged around 2010, constitute examples of university space. It can be stated that such movements bring the subject to the forefront in the production of university spaces.

[6] With reference to Michael J. Crotty, according to a positivist perspective, it can be described as subject-object dichotomy, which means that there is a great distance between subject and object that is objective distance. This distance must be kept as it should ensure objectivity (Crotty, 1998).
[7] It later evolved into the Royal Society in the 17th century (Sturm and Turner, 2017).
[8] Like Really Open University (ROU), Sturm and Turner (2017, p. 299) refer to some movements such as "the university for strategic optimism in London (USO)," "WATU We are the university."
[9] ROU propounds "Invisible University" though criticism of the university as a machine, an instrument of the entire business world. It notes that there is nothing left to be saved or transformed as a university, and returns to "the shell of the old" and offers to reveal the invisible university based on the construction of community "an universitas magistrorum et scholarium, a community of teachers and scholars" See https://reallyopenuniversity.wordpress.com/2010/12/11/four-theses-on-the-invisible-university/ [Accessed: 18 May 2020]

A new lens to see beyond subject-object duality

This paper proposes that there is a need for a new lens beyond the subject and the object in the production of university space. In this regard, it brings about a sociomaterial perspective focusing on "a position of togetherness" rather than classifying the world in binary terms of non-human and human, or material and social (Acton, 2017, p. 1443). Sociomateriality, with origins in the 1990's[10], began to appear in the literature as "an umbrella term" (Orlikowski and Scott, 2008, p. 456) around the end of the 2000's[11]. Although sociomateriality generally tends to eliminate the dualities such as subject-object and social-material, it contains "diverse onto-epistemological scenarios" that involve various perspectives regarding overcoming the dualities, like a spectrum[12]. When these are arranged on a spectrum in relation to humanist-materialist perspectives, it becomes apparent that while numerous authors have more humanist views, others take a more materialist stance (Moura and Bispo, 2020). The proposed lens is rooted in new materialisms and geographies, which can almost be described as the two extremes of the sociomaterial spectrum. Accordingly, new geographies stand out as operating from a more human focus compared to the new materialist perspective. Additionally, while new materialisms approach humans and non-humans as material elements, new geographies claim that "space is built and materialized by human action" (Moura and Bispo, 2020, p. 358) without the reduction of non-human elements to material elements subordinated to human action. Both approaches can be considered to develop a new field for debates on university space because of their relatively distinct perspectives along the spectrum and capacities to generate discourses on spatiality.

[10] Initially, it has been intensely developed in the fields of studies such as information technologies, organizational studies to redefine the intricate human-technology, human-computer relations such as Wanda Orlikowski's article "Learning from Notes: Organizational Issues in Groupware Implementation. Readings in Human–Computer Interaction" in 1995 and Karen Barad's article "Posthumanist performativity: Toward an understanding of how matter comes to matter" in 2003. From a broad perspective, for the current era, it is possible to note that this discourse has been expanded to explain human-nonhuman and social-material relations.

[11] In 2008, "Sociomateriality: Challenging the Separation of Technology, Work and Organization" by Orlikowski and Susan Scott, and in 2007 "Sociomaterial Practices: Exploring Technology at Work. Organization Studies" by Orlikowski are among the first appearances of sociomateriality.

[12] Although these perspectives do not employ the notion of sociomateriality, it is believed that they implicitly point to the assumptions of sociomateriality. (Moura and Bispo, 2020, p. 357)

From a general perspective, sociomateriality brings the theorization of "an inherently inseparable relational ontology of the social and material" through moving beyond "the illusion of separation between human and material spheres" (Acton, 2017, pp. 1443–1444). While *material* indicates "all the everyday stuff" which is "both organic and inorganic, technological and natural: flesh and blood, forms and checklists, electronic records and databases, furniture and passcodes, snowstorms and dead cell zones, and so forth," *social* points to "symbols and meanings, desires and fears, and cultural discourses" (Scott, Hargreaves and Fenwick, 2015). Sociomateriality sees all of them as the elements penetrating one another, acting together (Scott, Hargreaves and Fenwick, 2015). It does not "privilege human consciousness or intention in any conventional sense, but traces how knowledge, knowers and known (representations, subjects and objects) emerge together with/in activity" (Fenwick, Edwards and Sawchuk, 2011).

This theoretical lens that consists of new materialisms and new geographies, by embracing knowing and being, may facilitate the research of "becoming and knowing as an entangled amalgamation of people-place-practice-process" (Acton, 2017, p. 1449). Such a perspective does not treat people as separate from place, or place separate from practice or practice separate from process. Rather, it interprets space as "the inseparable mélange of people, place, technologies, interaction, discourse, feeling, value and power" (Acton, 2017, p. 1441). Nevertheless, this does not mean that there are no related attempts to look at the university space through such a lens.

For instance, Andrew Harrison and Les Hutson (2014, p. 117) emphasize the dispersion of the learning spaces around the city. They do not fix the meaning of learning environments into the conventional limits understood by schools; they contribute to the literature by exploring spatialities at different scales within the city. Their research is also valuable for uncovering examples of different spatialities. For instance, they refer to Aalto University, which diversifies spatialities through a journey, such as Aalto on Tracks or Aalto on Waves[13]. They may be

[13] "Aalto University in Helsinki in 2010 rented a train ('Aalto on Tracks') to take a group of some 100 students and faculty to the Shanghai Expo. In 2011 they took another group of students by cruise ship from Lisbon to Sao Paulo in Brazil ('Aalto on Waves')." (Harrison and Hutton, 2014, p. 117)

valuable as examples of producing space that emerges from particular entanglements, also implying a sociomaterial mindset.

In 2014, Kim Dovey and Kenn Fisher (2014) focused on learning spaces by creating a new materialist approach in their study. They claim that looking at school environments based on the term *assemblages* offers spaces that enable new pedagogies (Dovey and Fisher, 2014) that are needed for the future of learning spaces. By contrast, Peter David Whitton (2018) advocates the definition of space as the reiterated reproduction of space through social relations. This is generally referred to as the new geographies perspective. In this respect, he seems to deal with university space as produced through the subject-oriented approach.

Timon Beyes and Christoph Michels (2014) redefine university spaces through the notion of multiplicity, relationality and affect by referring to sociomaterial theory to conceptualize space, which brings about a performative understanding of space. For them, a "processual understanding of the socio-material world" will become essential (Beyes and Michels, 2014). They continue by stating that "space emerges in the performance of various kinds of relations between material things, humans, words, narratives, technologies, everyday practices, moods or feelings, and a wealth of other material and immaterial elements" (Beyes and Michels, 2014). In a similar vein, Renae Acton (2017, p. 1444) also examines university space through the sociomaterial lens, and defines "the relationship between space and social" as "a communally constitutive state of becoming". Specifically, it is "more than simply 'intertwined', 'mutually constitutive' or even 'merged'" (Acton, 2017, p. 1444). These studies can contribute from many angles to the comprehension of space within the sociomaterial perspective.

The other study that may be crucial in the literature is based on the analysis of alternative university space by Dalal Elarji and Christoph Michels. They criticize universities for including "spaces exclusive for 'making' in their campus or estate developments." For them, "such spaces are often referred to as 'workshops,' 'makerspaces,' or 'fablabs' (…)" (Elarji and Michels, 2020, p. 13). Instead, they point out "The Floating University Berlin (FUB)" as a response to this criticism, as it has the potential to be an "embodied being in the world" (Elarji and Michels, 2020, p. 13). It is worth nothing that there are various implications

regarding sociomateriality, even while not expressing the concept, but stating that an alternative university "suggests a processual understanding of material and non-material elements on site" (Elarji and Michels, 2020, p. 13), which makes it valuable for the field of study.

In general, such studies aim to develop an approach to the future of the learning environment by examining the current era, implicitly or explicitly using the sociomaterial perspective.

A dialogue with the 1960's

In addition to making the sociomaterial lens a means of looking to the future by revealing it as a retrospective outlook on interaction with the past, this article aims to be a contribution to the existing literature. This paper argues that the debates over the sociomaterial approach can be traced back to the discussion on university space already under way in the 1960's[14].

Dialogue with the 1960's has been based upon the understanding of historical trajectory as a continuum. As De Carlo has written, "history does not concern itself with the past, but with the present and gives direction to the future" (Eyck, 1966). In a way, similar to that approach, this research internalizes an understanding of the past-present-future as the "continuum" described by Aldo Van Eyck (1966). Within the framework of this study, the present and the past, namely the 2010's-2020's and the 1960's, attempt to engage in a dialogue that would have the potential to bring about a discursive ground of the future.

In the 1960's, Europe was living through a period in which criticism of productions was generated along with the productions. For example, when Plateglass universities were constructed in England in the 1960's, they were immediately and extensively criticized. 1960's architectural periodicals also took an active role in the debate. Many journals put

[14] On the other hand, there are also studies investigating university space with a retrospective view. Some of them include Federica Doglio's "'The school as a city and the city as a school'. Shadrach Woods and Cedric Price: Experiments to rethink the university", Francesco Zuddas' "The Idea of the Università" and "The project of Universality", John McKean's "The English University of the 1960s: Built community, model universe", Adam Wood's "Giancarlo De Carlo's Concept of Architecture – a Powerful and Inclusive Tool for Thinking about Educational Space".

themselves forward under magazine titles such as "Universities" and "Architecture and Education" intended to spur discussions on university architecture. In fact, it is valuable to consider all of them discursively.

To briefly depict the landscape of this era, the period marked a shift in the conception of the university. Clark Kerr (2001), in his 1963 book "The Uses of University", emphasized the need to define the university in a new manner, under the name of multiversity. On the other hand, the student movements of 1968 represent one of the crucial moments in university history.

The intensifying discussions on the university space[15] that were held during that period are likened to "the cathedral building movement of the early twelfth century" (McKean, 2006). A similar argument was expressed by Joseph Rykwert (1968); the university had been described as the archetype of that period, indicating the peak condition of university architecture in the architectural debate. In 1962, the *Architectural Forum* depicted the period in an article published under the title "And now, the education explosion...". In 1963, the *Architectural Review* launched a special issue under the simple title of "Universities". In 1964, a symposium entitled "University Planning and Design: A Symposium" was held. Cedric Price introduced a new understanding of university space with "Potteries Thinkbelt" in October 1966. *Architectural Design* entitled its December 1966 issue "Living in Universities". In 1968, *Architectural Design* published an issue entitled "What about learning?", for which Cedric Price was the guest editor. The same year, Rykwert's article "Universities as Institutional Archetypes of Our Age" was published in *Zodiac*. Subsequently, in 1969, the *Harvard Educational Review* published a special issue entitled "Education and Architecture", which was followed in 1970 by another from *Architectural Review* entitled "The New Universities". As can be seen from the titles of these magazines, the 1960's was a period of intense discussion on university architecture.

[15] This has been more intensely felt in the context of England. In that period, discourses were also physically constructed. Examples include Giancarlo De Carlo's University College in Urbino and Shadrach Woods' Free University of Berlin, Cedric Price's non-university, the foundation of the Open University and University of the Air.

By expanding the scope of debate, those discussions may have contributed to the present and future of the discursive ground. It is worth noting that when they are re-explored through a sociomaterial view, or in other words, when they are overlapped with the sociomaterial perspective, the discussion revolves around certain nodes. Before introducing these nodes, the primary stance on which this paper is based must be defined. This stance leads to a perspective that encapsulates the entirety of the discussion.

Introduction of an onto–epistemological perspective

For the purposes of this study, in the research of space, value is attributed to both the study of the things that produce it and the study of how its existence is defined. While "epistemology deals with 'the nature of knowledge', 'how we know what we know'", ontology "is concerned with 'what is'", "the study of being", and the nature of existence (Crotty, 1998). As a similar approach, while epistemological research may produce findings about the nature of knowledge—specifically spatial knowledge—ontological research may bring about a way of understanding the nature of things, the nature of existence, and spatial existence. In this respect, a new lens that can produce both is important. Such a view neither focuses entirely on the nature of things nor ignores it. It engages in the relationships between things as well as the nature of things. The lens used reexamine university space can be said to have both "roots" and "wings"[16]. With its roots, the research on university space may deserve an ontological perspective, and with its wings it may converge with the epistemological stance, and by doing so, unveil possible relationships and the spatial knowledge that would arise from them. Accordingly, the research addresses an onto-epistemological stance in constructing a new ground for the inquiry into university space.

This onto-epistemological root may evoke Giancarlo De Carlo's 1969 article "Why / How to Build School Buildings", published in the *Harvard Educational Review*. De Carlo (1969, p. 12) emphasizes that the

[16] Dovey (2009, p. 24) emphasizes that for the research on place–space, "the task is not to decide between an architecture of roots or wings but to understand that it is always both."

problems of "how to" in the period of crisis cannot be addressed "without first posing the problems of 'why'", which leads to an exploration into the nature of the problem. Referring to him, within why questions, the lens brings an ontological perspective. Later, how questions may generate an epistemological approach to university space.

Reading the 1960's through the sociomaterial lens

Based on the perspectives of new materialisms and geographies, the sociomaterial outlook re-establishes the discussions on the university space at the ontological and epistemological level. The new materialist perspective pioneers discussion at the ontological level.

New materialisms, introduced by Manuel DeLanda and Rosi Braidotti in the mid-1990's, "represent a new understanding of materiality" and a new reconstruction beyond dichotomous structures (Moura and Bispo, 2020, p. 353). There are discourses on "emergent being" and "becoming" that launched discussion at the ontological level. Having abandoned "the distinction between organic and inorganic, or animate and inanimate, at the ontological level", Samantha Frost and Diana Coole (2010, pp. 8–9) propose "a monological account of emergent, generative material being." Gilles Deleuze's understanding of "becoming" must also be referred to, as he is concerned with "becoming (beings-in-formation)" as a "symbiosis" amalgamating "the human and non-human, the organic and nonorganic" (Thrift and Dewsbury, 2000, p. 417).

Such a discussion may echo De Carlo's and Shadrach Woods's positions regarding educational architecture. Within his expression of "the solutions would not be stable but in continual formation", De Carlo (1969, p. 22) may have implicitly alluded to "becoming", "beings-in-formation" while he held that the nature of educational architecture resides in having "open" and processual conditions rather than fixed, "stable" and "secret" ones. In addition, while Woods (1969, p. 121) emphasized the intertwined relationship of society and non-structure that he proposed about school architecture, he also defined society as "a state of becoming". Thus, he provided a definition that may bring about a togetherness through "becoming". Such a view would become valuable since it "exhibits great potential for change"

(Woods, 1969, p. 121). Due to his expansion of "becoming" through society, Woods's discourse converged with the subject-centered-human-centered-perspective, leading to new geographies.

Based on the sociomaterial lens, DeLanda's approach to comprehending the nature of things as related to their properties and capacities corresponds to an ontological-level debate. DeLanda (2011, pp. 3–4) drew attention to the difference between properties and capacities, and how entities operate. He exemplified it through the kitchen knife.

> A kitchen knife may be either sharp or not, sharpness being an actual property of the knife (…). There is, on the other hand, the capacity of the knife to cut things. (…) This already points to a very different ontological status between properties and capacities. (…) the knife's capacity to affect is contingent on the existence of other things, cuttable things, that have the capacity to be affected by it. Thus, while properties can be specified without reference to anything else, capacities to affect must always be thought in relation to capacities to be affected. (DeLanda, 2011, pp. 3–4)

Accordingly, although the existence of capacity is based on the existence of properties, capacity cannot be realized based on the properties alone (DeLanda, 2011, pp. 3–4). In other words, to reveal the capacity, and realize the potential, the knowledge of entities regarding properties is not enough; there is a need for knowledge of relations and events in which interactions and entanglements can materialize.

DeLanda's view on the nature of things may evoke the 1969 article "The Friendly Object" by Peter Prangell, which deals with the human-object relationship on many scales. For Prangell (1969, p. 36), "Each object, friendly or unfriendly, is charged with information which we can absorb into our personal system of connections. Each object tells us something of its maker and our relation to him. It can, by its condition, tell us something of its relation to other users." He emphasizes that "more importantly though, we have the possibility of using objects and places in different ways at different times", which allows school buildings to be open to various forms of "immediate change" (Prangell, 1969, p. 36). Thus, he defines objects that allow different

associations, at any scale, from a desk to a building, as friendly (Prangell, 1969, p. 36). Such an event-based conception of objects may refer to DeLanda's emphasis on the capacities of entities. Similar to DeLanda's implication on the capacities of things that are only uncovered by the relations between them and what they interact with, each possible relation or association expressed by Prangell uncovers numerous capacities of entities and makes them "friendly objects". In other words, a "friendly object" that provides many relationships with other things may correspond to the entities which are understood based not only on their properties but also on their capacities.

DeLanda's description of the nature of the object through associations may also be similar to a description of the object through opening and "becoming", which again brings to mind De Carlo's proposal for schools. De Carlo (1969, pp. 30–31) proposes "to organize structures articulated so as to make possible any integration of different activities in open and variable configurations" rather than "to produce objects finished and defined in every aspect, whatever their scale." De Carlo (1969, p. 31) also takes an opposing stance to any prefigured model, any "morphological type of model" which could be reached. For him, form "cannot remain outside the development as its preestablished conclusion, but it must be within it as an evaluation reproposed at every stage" (De Carlo, 1969, p. 31). In a way, this stance is close to DeLanda's prioritizing of capacities rather than properties related to the nature of things.

At the epistemological level, new geographies seen through the sociomaterial lens expand the discussion on university space. New geographies interpreted from a sociomaterial perspective examine "how spaces help produce the social, but are also produced by human activity and meaning" (Fenwick and Nimmo, 2015, p. 70). They destabilize dualities and approach space beyond preconceived classifications (Fenwick, Edwards and Sawchuk, 2011). They can be thought of as a set of discourses on how to construct spatial knowledge.

One point that may find its equivalent in the 1960's is the argument concerning the production of space through human and non-human entities by avoiding dualities. Such an argument criticizes approaches based on the understanding of environment as shaping people, such as

"'environmental determinism'[17] in which human behavior is directly influenced by the surrounding environment" (Whitton, 2018, p. 39). On the other hand, it criticizes approaches that reduce the environment to a passive entity (Thrift and Dewsbury, 2000, p. 415). It claims that the relationship between the human-environment or human-non-human is more complex (Massey, 2005). Related to that complexity, Doreen Massey (2005, p. 140) proposes the notion of "throwntogetherness", which means "a negotiation which must take place within and between both human and non-human". Similarly, De Carlo's discourses contain the seeds of critique on "environmental determinism". He noted that "there is no direct and reciprocal relationship between architectural quality and the quality of the educational system" (De Carlo, 1969, p. 20). He also implicitly alluded to the complex and dynamic relationship between the human-environment, rather than direct or dictated relations between each other (De Carlo, 1969, p. 20).

Such a dynamic relationship may be aligned with the assemblage discussion in the realm of new materialisms. Assemblage[18], first suggested by Deleuze in the last decades of the twentieth century, and expanded on by DeLanda as a theory[19], corresponds to constitutive entanglements, collectives, and sociomaterial formations defined in sociomateriality. For DeLanda (2006, p. 3), "entities ranging from atoms and molecules to biological organisms, species and ecosystems may be usefully treated as assemblages (…)". Dovey and Fisher (2014, p. 49) exemplify assemblage throughout a learning space as "A learning cluster is not a thing or a collection of things, it is the assembled connections between them (at once social and spatial) that are crucial. Assemblage is at once verb and noun: it is the flows of life, people, materials and ideas that give the learning cluster its emergent potential." Similar to Dovey and Fisher's understanding of assemblage, Prangell (1969, p. 37) embraced the building as "an arrangement of objects—the ceilings, walls, windows, doors, floors, steps, columns and appliances."

[17] "The most absolute of environmental determinists saw human character and social organization as a fairly direct and unmediated product of the physical (natural) environment." (Massey, 1984, p. 1)
[18] "The term 'assemblage' here is a translation of the French 'agencement' which is akin to an 'arrangement' or 'alignment': it suggests at once both dynamic process and a diagrammatic spatiality." (Dovey and Fisher, 2014, p. 49)
[19] DeLanda (2006, p. 4) advanced the assemblage theory he developed referring to Deleuze, and describes it as "neo-assemblage", or "assemblage theory 2.0".

The understanding of human-non-human entities' associations through sociomaterial complexity, entanglements and assemblage is also related to the consideration of space within a multi-scale approach. On the grounds of these new geographies, Massey's attempt to transcend global-local duality reflects such a view. Massey (2005, p. 184) criticized the discourses that make a distinction between global and local. She describes "a world in which the local and the global really are 'mutually constituted' (…)" (Massey, 2005, p. 184). As she stated, "the global is in the local in the very process of the formation of the local" (Massey, 1994, p. 120). Also, De Carlo (1969, p. 29) emphasizes the importance of operation "from the territorial to that of the smallest associational unit" since "the dimensions of the consequences remain constant from the highest to the lowest level", emphasizing that there is no difference between the highest and lowest levels of understanding.

Another overlapping node between the sociomaterial approach and 1960's educational architecture discourses may be the understanding of space in terms of relationality, multiplicity, and openness. To overcome dualities such as global-local or human-non-human, Massey proposes space as "a product of interrelations (relationality), a physical realm composed of heterogeneous parts (multiplicity) and an open reality constantly under construction (malleability)" (Susen, 2014). On another note, De Carlo (1969, p. 23) indicates the value of "the entire network of interrelations", which is generally ignored by the architect. For him, a school should not be "a closed apparatus but a structure spread out in the network of social activities, capable of articulating itself to their continual variations" (De Carlo, 1969, p. 23). It should be open, and, therefore, lead to an "evolutionary process" (De Carlo, 1969, p. 23). He also highlights the term "multiplicity", which provides an organization of "a place for opportunities for experience" (De Carlo, 1969, pp. 22–24). Additionally, Eyck (1966) emphasized the "relative, open and non-Euclidian concept of architecture" of De Carlo when talking about his university building in Urbino. Parallel to this, Woods (1969, pp. 116–121) noted that change should be the "only constant" for the future of educational buildings while drawing attention to the necessity of a "non-centric educational web", in which "everything could be everywhere".

On the other hand, in the background of Massey's conception of space through relationality, openness and multiplicity, there can be an attitude that does not perceive mobility and movement as a threat to the existence of space (Kaya, 2013). On the contrary, for Massey (1993, p. 67), "if one moves in from the satellite towards the globe, holding all those networks of social relations and movements and communications in one's head, then each place can be seen as a particular, unique point of their intersection." Such a discussion may evoke the notion of the "disaggregated", "dispersed" or "nucleus-orbit" school suggested by De Carlo and Cedric Price. As expressed by De Carlo (1969, p. 26), the orbit "which can be broken up and dispersed" and "nucleus" as "concentrated and unified" and "its possibility of aggregating themselves with the structures of the 'orbit'" may provide the dynamism and mobility of a school. It may bring about different scales of operation by enabling a school to be expanded "with the city and territory, from time to time as the necessity arises" (De Carlo, 1969, p. 26). In addition, Price (1966), with his famous proposal "Potteries Thinkbelt", put forward the need to reconstruct space through mobility, emphasizing the transition beyond the fixed space with the introduction of communication technologies. In developing the concept of university on the move, he remarked that universities in their dispersed form produce a new understanding for university space beyond an "artificial student community" (Price, 1966).

As a final section to this part of the paper, it should be added that although the discussion on the university space is divided in two, the ontological and epistemological level, they are not independent from each other. They produce and affect one another. In other words, they become each other's cause or consequences. For example, while "assemblage" refers to associations, it also gives clues about the entities' ontological status. In parallel to this view, DeLanda (2006, p. 6) implied the use of assemblage to understand "the ontological status of the entities". As another example, Massey's relational space also speaks on the ontological level and points to emergent being.

Conclusion as a starting point

In conclusion, the onto-epistemological perspective based on the sociomaterial lens grasps new materialisms and new geographies, using 1960's inspiration to create new ground for future discussions regarding the university space. The scope of the sociomaterial mind-set is valuable in embracing such a rich field of discussion. Therefore, debates that prompt dualities to the extreme find themselves in a field that embraces all points. Such a lens may become the starting point for constructing discourses for the future.

Three ideas must be reiterated within the scope of this article. The first is the introduction of the *onto-epistemological perspective*. The research may prove valuable while inquiring not only into how to design university space but also why it is designed. Such a perspective brings a holistic and comprehensive view to this problematic field. This perspective, inspired by the question of *why*, responds to *how* to discuss university space.

The second point is the detailed explanation of the *sociomaterial view*. Current discussions of university space, also triggered by the COVID-19 pandemic, are based on the presence or absence of physical space, thereby underlining the subject-object duality. At this point, sociomaterial understanding reconstructs the grounds for debate by emphasizing the subject-object entanglement. The research points out the importance of a shift in thinking on the university space. Rather than producing, reproducing or abandoning them, it leads to the exploration of the potential of existing spaces through new assemblages, sociomaterial entanglements and becoming. The future holds the potential to generate new assemblies, associations, and spatialities for university spaces that are in danger of losing their physical footprint. In other words, they would survive if they became *open* and *friendly*. The university space that allows associations begins to be seen for its capacities beyond properties. The space produced for a specific purpose survives, even if that purpose begins to disappear or transform. An example of this could be the shift from learning to self-learning. This concept will apply as long as the space is open and friendly, transforming and revealing its evolving existence through the term *becoming*. Thus, the survival of university space would be dependent on *becoming*, *emergent being*, and *capacity* along with the knowledge of space through

assemblages, *entanglement*, relations and *multiplicity*, regardless of its physical footprint.

Finally, the understanding of historical trajectory is crucial within the frameworks of this study. When the sociomaterial stance that has emerged in recent times is read together with the historical process of a critical period such as the 1960's, it is hoped that it will open a new door to the future. Therefore, the research is concerned with reading the past, present, and future as a *continuum*, rather than as a set of disjointed periods. The 1960's and 2010-2020's engage in a dialogue together, creating a discursive ground for the future. In other words, when a new lens generated by certain factors of today's conditions moves toward the past or a given historical period, it may trigger a starting point for the exploration of, if not the actuality, the *potential* of university space in the future.

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Aslı Alanlı, PhD Candidate in Architecture in Middle East Technical University (METU). Received her Bachelor's degree in Architecture from Middle East Technical University (METU) in 2012, her master's degree in Architecture from TOBB University of Economics and Technology (TOBB ETU) in 2017. She continues her PhD studies in Architecture in METU. Her research interests include architectural education, philosophy and architecture, architectural design and university space. She had taken part in research related to architectural education (Erasmus+ Project) as a researcher for two years at TOBB ETU where she currently works as a part-time lecturer.