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# Remember the Future

## Prehistoric Design and Sustainability

### **ABSTRACT**

*The starting point of this study is the prehistoric “teganoschemo” archaeological find of the Syros-Keros civilization in the Aegean Sea. These artifacts have been causing debates among archaeologists as their raison d'être is still contested. The aim of this study is to bring a prehistoric ontological model of design and craft to contemporary design practices. In order to explore such alternative ontologies, we turn to the past and address themes of death and life embodied in these prehistoric artifacts. As we leave Modernity behind and transition towards Sustainment, a new ontology for Design is necessary. By understanding the ontological framework of prehistoric designers, we aim to create propositional artifacts that exemplify what design can be. The propositional artifacts created act as different phases in a research-through design process that aims to investigate how design operates within an alternative system of values.*

### **Keywords:**

Design for sustainability, Research through design, Holistic design; Cycladic teganoschema, Values-based design.

### **INTRODUCTION**

This study undertakes a research-through design project aimed at bringing forward new knowledge in the field of design for sustainability and values-led design. Design for sustainability is closely associated with ideas of transition from the contemporary system of values to a new one, more compatible with the environmental, social and transcendent shifts necessary for a sustainable society. In this study we replicate the ‘Incremental-Holistic’ Research Through Design for Sustainability methodology. In order to better understand alternative systems of values and Subject Object ontologies we use the Cycladic teganoschema, an obscure ritualistic artifact, as inspiration. The main steps of this study are the following: understanding how pre-historic designers embodied their system of values in the material culture they produced, to design a set of artifacts that replicate said values by applying the Incremental-Holistic design methodology, to reflect on the emergent ontologies that these artifacts exist and to speculate ways this design ethos can be expanded turned to a design practice. Both the approach and the subject matter of this study sit in stark comparison with scientific naturalism and goal-oriented

design. This exploration of how values can be tacitly embodied in material form aims to develop praxis and theory in parallel and describe what design for sustainability can be. In addition, this approach and synthesis brings forward emerging knowledge from the fields of cognitive archaeology, relational ontologies, critical design, and crafting embodied knowledge.

In the first section of the paper the methodological framework of incremental-holistic design is presented. In the second section a literature review on the Cycladic teganoschema is presented with the focus on the theories of their use and morphology. In the third section a research-through-design project is presented through different artifacts. In the final sections the authors reflect on the artifacts and the conclusion of this project.

## **RESEARCH THROUGH DESIGN AND SUSTAINABILITY**

Design is a process that brings forward new networks of humans and non-humans, and through this process human intentionality is delegated into material form. By association, this very process also embodies meaning and values in the artifacts created. Values play an important role in shaping design, not as a process per se but in the way that every design decision is grounded in a worldview that is shaped by these value systems (Kiaer 2005).

The modernist system of values has shaped contemporary design and has placed the notions of naturalistic materialism and functionality at the centre of the process. By classifying the material world as the totality of existence, deeper, profound ideas of meaning are cast to the wayside (Eagleton 2009). This study aims to investigate how different systems of values that include inner personal values can be integrated in the design of things. To understand how artifacts can exist in an ontology different from the dualism dominating modern thought, we turn to pre-history to investigate the relationship of the ancient seafaring people of the Syros-Keros civilization with artifacts that seem to lack a 'proper function' (Platinga 1993).

Naturalistic materialism, an ideology that is linked to the physical sciences (Hick 2002), seems to be the only belief system that is compatible with them (Taylor 2007). As an ideology, naturalistic materialism aims to understand the whole of the natural existence through the application of the scientific method and mould it to human needs. It is characterized as interventionist, functionalist, and grounded in instrumental reason (Walker 2011). This ideology posits that the "values-free" physical universe constitutes the totality of existence, and, thus, any metaphysical consideration such as ethics or aesthetics that cannot be addressed by the scientific method does not have any merit (Tillich 1952; Taylor 2007).

Values act as the map to our moral compass, they represent what we consider virtuous or sinful motivations, and they guide our behaviours (Schwartz et al. 2012). Being rooted in our worldview it is possible to disregard facts that are incompatible with them (Tversky and Kahneman 1981). Given that the artifacts created through the design process inevitably embody and reinforce values, the selection of values to be embodied in order "to strategically promote and legitimize in order to accelerate a transition towards human flourishing and sustainability" (Santamaria et al. 2016; Ehrenfeld 2013) is an explicit part of contemporary design.

Humans, however, have been populating the planet and creating civilization before the adoption of science as the basis for everything. The traditional notion of meaning is closely connected to the human condition and it provides an alternative starting point for a new system of values (Walker 2014) necessary to transition towards 'Sustainment' (Fry 2003). In this regard, there are three incontrovertible elements of the human condition: practical, social and personal (or inner) meaning (Walker 2011). Reintegrating spiritual concerns that can be both secular or religious can provide a perspective that is nourishing to inner growth, can enable personal ethics, and finally can address contemporary environmental and social concerns. This process of understanding and incorporating notions that are incompatible with design under naturalistic materialism have in recent years opened up to include traditional approaches such as Kokoro, (Akama 2017) Wabi Sabi, (Tsaknaki & Fernaeus 2015), fetishism (Graeber 2005; Latour 2010), traces (Rosner et al. 2013; Robins 2016; Author 2017),

relational ontologies (Escobar 2018), and many others as craft discourse has started to reconnect with design, bringing the tacit dimension back from its two-century-long exile.

Due to their tacit dimension the exploration of these values and relationships with material artifacts demands to be addressed in a research-through-design (Frayling 1993) approach. Such an approach engages in an open-ended dialogue with the materials (Schon 1992) and explores ways to uncover different ways of knowing (Polanyi 1958). In this context, the aim of this project was first to investigate and understand prehistoric artifacts that embody a system of values completely different from ours. Both authors were living on the island of Syros at the time and the notion that we live in the same place as the makers of the *teganoschema* provided a unique opportunity to juxtapose our lived experience on the island with its first colonisers.

The methodology of this study consists of two discrete steps. Desk research in the archaeological archives was initially undertaken in order to understand the artifacts chosen and the environment that brought them to life. In addition, archaeologists who specialize in the era and the area were interviewed and different theories were discussed. A more designerly aspect of this process was adopted by visiting and drawing these artifacts in local museums as well as a field visit in the archaeological dig where they were found. The second step of the study is based around the application of Walker's Incremental-Holistic design research methodology (Walker 2017). This study combines scholarly work based on a interdisciplinary literature review of design and archaeology with reflective writing that is grounded on autoethnographic practice (Schouwenberg & Kaethler, 2021) as a tool to share personal voices, thoughts and experience emerging around making. Due to these different approaches the tone of the text will shift from the impersonal to personal as we shift from documenting our area of concern to sharing our experience making artifacts that embody the value system and associated ontology that we identified in the *teganoschema*.

## INCREMENTAL-HOLISTIC DESIGN

The methodology adopted aims to move design towards a meaningful material culture and is made up of five steps that seek to understand and illustrate the incremental changes necessary to shift the value system associated with design towards sustainability. This methodology falls within the research through design category as each step brings forward a new propositional artifact (Walker 2013) that embodies a different outlook, deeper values, and creates tangible examples that shift the discourse from the generally abstract to a more specific and focused discourse. This approach is in line with Johan Redström's 'making design theory' (2017) in which he proposes a holistic approach to theory and making focused around experimentation and design practice. In this view theory is not regarded as stable and constant but as something unfolding dialogue with the creative endeavour. The goals, going into this study, were:

- to replicate and validate Stuart Walker's incremental-holistic design method,
- to investigate different layers of design for sustainability
- to create new knowledge about the creation of artifacts under different systems of values,
- to reflect on how these artifacts inform the ontologies of design
- to extract some theoretical conclusions derived through this process.

The study could be considered a 'replication study' in a way, the goal is to use this methodology in a different setting to better understand and evaluate it. The steps of this process are: **Incremental design**, functional designs that employ recycled or reclaimed components in an eco-design manner, creating products that lean on the trite design of functional products. The next step is **Design for inner reflection**, the creation of artifacts that aim to act as reminders of the importance of inner life, artifacts that act as points of focus for contemplative design. This is followed by **Critiques of consumerism**, a process of creating non-functional objects that create narratives that address the problems associated with contemporary values and, by extension, products; this embodied rhetoric aims to create experiences that invite reflection beyond rational argument. The scope of this step is broadened in the next step, **Critiques of the dominant worldview**, where the focus goes beyond consumerism towards understanding how modernity and its systems of values leads to objects that implicitly accept and foster

unsustainable outlooks, values and priorities. The final step of this process, **Holistic Design**, aims to crystallize the lessons of the previous steps to create a design approach that transcends intellectual and conscious knowledge, considering personal, social, practical and environmental considerations, creating a new unity, a novel design ethos and a holistic approach that manages to integrate aspects that are deemed incompatible under the modernist doctrine. The main difference in our application of this methodology is the starting point. We decided to draw inspiration from the past to remember the future, drawing from the artifacts created by prehistoric people living in the region thousands of years ago. The underlying assumption was to try to understand a material culture and object ontology immensely different from ours and to use the underlying system of values as a basis for an incremental-holistic design project. The object that stood out was the teganoschemo.

We look at the Cycladic teganoschema as lessons in material form that were created in an ontology differing from today's dominant one. Each of the five artifacts designed attempts to give a new form to an aspect of the teganoschema that achieves the goals of each step of the methodology. The different artifacts created through this process must be viewed in unison to understand and elaborate the discussion and the shift that this methodology aims to bring about. Each one is a step on a journey that aims to transform design practice into design praxis and, even if they can stand on their own as thought-provoking dialogues in material form (Massumi 1992), we have to take a step back and appreciate the transformation process they aim to foster both in society and the designers undertaking the project. It is a process that aims to use design as a 'redirective practice' (Fry 2007) that aims to reject notions of consumerism, planned obsolescence and embody deeper values in the things that surround us.

## THE CYCLADIC TEGANOSHEMA

'Cyclades' refers to a collection of islands in the southwestern Aegean in the Mediterranean Sea. They are comprised of approximately thirty habitable islands and many desolate islets. The name refers to the morphology of the islands, forming a circle with the sacred island of Delos in the centre. As the sanctuary of Apollo, Delos was one of the holiest places in Ancient Greece. The region was one of the first to be inhabited in Europe with the earliest fragments of civilization belonging to the sixth millennium BC. The inhabitants of the islands cultivated barley and wheat and fished to cover their dietary needs. In addition, they were accomplished craftspeople, using the mineral resources found in the region to create both useful items such as needles and fish hooks as well as artistic sculptures. In the third millennium BC the Syros-Keros civilization emerged in what is called the Early Cycladic Culture II culture (ca. 2700–2400/2300 BC). We have little evidence of beliefs, burial customs and ideas surrounding the afterlife of the Early Bronze Age (3000 – 1200 BCE), so speculations have been formed through the analysis of cemeteries and the structure of the societies of that period. From the uncovered tombs we can see that the dead are leaning on their sides, in the fetal position, with knees bent to the stomach and hands on the face. They were placed in the graves on their right or left (Syros) sides, often with a stone under the head like a cushion, a posture that had to be realized soon after the death occurred, before rigor mortis set in. This suggests that the process of preparation for burial took place shortly after death, indicating that they sometimes used ropes to maintain that position (Doumas 1977).

The objects displayed in the tombs were probably ones the deceased used during his or her life. However, some objects were scarce in the settlements, suggesting that they might have been constructed for purely ceremonial purposes. The 'teganoschema' (shaped like frying pans) are artifacts that were found in graves of the time period, but whose function has not yet been discovered. According to Coleman (1985), they were not inspired by any external influence, but are the result of a gradual evolution of the earliest Aegean civilizations. They have been predominantly uncovered in the Cyclades region of Greece, centred around Syros and Keros, and have also been found on other Aegean islands, coastal areas in Greece and in Asia Minor.

They are reminiscent of the shape of frying pans as they have a rounded shape, with a handle protruding at the bottom, the back side has a smooth surface with a low rim around the edge while the

other side has etched decorations on its surface. They range in diameter from 12cm to 30cm, while their rim edge is a few centimetres high (Papathanassoglou & Georgouli 2009).

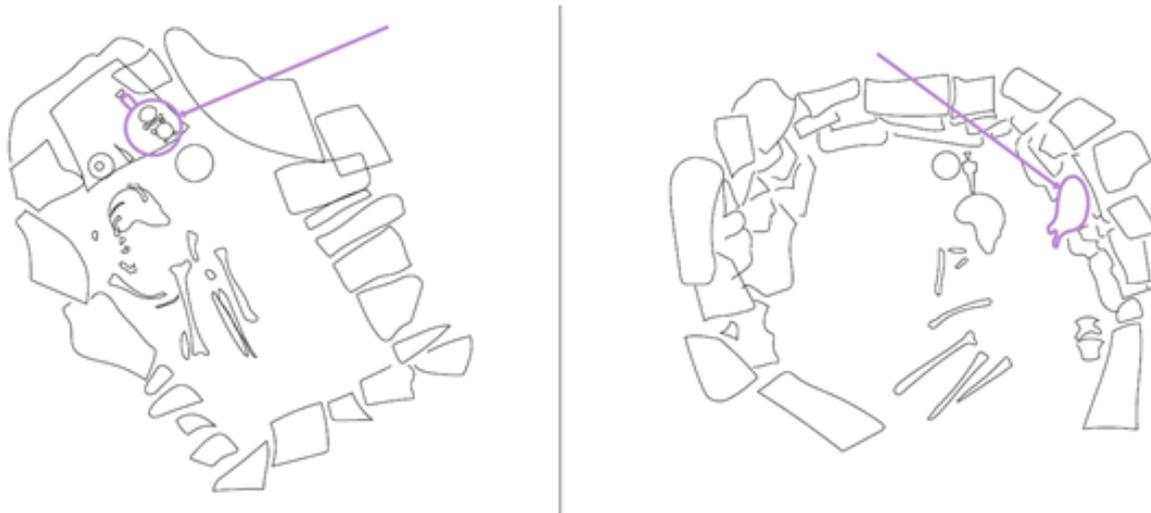


**Figure 1** Teganoschemo uncovered in Chalandriani, exhibited in the Archaeological Museum of Syros. Photo: Spyros Bofylatos

These objects appeared during the transition period from Early Cycladic I to Early Cycladic II (Papathanassoglou & Georgouli 2009) and seem to have disappeared shortly before the end or at the end of the Early Cycladic II (Coleman 1985). Reports of typological differences between individual pieces, the large number uncovered and the time period of their creation, all support the view that they are elements of a strong tradition, passed down from generation to generation. As seen in Table 1, the type of decoration correlates with the type of handle; however, archaeologists are in the dark as to why.

Most of the time, the teganoschema are found in front of the face of the deceased among the bones of his hands or behind his head, or in small crypts (near the head), while some have been found on the floor near the entrance of the tomb, but without knowing the position of the skeleton (more

detailed descriptions of their exact position are absent) (Tsountas 1899). Recent excavations showed the handle leaning on the wall of the tomb, with the decorated side level with the corpse’s eyes (Vlachou & Gadolou 2017). In most cases the teganoschema is close to other offerings in the tomb, such as pots of clay or stone, figurines, tools, weapons, pins and objects associated with the manufacture of dyes. In some cases, the teganoschema contain other utensils such as small marble or ceramic pots. The number of objects found in tombs containing teganoschema supports the view that they are found in graves of people with a particular place in society. At the same time, the placement of other objects in the tombstone of these graves could ultimately be due to spatial facilitation, due to the small size of the tomb (ibid.) or because they were objects that assisted in the execution of the funeral rites so they were all placed together (Drikos 2017).



**Figure 2** Position of the teganoschema in the latest excavation (Vlachou & Gadolou 2017)

Over the last century, large-scale excavation has begun to shed light to the prehistoric civilizations of the Cyclades, and several research groups from different disciplines and fields have tried to solve the riddle of the teganoschema. A diverse set of theories has been created that relates to how they are used, focusing on their practical function and the symbolic value they hold. The importance of these theories is, on the one hand, as scientific evidence generated in the past century to be used to frame and understand the everyday life of our ancestors. Secondly, and perhaps more importantly, in the context of this work, the perspective of functionalism that permeates modernist discourse needs to understand these prehistorical artifacts within the confines of its ontology. Throughout our human history our ontology of objects was very different to what it is today and only arrogance and colonialism of the scientific method would try to discredit such a fact. In the table below the different theories on the uses of the teganoschema are presented.

**TABLE 1:** Theories of use

Suggested use	Author	Counterargument
<i>Liquid Mirror</i>	Tsountas 1899 Nellink 1956	No signs of use (Coleman 1985)
<i>Drum</i>	Varoucha 1925 Mylonas 1959	No damage from repeated blows or redesign for better acoustics (Papathanasoglou & Georgouli 2009)
<i>Salt Puck Maker</i>	Doumas 1993	No evidence of salt water acidification of the clay (Serge et al. 2012)

<i>Ceremonial Platter</i>	Mylonas 1959 Sapouna & Sakelaris 1987	They were put there to save space (Vlachou et al. 2017)
<i>Astrological Compass</i>	Tsikritsis & Moussas 2015	Size makes it impossible to use on board a ship (Papathanasiou & Georgouli 2009)
<i>Fertility Calendar</i>	Tsikritsis & Moussas 2015	People in the bronze age could not have such extensive knowledge of mathematics, biology and planetary movements (Papathanasiou & Georgouli 2009)
<i>Lids for Other Pots</i>	Treuil 1983	No pots matching the teganoschema have been found (Serge et al. 2012)
<i>Incense Burner</i>	Dugas 1925	No evidence of combustion (Serge et al. 2012)
<i>Tsunami Reminder</i>	Rumpel 2010	No tsunami in the region (Serge et al. 2012)

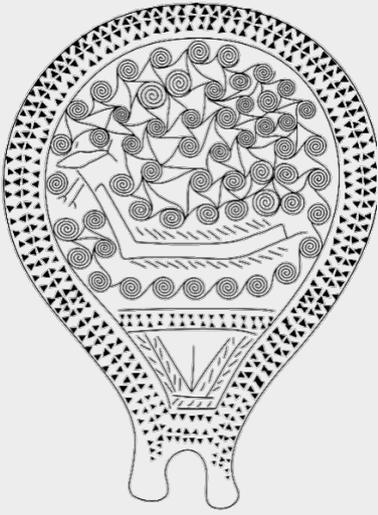
The two most recent interpretations of the use of teganoschema focus on the symbolic significance of the representations and their placement in graves.

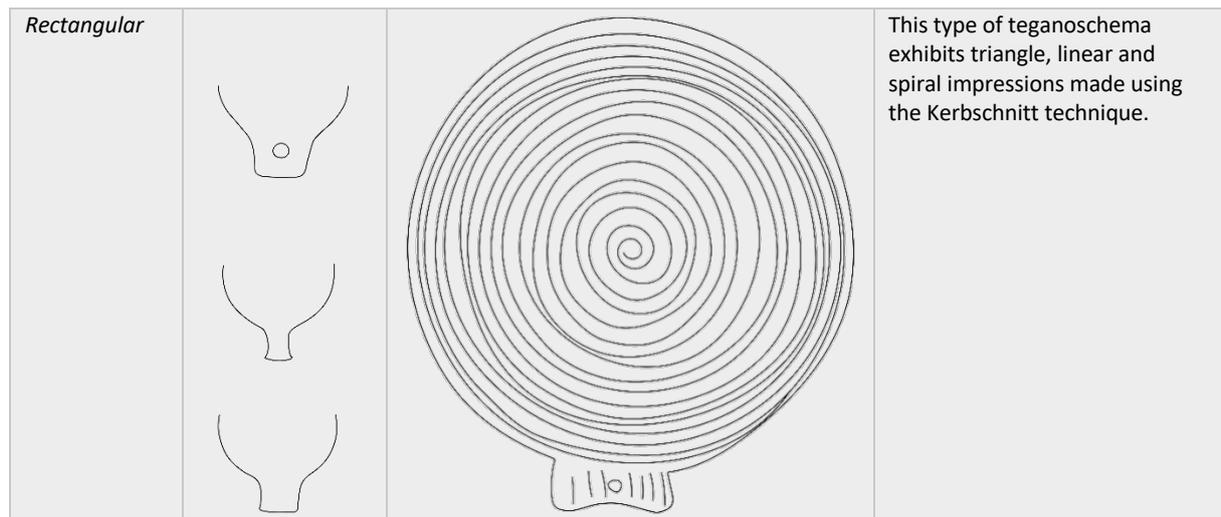
The first theory argues that the teganoschema were chosen to accompany the dead as objects of preservation/protection of their memory, containing their life experiences engraved on their surface to accompany them forever. At the same time, it is argued in the same study that teganoschema with female genitalia symbolize a female deity (perhaps fertility) that protected the person in their lives and would continue to protect them in death. This theory is reinforced by understanding the difficulties that the Cyclades and their natural environment pose, making fertility, including crops and livestock, one of the most important aspects in their survival. The most important feature of contemporary excavations shows that the placement of teganoschema in the tombs was such that the dead would have visual contact with their decorated surface (Vlachou & Gadolou 2017). This also indicates that their decorated surface was extremely symbolic and important and, therefore, understanding the etching might be the key to unlocking the mystery.

The second theory argues that teganoschema are pure ceremonial objects with a highly magical character that protects the spirit of the dead and enables rebirth (Drikos 2017). This theory is supported by several elements: the offerings were close to the head, which may signify an effort to protect the spirit forever; the interpretations of the symbols of the circularity of life and regeneration; and the process of their construction that helps fulfil the ritual processes. We therefore observe in the two most modern interpretations that great attention is paid to the spirit, the intangible dimension of human existence and the connection of "forever". At the same time the focus is shifted from the material form of the teganoschema to the symbolic representations etched on the surface of this magical artifact. One of the characteristic elements of the teganoschema is the geometric motifs and factors of the human environment etched on the front surface. The markings on the teganoschema points to a need to leave a mark on the material world and can be viewed as a precursor to writing. One important thing to note is the correlation between the types of patterns and the type of handle.

Teganoschema that have a forked handle are not exactly circular, but it is as if someone has stretched them away from their handle and they are elongated (more in the shape of a tennis racket). Their decoration displays circular discs that project rays or triangles, which resemble stars. Blank spaces and their outlines are filled with small triangles, generally arranged in identical rows, using the Kerbschnitt impression technique ("tool-removal" stamp). The barred type of handle is a teganoschema that is circular in shape, with a variety of motifs that are rather formal and most of the time it is represented in concentric circles. There is a central pattern that is usually a spiral, with a group of concentric circles or an asteroid shape and groups of spirals.

**TABLE 2:** Correlation between morphology and etching

Handle type			Decorative elements
<i>Forked</i>			<p>Circular discs, projecting rays/triangles                      Small triangles in the empty spaces generally arranged using the Kerbschnitt impression technique.                      Spirals with one or more centres and concentric circles, elements that are sometimes repeated or joined together while at times they are separate.                      A kind of boat with a bow/stern, without sails but with rows of paddles.                      Representations of fish, in side view, on the stern/bow of the boats.                      An engraved triangle, at the point where the frying pan joins the handle, one vertex pointing towards the handle and one vertical line rising upward, reminiscent of the triangles represented in Cycladic female figurines.</p>
<i>Barred</i>			<p>The decorative motifs here are more strictly arranged than the forked- handled tegeanoschema and are presented in concentric circles while the same techniques are followed.                      More often than not, a central pattern is represented by a spiral, a group of concentric circles or an asteroid shape, and then concentric zones are formed from the centre outwards, usually from unified single or double convolutions, perimeter triangles, lines and circles.</p>



In this section a literature review about the teganoschema was presented, and three aspects of these artifacts emerged as particularly relevant to this study. We attempted to understand these artifacts and provide our interpretation based on a relational ontology with their surroundings. First, the setting in which they are found, with the sea as the most important aspect of the life of the Cycladites, and the circularity of life and death with the sun as life giver. The fact that the Cyclades has been constantly inhabited makes the understanding of the belief and customs of these prehistoric civilizations impossible as their remnants are used by the next civilization to exist in the region. The lack of written records or surviving oral traditions leaves holes that can only be filled with theories. The setting provides two important takeaways: the fact that a material culture different from our own has existed and supported human life; and; how much the assumptions within the perspective of naturalistic materialism can blind us, making it impossible to grasp that a different way of being in the world could exist.

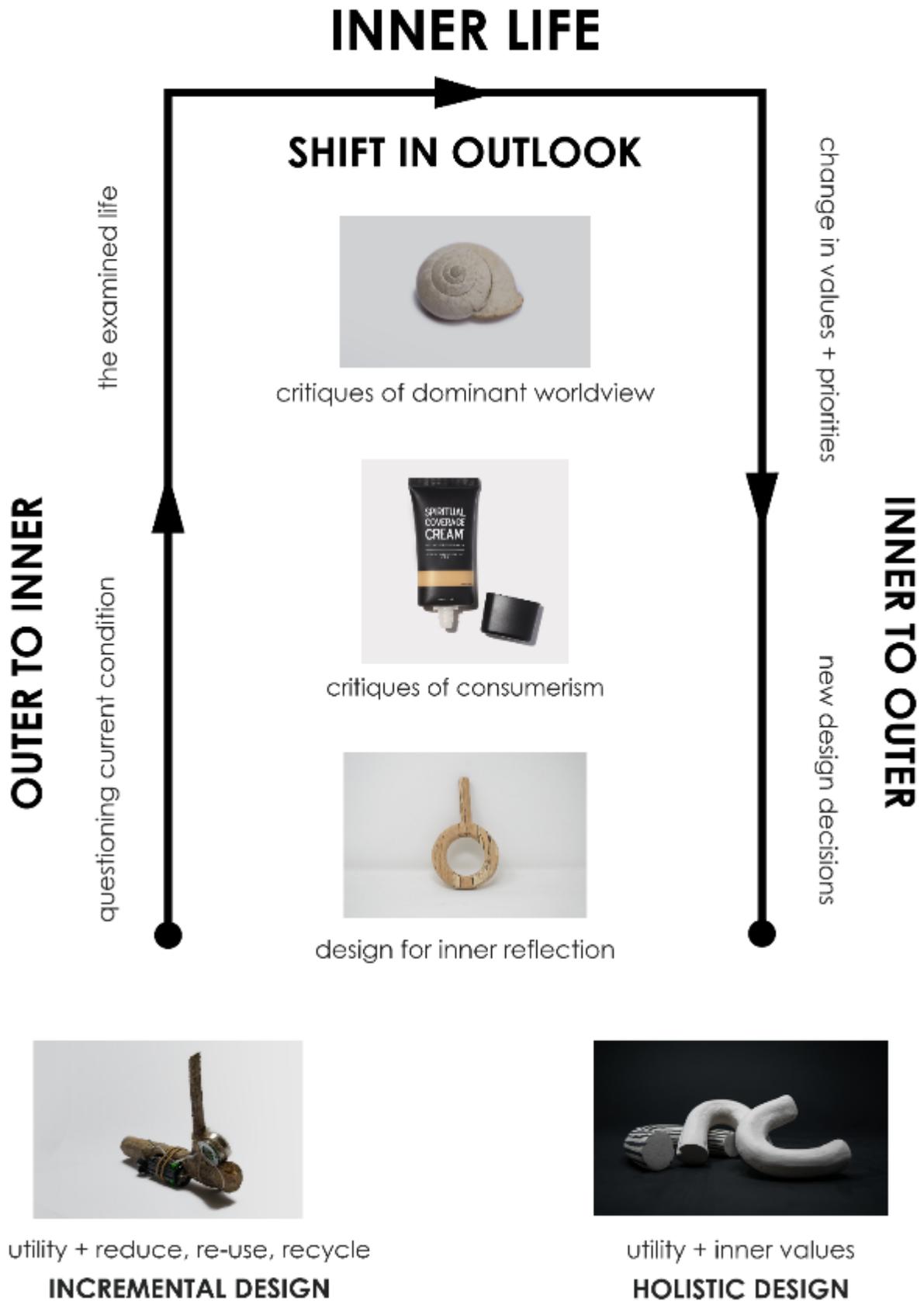
The second point of interest are the artifacts themselves. Contradicting the modernist maxim that “form follows function”, they fall outside the functionalist paradigm of design because they are things that primarily embody personal meaning. Arturo Escobar calls on designers to reverse the devaluing of ‘emotioning’ in relation to reason. This shift is also evident in the field of cognitive archaeology; the proposal of the theory of material engagement by Malafoutis (2016) provides a rationale of the evolution of the theories mentioned in this section. The modern archaeologists created theories to explain these artifacts based on their model of material culture. Contemporary archaeologists have unlearned modernity and so are able to consider different worldviews when interpreting such artifacts. So, the second takeaway is that the epistemological shifts in design are echoed in discrete and multidisciplinary fields such as ethnography, archaeology and sociology.

Finally, the etchings on the surface of the artifact, a representation so sublime that the gaze of the deceased shall look upon it for eternity. This initial attempt at writing and overcoming the limitations of time seem to be the key to understanding these objects and the belief that led to their creation. What did these traces on such an important thing, perhaps the key to an afterlife, mean for these people? The patterns are just as much a part of the artifact as its morphology, especially if we take into account the correlation between the shape of the teganoschemo and its etchings. We will never have a definitive answer to any of these questions, but we can build tools based on the past to better understand the shifts in attitude required in the future. This interplay between the rigid function-based focus of modernity and the relationality of ancient civilizations is for us the main outcome of this study. It has the capacity to act as a critique of the dominant worldview and as a starting point for a creative exploration into how can we design things that exist within relational ontologies today.

## THE PROJECT

In this research through design project five different artifacts were designed. These artifacts have no functional use and act as study tools. For the creation of these propositions in material form we adopted Grimes's notion of Ritual. Ritual is associated with the tacit and the embodied, and ritual is the way that this knowledge is "not transferred by bodies in motion but enacted by people in sensory engagement with one another and with the places that ground these interactions" (Grimes 2012). This ritualistic design aims to allow the thinking body to engage in a trace-making process (Ingold 2013) that engages muscle, bone and sinew in a reflexive process of research differentiated from modernist structures of epistemological power and colonialism. The process followed the five steps proposed by Walker. Each propositional artifact embodies a different idea stemming from the teganoschema. Every artifact was designed in isolation with a different set of goals. It is paramount for this methodology that the discourse shifts from an almost eco-modernist approach to a radical understanding of sustainability as an epochal shift. This is evident by the artifacts created. The further away from the beginning of the process the less functional, in a modernist way, the artifacts are as they become tools of inner reflection and carriers of transient values. As we moved away from modernist ways of functional design, briefs and sketches were abandoned and the process was one of silent contemplation with the material. In this section the artifacts and their connection to the teganoschema are presented, followed by a discussion of the application of the methodology and a reflection on the lessons learned.

Each artifact is presented through a reflection about the tacit design decisions made during the making process. These texts aim to put forward a personal and experiential perspective and discuss how this way of making challenges the traditional way of designing mass produced goods for industry. This shift is mirrored in the type of discourse we see ourselves creating. Science under modernity has been focusing on evidence-based, quantifiable objective views on the phenomena it studies. This has left out areas of concern that are impossible to document through that methodology. As we transition towards more esoteric ways of working to reflect on values, tacit knowledge and making so must we transition the tone and type of scholarship we produce, for the ontologies emerging to make sense a novel epistemology must accompany it and give it meaning in new ways.



**Figure 3** From outer to inner via incremental-holistic design practice, based on Walker 2017, adapted with the author's consent.

## Revived torch



*Figure 4 Revived torch. Photo: Taxiarkis Balaskas*

Born out of a broken flashlight, a branch found on the beach, a reused rubber band, rope and a nail, this artifact aims to cultivate behavioural change that leads to increasing reuse, repair and remodelling approaches to the end of a product's life. At the same time its raw materiality/existence a different relationship of use, transience and scarcity. Acquiring a humble place as an object in everyday life that does not distract us from the important things in life. Raising questions about the nature of today's products, the material world and finally the physical substance of humankind, raising more conscious worldviews. It is a critique on modern throwaway culture and an attempt to elaborate the beauty of remaking something.

Revived torch is connected with the main characteristic of Cycladic frying pans, spiritual and inner regeneration. Through the creation of artifacts that are regenerated from objects that have had their appearance destroyed or will end up in the rubbish tip, the parallels between human and artifact lifecycles becomes apparent. Contemporary objects tend to focus on a concealing finished form that hides the functional parts whilst fostering a "mystification with fancy exteriors and aesthetics". While this symbolic regeneration of "dead" objects creates behaviours that lead to questions about materiality, functionality and ultimately the physical existence of humans.

## Empty insides



*Figure 5 Empty insides. Photo: Taxiarkis Balaskas*

Representing the spiritual death that our society faces, this artifact (a make-up coverage product), aims to start an inner dialogue with humans on how we hide our spiritual emptiness in today's social media-driven society and underline the impact of this lifestyle on our psyche. Through this material representation of spiritual meaning it is easier to conceive aspects of human understanding about existence, the importance of the spirit and its relationship with the material world, and to talk about them or the lack of them.

Using the significant role of the human spirit in the Cycladic age, through the teganoschema, as a starting point, "Empty insides" tries to repurpose this role in today's society. It is not a functional artifact but a provocation in product form. It aims to make us face the emptiness of contemporary life and set us down a path of negotiation of what is good and just. The notion of an afterlife or a judgment at the end is a reason for living a virtuous life. Under modernity and scientific operationalism the only answer to such transcendent questions is nihilism; nothing happens after death and life is a meaningless nihilistic statistical error in the scale of the universe. Traditional notions of life can give meaning to everyday life.

## Taxidi



*Figure 6 taxidi. Photo: Taxiarkis Balaska*

This artifact is a sensory index, it is the shell of a dead snail that has not been technically modified or based on any image. It is just a natural object; it embodies the totality of existence and the continuity of reality. Silent and still, creating space for thought, while the spiral forms a movement inwards causing a symbolic stimulus for inner reflection and spiritual research. Based on the imagination and the deeper aspects of human existence, it creates a common/equal language of understanding between humans and life.

Here the connection with the frying pans is the creation of a common magical/symbolic language in existence. The spiral motif on both the teganoschema and different living organisms poses questions about the shift of our view of nature from mother-fertility goddess to an instrument to achieve our goal, a beast to be tamed to serve humanity's needs. What this artifact is changes as its relations change, for the snail it is home, for us it is a fetish on which we focus our spirit. This non-designed artifact points to relational ontologies and gives us a glimpse of what can be.

## Kyklos toy



*Figure 7 Kyklos. Photo: Taxiarkis Balaskas*

A piece of timber reclaimed from a family tree led to the creation of this artifact which created a unique physical bond between the past, the present and the future. Kyklos is an artifact that aims to be shared among the generations and function as an empty vessel to be filled with values, traditions and stories from the past that will guide us to the present and to the future. Creating a spiritual immortality of values and traditions, the dead and the living, understanding the circularity and the continuity of life, forming new behaviors and worldviews. While the creative process of the making, gave me as a designer the opportunity not only to look inside myself but also to expand my spiritual levels and realize the bigger picture of life itself. But what is it? This is a question every individual needs to try to answer.

Specifically, the Kyklos artifact was created in the very moment of its creation, no plans, no sketches, nothing was predetermined. The piece of wood and its characteristics became the driving force of its form, function and purpose. While in the whole process of its creation, human energy was consumed, repeated movements and silence, in which sensate ideas and inner reflection bloomed. Inspired by the Cycladic frying pans, Kyklos is an artifact that can contain inner-intangible meanings though the passing of time. As we move further down the steps of the methodology the maker-object relationship becomes deeper and more significant.

## Tria



*Figure 8 Tria. Photo: Taxiarkis Balaskas*

Using a primitive material such as clay, which was used in the past to convey inner meanings (e.g. *teganoschema*), I created three artifacts through an intrinsic ritual, each one completing the other to recite a personal journey within a more meaningful worldview, bridging the past and the future, existence and nonexistence. These artifacts embody the need to adopt/search/redistribute a new dimension to understand the material world today, in which the inner and spiritual integrity of existence is important. Through their ritual of creation, their form and function, Tria artifacts refers to the important role of “magic” in our material culture in order to understand/nourish these inner meanings and adopt new ways of living. Physically representing the intrinsic bending to the inside, while symbolically reminding of the search for the important things of human existence and our inner selves. Raising humans that are looking for spirituality and “magic” in their everyday life to complete their existence, creating and preserving a new spiritual heritage through today's magical/symbolic comprehensions.

Through the creative process, no sketches or plans were created. Every decision was made for a deeper reason, nothing happened for the sake of appearance/beauty. Each one of these three artifacts represents a physical form of an inner state into the journey of existence, containing a piece of magic. Each arc is symbolic of the bending of the designer, a bending caused by this very project. The etchings of the clay are a narrative trace of the story of the designer maker and his journey, the shape is a reference to the morphology of the *teganoschema* but, just like our narrative unity, it is broken down and the clay bars have been bent much like the ethos of design under modernity's rule. These simple arcs of clay embody a deep mystical meaning and are the means, the ends, and the evidence of a journey that goes beyond the action of designing.

Specifically, the creation of these artifacts began through the silence of the clay, in which I had the chance to hear my unconsciousness and try to shape it with my own hands. Three shapes came out of me, the first represents the attempts to understand spirituality, the second represents the difficult and painful search for it inside me, creating an inner tearing, and the third represents my spiritual-inner healing and the adoption of a new worldview of existence, reflected by the small holes. Through this creative process of existence and nonexistence, the material, the touch, the shape, the paint and the

thought gave a new “magical” dimension to these artifacts. The Tria collection attempts to adopt what frying pans were about, the role of spirituality into eternity and the important role of transcendent objects that convey meanings.

## DISCUSSION



*Figure 9 All the propositional artifacts together. Photo: Taxiarkis Balaskas*

Through the overall process of designing the artifacts presented, it is understood that design, based on the model of holistic (inner) design, becomes a personal issue of the designer and, if it is undertaken successfully, leads to a shift from design practice to design praxis. In this context it is necessary to initially understand and experience the rich picture of existence and non-existence on a personal level, in order to be able to perceive how design can be used to point out a different way of understanding materiality and other values today. To redefine the current design methods and values systems strengthens the skill of the designer undertaking this process and at the same time has the capacity to help sustainability emerge.

Contemporary design's perspective is dictated by the necessity to be replicated and to have its impacts quantified. In the case of critical or esoteric design this is impossible. In the context of this study, unpacking the conclusions of the tacit dimension of the new knowledge is impossible at times. By understanding these deeper notions of the past in an iterative and gradual way like that put forward by the methodology of holistic design we find out how these 'raw' notions can be perceived and how they can be reflected onto our cultural background. This process introduces new inspiration and perspective in contemporary designing practice. It is holistic because the artifacts produced do not stand alone, they have to be seen as one to understand the gradual shift from modernist values to sustainable values. The holism in this approach does not end with the artifacts, the personal journey, thoughts and changes the designer goes through when working with such projects are an intertwined part of the project.

All of the propositional artifacts created through this study share the connection with the *teganoschema*, as explored in the presentation of each of them. However, the influence is rooted in a different facet of the *teganoschema* for each propositional artifact. It can be based on the morphology,

the use, the etchings, or the deeper, magical meaning and the notions of the afterlife associated with it. The depth and the complexity of these connections increase as we move towards the holistic design process. Specifically, the “revived torch” attempts to bring the notions of life and death into product lifecycle but the understanding is skin deep. There is no morphological connection to the teganoschema and it can be categorized as an eco-modernist product. The second propositional artifact, “empty insides”, critiques the dominant worldview and the lack of spirituality. Again, it is informed by the perspective of the teganoschema but does not manage to draw a clear connection. The third artifact, “taxidi” is not designed and as such fails to integrate the ritual of making in itself but manages to combine the morphology of the circle, the spiral etching and the deeper inner meaning of the teganoschema. It acts as a signpost in the process of the shift from the incremental to the holistic; one cannot be sure where each of the influences begins or ends but they are present. The fourth artifact, “Kyklos” brings the ritual of making in the fore. It employs a very similar morphology to the teganoschema and the narrative behind the acquisition of the material provides a necessary human touch. The absence of the etching is apparent by the void in the center and is perhaps the missing ingredient in an otherwise successful attempt. The final artifacts, “tria” represent the end of this process. All of the physical and metaphysical aspects of the teganoschema are present in a relational ontology with the designer, they cannot exist without their maker as they are a material proof of the changes a person went through during the process of making them. This ouroboros is impossible to reduce to designerly practice other than the belief that the process can change the way that we look at the creative endeavour and its relation to us. We can share our experience; we can urge our colleagues to engage with this kind of work but the deepest truths are silent and one has to get to them alone.

Coupling the idea of holistic design (Walker 2017) with cultural studies and archaeology and exploring it in a research-through-design approach led to some very interesting lessons throughout the whole process. First, it is necessary for the designer to pay great attention to the material and the history that might be hidden behind it. The links to the past and the intrinsic symbolism of each medium will guide the overall design of the resulting artifact through an open dialogue with the material. Consequently, the ill-informed Cartesian divide between matter and spirit collapsed, laying the ground for a holistic approach, which we attribute to inner reflection the importance of the immaterial and the metaphysical, emphasizing the feeling of connection between oneself and the world. While at the same time, the material combined with a thinking body and the almost performative and ritualistic way that an artifact is created are parts of the real world. This is, in our view, in line with many contemporary thinkers’ views on design for sustainability. As design transitions towards sustainment the fragmentation of the process is healed.

Staying with the changes that the transition away from modernity brings, the theoretical, epistemological and ontological underpinnings of design also change. As materialistic naturalism is left behind new ways of doing research emerge. Research Through Design is such an approach. In order to explore this emerging field, it requires a space for open questions, tacit knowledge and reflection. During this process this divide collapses as we give space for silence and inner reflection, so that inner meanings and spiritual fulfilment are able to take material form and be transformed from their tacit dimension. The physical contact of the designer with the material and the extension of the intangible depiction of deeper inner aspects of life in its material nature are an act of “magic”. It is building a bridge to connect the seen and the unseen, the spiritual and the practical. It becomes clear that decoration, form, texture, tools, manufacturing processes etc. are instruments that can be used by the designer to convey this inner dimension into the artifact, creating a new design language today that is based on the inner and spiritual integration that derives from the cultures of the past.

We set out to explore a new language of design based on remembering the past and understanding that the vantage points we look from today are not the only ones but that many more have existed. This causes a critical change in the perception of reality, ways of developing societies and humans, reshaping systems of existence, which are entirely consistent with sustainability and the shifts necessary for it to emerge. Critical, speculative and associative design (Palpass 2017) are also parts of the emerging pluriverse as design changes to take new ideas into account.

Design is design, and the necessity to characterize it in different sub-fields is an extension of the fragmentation of narrative unity and the specialization of knowledge under Modernity. As we transition towards sustainment, it is not design for sustainability that emerges as a discrete field but a new mixture of values, types of knowledge, methods and goals that evolves through experimentation, introspection and the creative dialogue with social and environmental issues.

Perhaps the most interesting outcome of this process is the change in the frame of the methodology. We chose to use the past as inspiration for contemporary design instead of starting with a blank page. The reasoning behind this was the need to understand our craft in a different context. We were unable to provide or be provided with any concrete explanation of the use or meaning of the teganoschema and their decoration but we began to empathize with the "weird" or magical viewpoints of our long-gone ancestors. This process took us out of our comfort zone and compelled us to a "cognitive bending" that in the end radically changed our outlooks about how and what we design.

This reflection brings forward perhaps the most interesting aspect of the methodology put forward by Stuart Walker's work. By negating the dominant values and worldviews in and by design the very process cannot be put in the rigid box of academic discourse; the results are not quantifiable, measurable and replicable. The process aims to be a personal journal of discovery and the results take forms that are incompatible with contemporary market-driven product design. However, the shifts in perspective necessary for this project ripple out to other design-related projects

## CONCLUSIONS

German sociologist Jürgen Habermas famously wrote that Modernity is dead, but its values and ideology are still dominant. We witnessed this domination in the many different theories of use of teganoschema proposed in the last century. Modern scientists could not consider the possibility of alternative artifact ontologies until recently. Such is the colonialist power of scientific operationalism and fragmented knowledge. Starting from contemporary theories that move beyond such narrow thinking and combining it with novel approaches to design and research we began to remember the future through the past. At the same time, we fell victim to the stubborn tacit dimension of our work since separating the object of research from the researcher is in our case impossible. The closing comment is that to go further down this road we need to create new types of scholarly outputs in order to disseminate the knowledge that emerges in context of research through design in order to navigate these emerging issues and research projects.

## REFERENCES

- Akama, Y. (2017). Kokoro of Design: Embracing heterogeneity in design research. *Design and Culture*, 9(1), 79-85.  
<https://doi.org/10.1080/17547075.2017.1280266>
- Coleman, J. E. (1985). "Frying Pans" of the Early Bronze Age Aegean." *American Journal of Archaeology*: 191-219.  
<https://doi.org/10.2307/504325>
- Doumas, C. (1993). Το πρωτοκυκλαδικό τηγανόσχημο σκεύος. Σκέψεις για μια πιθανή χρήση [The protocycladic teganoschema. Thoughts on a possible use of it] First Cycladic Conference. Etairia Kikladikon, Meleton: 299-318. (in Greek)
- Doumas, C. (1997) "Early bronze age burial habits in the Cyclades (Studies in Mediterranean archaeology)". Paul Åströms förlag
- Drikos, T. (2017) Η σημασία του αρχαιολογικού χώρου Χαλανδριανής-Καστριού [The significance of the Chalandirani- Kastri Archaeological site] Getting to know the 'Apano Meria'. Syros Greece, 13 May
- Dugas, C. 1925. *La Céramique des Cyclades*. [The ceramics of the Cyclades] De Boccard : Paris. (in French)

- Eagleton, T. (2009). Reason, Faith, and Revolution: Reflections on the God Debate. Yale University Press.
- Ehrenfeld, J. R., & Hoffman, J.A. (2013). Flourishing: A frank conversation about sustainability. Stanford University Press.
- Escobar, A. (2018). Designs for the pluriverse: Radical interdependence, autonomy, and the making of worlds. Duke University Press.  
<https://doi.org/10.1215/9780822371816>
- Frayling, C. (1994). Research in Art and Design (Royal College of Art Research Papers, Vol. 1, No. 1, 1993/4).
- Fry, T. (2003) "The dialectic of sustainment." Design Philosophy Papers 1, no. 1(5): 289-297.  
<https://doi.org/10.2752/144871303X13965299302794>
- Fry, T. (2007). "Redirective practice: an elaboration." Design Philosophy Papers, 5(1): 5-20.  
<https://doi.org/10.2752/144871307X13966292017072>
- Graeber, D. (2005). "Fetishism as social creativity: or, Fetishes are gods in the process of construction." Anthropological Theory 5, no. 4: 407-438.  
<https://doi.org/10.1177/1463499605059230>
- Grimes, R. L. (2012). "The Ritualization of Moving and Learning." Time and Mind, 5, no. 1: 85-98.  
<https://doi.org/10.2752/175169712X13182754067467>
- Hick, J. (2002). Science/Religion. Talk given at King Edward VI Camp Hill School, Birmingham, March.
- Ingold, T. (2013). Making: Anthropology, archaeology, art and architecture. Routledge.  
<https://doi.org/10.4324/9780203559055>
- Jodłowski A. (1977). Die Salzgewinnung auf polnischem Boden in vorgeschichtlicher Zeit und im frühen Mittelalter. Jahresschrift für Mitteldeutsche Vorgeschichte [Salt extraction on Polish soil in prehistoric times and in the early Middle Ages.] Annual publication for Middle German prehistory 61: 85-103. (In German)
- Kahneman, D., & Alan B. K. (2006). "Developments in the measurement of subjective well-being." Journal of Economic Perspectives 20, no. 1: 3-24.  
<https://doi.org/10.1257/089533006776526030>
- Kiaer, C. (2005). "Imagine no possessions: the socialist objects of Russian constructivism.". MIT University press
- Latour, B., Smith, B., & Weintraub, B. (2010). On the modern cult of the factish gods . Durham, NC: Duke University Press.
- Malafoutis, L. (2013) How Things Shape the Mind. MIT Press.  
<https://doi.org/10.7551/mitpress/9476.001.0001>
- Malpass, M. (2019). Critical design in context: History, theory, and practice. Bloomsbury Publishing.
- Massumi, B. (1992). A user's guide to capitalism and schizophrenia: Deviations from Deleuze and Guattari. MIT press.
- Papathanassoglou, D., & Georgouli, C. A. (2009). The 'Frying Pans' of The Early Bronze Age Aegean: An Experimental Approach To Their Possible Use As Liquid Mirrors. Archaeometry, 51(4), 658-671.  
<https://doi.org/10.1111/j.1475-4754.2008.00421.x>
- Plantinga, A. (1993). Warrant and Proper Function. Oxford University Press.  
<https://doi.org/10.1093/0195078640.001.0001>
- Polanyi, M. (1958). Personal Knowledge: Towards a Post-Critical Epistemology. Chicago, IL: University of Chicago press.
- Redström, J. (2017). Making Design Theory. MIT Press.

<https://doi.org/10.7551/mitpress/11160.001.0001>

Robbins, H., Giaccardi E., & Karana E. (2016) "Traces as an approach to design for focal things and practices." In Proceedings of the 9th Nordic Conference on Human-Computer Interaction, 19. ACM.

<https://doi.org/10.1145/2971485.2971538>

Rosner, D. K., Miwa I., Kim D., & Koch K. (2013). "Designing with traces." In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, 1649-1658. ACM.

<https://doi.org/10.1145/2470654.2466218>

Rumpel, D., (2010). Aegean Earthquakes, Tsunamis and the Kykladic Cycladic Frying Pans. Anistoriton 12. In Situ 1: 1-11.

Santamaria, L., Escobar-Tello C., & Ross. T. (2016) "Switch the channel: using cultural codes for designing and positioning sustainable products and services for mainstream audiences." Journal of Cleaner Production 123: 16-27.

<https://doi.org/10.1016/j.jclepro.2015.09.130>

Sapouna-Sakellarakis, E. (1987). New evidence from the Early Bronze Age cemetery at Manika, Chalkis, Annual of the British School at Athens, 82, 233.

<https://doi.org/10.1017/S0068245400020463>

Schon, D. A., & Wiggins. G. (1992). "Kinds of seeing and their functions in designing." Design Studies 13, no. 2: 135-156.

[https://doi.org/10.1016/0142-694X\(92\)90268-F](https://doi.org/10.1016/0142-694X(92)90268-F)

Schouwenberg, L., & Kaethler, M. (Eds.). (2021). The auto-ethnographic turn in design. Valiz.

Schwartz, S. H., Ciecuch, J., Vecchione, M., Davidov, E., Fischer, R., Beierlein, C., ... & Konty, M. (2012). Refining the theory of basic individual values. Journal of personality and social psychology, 103(4), 663.

<https://doi.org/10.1037/a0029393>

Serge, C., Vigier E., Weller O., Chaigneau C., Hamon G., & Chloé. M. (2012). "Neolithic flat-based pots from the Carnac Mounds in the light of Cycladic 'frying pans'." Documenta Praehistorica 39: 309-324.

<https://doi.org/10.4312/dp.39.23>

Taylor, C. (2007). A Secular Age. Harvard University Press.

<https://doi.org/10.4159/9780674044289>

Tillich, P. (1952) The Courage to Be. Yale University Press.

Treuil, R. (1983). Le Néolithique et le Bronze Ancien égéens: les problèmes stratigraphiques et chronologiques, les techniques, les hommes.[ The Neolithic and the Ancient Aegean Bronze: stratigraphic and chronological problems, techniques, people] Diffusion de Boccard, (in French).

Tsaknaki, V. & Fernaeus Y. (2016). Expanding on Wabi-Sabi as a design resource in HCI. In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (5970-5983). ACM.

<https://doi.org/10.1145/2858036.2858459>

Tsikritsis, M., X. Moussas, & D. Tsikritsis.(2015). "astronomical and mathematical knowledge and calendars during the early helladic era in aegean" frying pan" vessels." Mediterranean Archaeology & Archaeometry 15, no. 2.

Tsountas, C. (1899). Κυκλαδικά ΙΙ. [Cycladic ΙΙ] Archaeological Gazette 'Athina', 73-134. (in Greek)

Tversky, A., & Kahneman. D. (1981). "The framing of decisions and the psychology of choice." Science 211, no. 4481: 453-458.

<https://doi.org/10.1126/science.7455683>

Varoucha, E. (1925). "Κυκλαδικοί τάφοι της Πάρου." [Cycladic tombs of Paros] Arch. Eph 6: 98-114 (in Greek).

Vlachou, V., & Anastasia G. (2017). *Terpsis : studies in Mediterranean archaeology in honour of Nota Kourou*. Bruxelles: CReA-Patrimoine.

Walker, S. (2011). *The Spirit of Design: objects, environment and meaning*. Earthscan publications.

Walker, S. (2013). "Imagination's Promise: practice-based design research for sustainability" Chapter 28 of *Handbook of Design for Sustainability*, Walker, S. and Giard, J. eds., Berg Publishers, London, pp.446-465.

<https://doi.org/10.5040/9781474294102.ch-028>

Walker, S. (2014). *Designing Sustainability: making radical changes in a material world*. Routledge.

Walker, S. (2017). *Design for Life: creating meaning in a distracted world*. Routledge.

<https://doi.org/10.4324/9781315312538>

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