

Material turn: Anthropology, material and meaning

Suneel Kumar¹, Shahzad Ahmed²

¹Lecturer, Department of Anthropology and Archaeology. University of Sindh, Jamshoro Pakistan

²National Project Officer, Internal Labour Organization, Islamabad Pakistan

Vol. 01, Iss. 01, June 2022, pp. 11-21. doi: [10.52567/ijcb.v1i01.134](https://doi.org/10.52567/ijcb.v1i01.134)

Abstract

The literature produces in Anthropology related to indigenous artifacts significantly focused to understand the means of cultural complexity however, aspects of materiality of the artifacts merely explored. However, since 1960 the attributes of material culture came into the discussion based on the Marxist ideology and in contemporary discussion material culture is being discussed in relation to living through objects based on the argument that objects can signify the cultural meanings of social institutions, and structures by marking the aesthetics values of a person or society. Nevertheless, in these lines the concept of power and identity in society is also being discussed and it is tried to understand materials in a backdrop of human-environment relations. To unfold the dynamics revolving around the material culture and its meaning, systematic literature was carried out and developed themes to build argument that there is need of a social theory of material and life as it is entangled with other life processes to fill the gaps existing while studying the material aspects of the objects and its relationship with social life.

Keywords: *Material Anthropology, Objects, Meaning, Culture, Environment*

Received on: 02-02-2022

Revision on: 18-04-2022

Published on: 30-06-2022

Correspondence:

Suneel Kumar

Email: suneelkumar@usindh.edu.pk

Copyright: Authors retain copyright and grant the IJCB right of first publication with the work simultaneously licensed under a Creative Commons Attribution (CC-BY) 4.0 License that allows others to share the work with an acknowledgment of the work's authorship and initial publication in this journal

Introduction

Anthropology engagement with material goes back in past to environmental determinist – which argues that culture is shaped by the environment; cultural ecology - argues that cultures are shaped by mix of technological, environmental and behavioral forces and any cultural comparison of similar environment need to include these forces to understand the similarities and differences among cultures (Tucker 2013). Other anthropologists too in one way or other engaged with the material but implicitly. For example, Malinowski's now classic ethnography with Torbiand Island people, in which he highlighted how sea shell necklace and armband travel across the different islands produce an economic system, that he called Kula Ring system (Malinowski 2014 [1922]). But, for him the *function* of Kula Ring as a *system* was more important than materiality of sea shell and necklace. Similarly, various other anthropologists studied, collected, wrote about the indigenous artefacts but artefacts were means to understand the complexity of culture, and the materiality of the artefacts remained at the margins of the discipline.

From these early engagement with the material culture, in 1960s, cultural materialist, a paradigm influenced by the Marxist historical materialism emerged to argue for the materialist understanding of culture. Marvin Harris (1979), an anthropologist who coined the terms cultural materialism, argues that culture consists of three levels or dimensions: firstly, “material” aspect that consists of technology, and economy, which influence the other aspects namely, “structure” which is organizational in nature such as domestic organization, kinship structure and local economy, and “superstructure”, which is the ideological aspect of the culture. Later works in anthropology tried to give more credit to materials by engaging with them in more direct way. Arjun Appadurai (1988) edited volume, *The Social Life of Things*, provide a nuanced understanding of how materials take on a “social life” as they travel along with humans. These materials, like Silk movement from China to other parts of the world through Silk Route in Himalayan mountains become to define the people of Silk trade rather than people defining the silk. This is what Miller (2005) said, “things people make, make people” (38). These works can be said to have more explicit engagement with the materiality; however, the culture remained a key to understand the materials.

In anthropology of art, material culture has been looked down as having an “agency” in defining the social and cultural identities or in defining the intentions of humans. Alfred Gell (1998) argues that Art objects are unintentional objects, however, they can “act” as the medium through which people “manifest and realize” the intentions. Hence, art objects are extension of human agency; they are bound together, and it is not possible to reduce the art objects passive, only recipient of human intentionality. Similar kind of argument made by W.J.T. Mitchel in his book *What do pictures want* (2005) in which he argues that pictures are not inert, rather as animated beings, they desire, have needs, appetite, demands and drives of their own.

On the other hand, the field of material culture study today has extended the arena of studying culture which is “created and lived through objects” (Woodward 2007, 04). Material culture study argues that objects can signify the cultural meanings of social institutions, and structures by marking the aesthetics values of a person or society. This also can highlight the identity and power structures of society (Woodward 2007). These above works, however, argues Holbraad

(2011) were tried to understand materials in a backdrop of human-environment relations. I will discuss in detail Holbraad's argument later below.

In the matter of above discussion, in this literature review I focus on influence of recent ontological turn in archaeology and anthropology, and how various scholars have engaged with the material differently. In archaeology I focus on Benjamin Alberti (2009, 2011), Christopher Tilley (2005, 2017), and Bjornar Olsen (2003, 2015), while in anthropology I focus on Tim Ingold (2005, 2007, 2012); Santos-Granero (2009) and Martin Holbraad (2011, 2012). I am limiting my focus on these scholars due to scope and space of this paper, and also because they explicitly engage with the ideas of materiality in ontological turn, however there are other scholars who are also exploring the material within ontological turn. I discuss the works of above scholars especially their promises in developing a methodological way to explore the material and finally will present how scholars recently have turned towards natural science to understand the materials as a way towards conclusion.

Methodology

This research article is based on systematic literature review and carried out with the idea to collect the peer reviewed published articles on the topics which revolve around the material Anthropology. To be systematic and specific, researcher identified the key words such as archaeology and material culture, symmetrical archaeology, network approaches and archaeology, material culture and identity, object oriented ontology, material in Anthropology, material attribute and anthropology, concept of things and objects, ontological determination. In the start 107 articles were retrieved from the various search engines, all of the articles were assessed on the basis of inclusion and exclusion criteria and finally 27 articles were selected for the review. Based on the review themes were developed and discussion were generated to reveal the dynamics of material with respect to its meaning specifically in the domain of Anthropology.

Major Findings- Material in Archaeology

The engagement of archaeology is exclusively with material remains of the past. This makes archaeology the discipline whose subject is the materials, rather than living human beings. But with recent ontological turn the question emerges: how ontological turn fundamentally can change "how we [archaeologists] conceptualize what it is we 'see' when we unearth other people's past life worlds (Alberti and Bray 2009, 337). Such questions, they argue allow to rethink the "core theoretical issues in archaeology around the nature of matter, ontology and agency" (Alberti and Bray 2009, 337). In other words, it matters if for indigenous people the things that archaeologists find during their excavation are not nonliving, then the question is how to theorize and interpret the artefacts found, as the archaeological presumptive dualism of living and nonliving in which archaeology most of the time operate influence how they interpret the objects (Alberti and Bray 2009).

Olsen along with Witmoer (2015), hence, called for the "symmetrical archaeology" to explore the material in archaeology. Symmetrical archaeology "emerges from the promise that the difference is grounded in the qualities that objects are entities have, and which thus should be acknowledged, and at the outset, treated symmetrically without a priori subsuming them to an asymmetrical

regime of radical divides” (Olsen and Witmore 2015, 188). Influenced by the Latour’s symmetrical anthropology which argues for the multiple modes of existence of human and nonhuman. A flat ontology where along with humans, nonhumans too are actants (Latour 2005).

He turns to “network approaches” by which he meant Actor-Network Theory (Olsen 2003, 98) as for him phenomenological approach is promising; however, it does not allow things to emerge ontologically. His approach is overt in an anecdote that he cites, in which a polar explorer wrote his account of solo, without help expedition of the artic, which Olsen argues was not solo rather he is helped by the tent, pair of skies, sledge, cloths, food, communicator etc. (Olsen 2003, 100). In other words, the expedition is possible due to network of explorers and other nonhuman things. Similarly, Christopher Tilley (2004) also criticizes the phenomenological approaches to materiality. Although he sees a huge promise in phenomenology like Olsen, especially as argued by Merleau-Ponty. For him phenomenology has constraints as it cannot take us beyond the experiences of consciousness. He argues, “the pre-reflective embodied consciousness” (Tilley 2004, 31) is important to understand the materials. In fact, for him the materials are agents which actively produce the world and identity and should be engaged as such rather than considering materiality as a means – a place, space, text or discourse, to ends – the social identities.

For such pre-reflective experience, he argues to consider materials, especially places and spaces as animate, having an anthropomorphic characteristic, like a person or living beings. Such a move for him is “from considering things as representing the world to us to things as producing that world for us”. (Tilley 2004, 31). To accentuate his argument, he provides plethora of archaeological and cultural evidences that how people of varied cultures around the world anthropomorphize the stones – for example, for menhirs in Finistère stones represent the “fertility, growth, and reproduction” suggesting stones as alive, capable of moving and having creative powers (Tilley 2004, 85). On the other hand, the axe-shaped menhirs of Bas Léon signifies distinction between human and landscapes (ibid). This argument places him much closer to the group of ontological anthropologists, who recently have argued for the “pluriverse” rather than “universe” as for many indigenous people the dichotomy of nature and culture or animate and inanimate does not exists (Descola 2013; Viveiros de Castro 1998; Kohn 2013).

Tilley’s (2004) understanding of material and anthropomorphic differentiates his approach from Olsen’s (2003) whose argues that nonliving things too have self-affirmation or renew like living beings however, in a very different way. Creating the hierarchies based on living and nonliving beings at the center is what Olsen deny in his symmetrical approach. Olsen’s approach in symmetrical archaeology writ large can be seen akin to Harman’s Object Oriented Ontology in which Harman argues things exists outside human mind as well as in relations to other beings and things, but relations does not exhaust the things (Harman 2017). Hence, for Olsen we must treat things symmetrical to other things, and the moral, agentive, and ethical arguments of treating things less or not equivalent to living beings is product of modernity. He argues,

“I do believe the material world exists and that it constitutes a fundamental and lasting foundation for our existence [...] Things, objects, landscapes, possess ‘real’ qualities that affect and shape both our perception of them and our cohabitation with them [...] founded on the premise that things, all those physical entities we refer to as material culture, are beings in the world alongside other beings, such as humans, plants and animals [...] In fact, the

object, specific to the Hominidae, stabilizes our relationships, it slows down the time of our revolutions' (Olsen 2003, 88).

Benjamin Alberti (2009, 2016) on the other hand asks theoretical and methodological questions regarding ontological turn in Archaeology. Alberti (2011) in a debate with other archaeologists and anthropologists on ontological turn argues that the relational or pluralizing ontology can make a difference in understanding the objects, the site where objects are found, the relations of the objects, and the construction of socio-cultural world through the objects. But more than this, the critical question is, can material unsettle our concepts which we preconceive about them and how ontological informed archaeology can engage with such materials (Alberti 2011). Posing questions in such a manner bring him closer to ontological anthropology, especially of Viveiros de Castro (1998) who argues that ontology in anthropology is about the alterity, the difference of engagement with the world and foregrounding such a difference by producing new concepts (see also Holbraad 2012).

However, the relationality of objects as seen in the works of Olsen and Tilley remains key to Alberti as well. He argues, the need is not only to give agency to objects found, but also to the people who have engaged with the objects differently than the way we [archaeologists] think of objects (Alberti et al. 2011).

To conclude, archaeology as a science of things can provide an essential grounding to ontological turn (Olsen et al. 2015, 02) but archaeology can also be renewed by learning from the ontological turn to question the basic assumption and practices (Alberti et al. 2016). The question of agency of things, archaeologists already take it seriously, however, if meaning of agency is providing "affordances and constraints on thought and action" then, materials always has profound effects on the lives of people and their understanding of the world as well as on their actions (Tilley 2005, 19). The need is to engage with the materials ontologically to give voice to most "subaltern members of our collective that have been silenced and 'othered' by the immaterialist social and human discourses" (Olsen 2003, 100).

However, none of the scholars in the works that I cite here provide any substantial methodological approaches to explore the ontological nature of the material. Olsen's (2003, 2015) engagement with Network approaches, or Tilley's (2004, 2017) Object Oriented Ontology, and Alberti's (2011, 2016) inclination towards ontological anthropology are good for the argument and can provide a new understanding to archaeological material. However, the question remains how to engage and study such materials in posthuman turn methodologically (Whatmore 2006).

Material in Anthropology

Material ontological turn in (cultural) anthropology is also taking various turns. A few scholars inclined towards thinking of material in and through entanglement with other humans and things, while others argue to think of materials as animate, the way indigenous people engage with as living being, rather than nonliving, while others talk about material as concepts, a methodological move than theoretical about the matter. I will discuss each of these three different dimensions of material turn in anthropology have been discussed by Tim Ingold (2000, 2007, 2012), Santos Granero (2009), and Martine Holbraad (2011, 2012) respectively.

Ingold has extensively argued for the entanglement of humans and environment. In his seminal work *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill* (2002) he

formulated “dwelling perspective” – in which human construct space while living *in* it. It is not that humans are outside the nature, influence it, make it, and transform it, rather he lives in it and transform it while transforming himself. Influenced by Heideggerian phenomenology, Ingold rejects nature and culture dichotomy and argues that human and so-called nonhuman nature are together (Ingold 2007). In his dwelling perspective, human and nonhuman living beings live together or make each other; however, he didn’t pay much attention to material world then, which he himself acknowledged recently (Ingold 2012). Tim Ingold (2012) called material as the “missing nonhumans” and redefines anthropology to include material objects as key elements of culture. He argues that for an anthropological theory of materials, there is a need for a “change of focus, from the ‘abjectness’ of things to the material flows and formative processes wherein they come into being” (Ingold 2012, 431).

He differentiates between material and materiality. Materiality, for him, is the human imposition on the material which we cannot touch; what we touch is the material of the rock, when we touch the cave, but not materiality, he argues (Ingold 2007, 07). The concepts of materiality hence, present material as a black slate, a tabula rasa, for the inscription of ideational forms on materials (ibid, 03), an Aristotelian understanding of matter, in which matter is inert and passive, waiting for some agentive force to give it a shape or form. Thus, it seems he goes on that “we have human minds on the one hand, and a material world of landscape and artefacts on the other [which we make]” (ibid, 04). Such understanding of the material argues Ingold (2007) were to “hibernate the materials in the basement of museology” (ibid, 05). He emancipates the material and argues to study materials as fluxes and flows of entanglement. Such an entanglement is a creative process in which relations are not *between* one thing and another, but they are lines *along* which things continually come-into-being (Ingold 2007, 3-4, italic original).

In his recent article *Towards an ecology of Materials* (2012) he argues that life is a creative process of becoming in which humans, nonhuman beings and things together participate like a “meshwork” (Ingold 2012, 437) and any anthropology not including all these would present a half picture of the world. The environment, hence, for him is constitutive of material in which, “all creatures swim” (ibid, 07). Following Deleuze and Guattari, he argues to “follow the materials. It is to think *from* the materials, not *about* them” (Ingold 2012, 437). The change in perspective is to tell the stories of the material as “they flow, mix and mutate” (Ingold 2007, 14) as properties of materials are not attributes. Rather they are the histories of what they do. “To describe a material is to pose a riddle, whose answer can be discovered only through observation and engagement with what is there.” (Ingold 2012; 435).

Ingold wonderfully discards the idea that matter is inert or does not have agency. Why conceptualize the material with the concept of agency, which has a human or living being orientation? He argues that “things are active not because they are imbued with agency but because of ways in which they are caught up in these currents of the lifeworld” (Ingold 2007). For Ingold, the properties of materials, then, are not fixed attributes of matter but are processual and relational. The matter is *in* the environment, hence interact with other material, organic or inorganic. Rusting, for example, is the interaction of air and iron. Hence, there is a presence of a tendency of rusting in both air and iron, only such a tendency emerges in an interaction. Hence, “to describe these properties means telling their stories” of iron and air and their coming-together or becoming in a process of rusting.

Ingold, to finalize his argument, follows Heideggerian phenomenology and Deleuze and Guattarian philosophy to argue to take materials seriously, “since it is from them that everything is made” (Ingold 2007, 14). An environment is material, but various materials live in the environment that continuously become; they are in flux, in relations with other material and beings in the environment. Ingold, argues to pay attention to process of such flux rather than material only. For example, a stone “emerges through the stone’s involvement in its total surroundings – including you, the observer – and from the manifold ways in which it is engaged in the currents of the lifeworld. The properties of materials, in short, are not attributes but histories” (Ingold 2007, 5). Santos-Granero (2009), on the other hand, turns towards indigenous people’s conceptions of things. In the edited book, *The Occult Life of Things*, he presents how in Amazonia people envision material objects as having extraordinary lives whose personae is not visible to lay people. Recent ontological turn in anthropology is also called as ‘animist turn’ (Viveiros de Castro 1998, Descola 2013). Animism in anthropology has long history, especially the works of Edward Tylor and Evans Pritchard’s. Animism is an idea that every being and thing possesses the soul that makes them to animate. And indigenous people engage with beings and things as living and as beings. The renewed interests in animism in ontological anthropology is largely to criticize and challenge the western understanding of concept of animism (Descola 2013).

Santos-Granero (2009) argues that the renewed interest in animism of Amazonia has scantily considered objects in their ethnographic study. Although, indigenous people of Amazonia engage with the objects as subjects. For many Amazonian people, the common conditionality of the world is humanity. In other words, all beings, and things were human first, it is only later that animals or things transformed into their current shape not retaining the human form (see also Descola 2013). However, objects still retain the human soul. Having a soul, they are subjects and people can communicate with them. The primordial form of all objects as human tie them in the same “symbolic frame of fabrication” with whom social relations can be created or artefacts themselves can create the relations (Santos-Granero 2009).

Martin Holbraad (2007, 2011, 2012) takes on completely different approach to materials. In the edited volume *Thinking Through Things*, which he co-edited with two other scholars, ask heuristic questions like, what do things do in an ethnographic setting? How can things alter themselves from the concepts we hold about them? And what to do, if things alter from our concepts? (Henare et al. 2007). Holbraad (2012) while working with Cuban diviners who uses a powder called *ache*, which gives them power to communicate with oracles for seeking the truth. He argues that *ache* cannot and will not make sense as a thing only because, although physically it is powder, but the very use and power of powder disturbs the concept we hold about it. How a powder can have the power of seeking the truth, he asks. Hence, when *ache* does not make sense as a thing, then, he argues, to think of *ache* as a concept (think=concept). Thinking of *ache* as a concept allows him to ask, “what kinds of things ‘things’ might be?” (Holbraad 2012) in an ethnographic setting.

Such take on things, argues Holbraad is post-humanist, in fact, goes even further that it frees things from any “ontological determination” of whatsoever (Holbraad 2011, 11). To free things, things should be treated heuristically rather than analytically. The analytical tool always locks the things in relation such sociality, spirituality, or agency, and argues, to “de-theorize the thing, by emptying it out of its many analytical connotations, rendering it a purely ethnographic ‘form’... (Holbraad et al. 2011, 11).

His approach to material then becomes methodological rather than any metaphysical, say ontological understanding of material. Things = concept is for “side-stepping just such theoretical prescriptions” (Holbraad 2011, 12) which is to say, for him theoretical analysis of things would reduce them to ‘theories of things’, a human inscription on what they are. He is interested in what they do, and in doing what things can do, “what kinds of things ‘things’ might” become (Holbraad 2012).

In arguing how what things might become can perturb our concepts about them, his heuristic approach set up the problem in different way. For example, he does not argue that “Cuban diviners *believe* that powder is power, but rather [they] *define* it as power” (Holbraad 2011, 13 italics original). This change of putting the things, he argues, raises the metaphysical stakes of ours, as we always assume that “powder is *not* to be defined as power” (ibid, 14, italic original), it is just a thing among others. Hence the challenge is to reconceptualize powder so as powder as power would render itself as reasonable rather than absurd ethnographically (Holbraad 2012). Hence, for Holbraad and editors of *Thinking Through Things* the emancipation of things is to theorizing artefacts ethnographically rather than placing material characteristics at center stage.

Discussion / Conclusion

The ethnographic tradition of anthropology and their focus on human culture in fact remain at the center stage even when anthropologists talk about things, material, or artefacts. In the above works both in anthropology and archaeology, materials (for the sake of simplicity I only use this term now) remained a means to explore the culture. Although recently and especially the works of Tim Ingold suggests engaging with the things ontologically, however he does not provide any significant methodological approaches to do so. He cites, Karren Barad’s “onto-epistemological” or agential realism as promising way to understand the things, but yet question remain, what to do with things in the fieldwork.

Holbraad’s position to think through things and think heuristically of things can be promising method. He himself argues that his approach is “pragmatology” (Holbraad 2011, 21) and suggests “the prospect of pragmatology as a sui generis field of inquiry [...] a thing-centric discipline in which material properties would form the basis of conceptual experimentations that would be unmediated by, and run unchecked from, any human projects whatsoever” (ibid, 22). I see a huge promise in such an approach, but I have my own skepticism. For example, which things should be taken as concepts from the ethnographic setting or data? Only extraordinary things? Then what about the mundane everyday things which too are, or should be present in case of Cuban diviners and performing something along with the powder? Also, Holbraad argues that his approach is not analytical, but I think the very moment when ethnographer starts to think of thing as concept, he is applying an analytical framework to it. Things are no more things, but concepts. Concept of whom? For Ethnographers? For what? To analysis how things are perturbing our concept of it? isn’t then an analysis going on already through thing? Surely, Cuban divinatory would never conceptualize the powder as a concept. And there is danger in such an approach as it even heuristically is taking the thing outside the ethnographic setting.

Tim Ingold’s approach of thinking human and nonhuman entanglement as “meshwork” (Ingold 2012) is much promising. As it does not separate ordinary from extraordinary things, rather allow them to emerge in an entanglement with other things, and beings. Moreover, as Ingold’s approach

suggests so as what Barad argues that things does not operate outside the relations with other things, or beings her “onto-epistemological” ontology, engaging with materials as they emerge in an entanglement has potentially to give it what Holbraad called “ontological determination” to materials (Holbraad 2011, 11). But yet the question remains, how to explore things methodologically. One way could be learning from the natural scientists that how do they explore the materials. During my Fluvial Geomorphology course, I learned how fluvial – water flow regime and geomorphological – sediment regime interacts and influence each other in producing and shaping the river channel.

In fact, recently, scholars have argued to use the natural science methods to understand the material world. For example, Ballesterio (n.d.) uses hydrogeology to understand how aquifers work beneath the earth that is like a kitchen sponge. Water moves in pours with gravity from one aquifer to another. However multinational extractive companies use the dominant understanding of aquifers as water contained between the rocks and mud like a container. She uses the alternative understanding from geo-hydrogeology of aquifers to put case against multinational cooperation that how water extraction disturbs the water and ecology beneath the earth. Similarly, Anna Tsing (2015) recently in a wonderful ethnography on Mustake Mushrooms uses the landscape and forest ecology to understand how mushroom lives are entangled with pine trees and fungus but also with soil, fire and other human disturbances which destroy the invasive species to allow pine trees to grow, hence the mushroom to grow.

These natural science methods argue Anna Tsing (2019) are not to be engulfed by them, but they should be a means to develop a social theory of material and life as it is entangled with other life processes.

Bibliography

- Alberti, B. (2009). Introduction, Animating Archaeology: Of subjects, objects and alternative ontologies. *Cambridge archaeological journal*, 19(3), 337.
- Alberti, B. (2016). Archaeologies of ontology. *Annual Review of Anthropology*, 45, 163-179.
- Alberti, B., Fowles, S., Holbraad, M., Marshall, Y., & Witmore, C. (2011). "Worlds Otherwise" Archaeology, Anthropology, and Ontological Difference. *Current Anthropology*, 52(6), 896-912.
- Appadurai, A. (1988). *The social life of things: Commodities in cultural perspective*: Cambridge University Press.
- Ballestero, Andera. (n.d.). Spongy aquifers, messy publics. [Public infrastructure/infrastructural publics](https://limn.it/articles/spongy-aquifers-messy-publics/). 7, n.p. <https://limn.it/articles/spongy-aquifers-messy-publics/>.
- Descola, P. (2013). *Beyond nature and culture*. University of Chicago Press.
- Gell, A. (1998). *Art and agency: An anthropological theory*: Clarendon Press.
- Harris, M. (2001 [1979]). *Cultural materialism: The struggle for a science of culture*: AltaMira Press.
- Henare, A., Holbraad, M., & Wastell, S. (2007). *Thinking through things: Theorising artefacts ethnographically*: Routledge.
- Holbraad, M. (2011). Can the thing speak? *Open Anthropology Cooperative Press, Working Papers Series*, 7, 1-26.
- Holbraad, M. (2012). *Truth in motion: The recursive anthropology of Cuban divination*: University of Chicago Press.
- Ingold, T. (2002). *The perception of the environment: Essays on livelihood, dwelling and skill*: Routledge.
- Ingold, T. (2007). Materials against materiality. *Archaeological Dialogues*, 14(1), 1-16.
- Ingold, T. (2012). Toward an ecology of materials. *Annual Review of Anthropology*, 41, 427-442.
- Kohn, E. (2013). *How forests think: Toward an anthropology beyond the human*: Univ of California Press.
- Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*: Oxford university press.
- Malinowski, B. (2014 [1922]). *Argonauts of the western Pacific*: Routledge.
- Miller, D. (2005) ed. *Materiality*: Durham: Duke University Press.
- Mitchell, W. T. (2005). *What do pictures want?: The lives and loves of images*: University of Chicago Press.
- Olsen, B. (2003). Material culture after text: re-memembering things. *Norwegian Archeological Review*, 36(2), 87-104.
- Olsen, B., & Witmore, C. (2015). Archaeology, symmetry and the ontology of things. A response to critics. *Archaeological Dialogues*, 22(2), 187-197.
- Santos-Granero, F. (2009). *The occult life of things: Native Amazonian theories of materiality and personhood*: University of Arizona Press.
- Tilley, C. (2004). *The materiality of stone: Explorations in landscape phenomenology*: Berg publishers.
- Tilley, C., & Cameron-Daum, K. (2017). *Anthropology of Landscape: The Extraordinary in the Ordinary*: UCL Press.

-
- Tsing, A. L. (2015). *The mushroom at the end of the world: On the possibility of life in capitalist ruins*: Princeton: Princeton University Press.
- Tsing, Anna. (2019). A multispecies ontological turn? In Omura, K.I., Otsuki, G., Satsuka, S., & Morita, A. (ed.) *The world multiple: The quotidian politics of knowing and generating entangled worlds*. P. 233-247 New York: Routledge.
- Tucker, Bram. (2013). "Cultural Ecology." In *Theory in Social and Cultural Anthropology: An Encyclopedia*, Vol. 1, edited by R. Jon McGee and Richard L. Warms, 142-147. Thousand Oaks, CA: SAGE.
- Viveiros de Castro, E. (1998). Cosmological deixis and Amerindian perspectivism. *Journal of the Royal Anthropological Institute*, 4(3), 469-488.
- Whatmore, Sarah (2006). Materialist returns: practising cultural geography in and for a more-than-human world. *cultural geographies* 2006 13: 600-609
- Woodward, I. (2007). *Understanding material culture*: Sage Publications.