

The Department of Seaweed

Co-Speculative Design in a Museum Residency

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Examined by Professor of Design Paul Rodgers, Lancaster University and Emeritus Professor of Design John Wood, Goldsmiths University of London, on 10 July 2017 at the Royal College of Art in London.

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Julia Lohmann, 28.05.2017

Date: 28th May 2017

Signature:

ABSTRACT

This practice-led PhD explores ‘how highly specialised and innovative new design practice is made accessible to new audiences in the context of the museum’ (AHRC CDA Award call, RCA, 2010). Innovative new design was further specified as ‘highly academic, speculative, critical and experimental, often dealing with new technologies or ways of working, developing design as an agent of social or cultural change.’

The call challenged designers to ‘articulate their processes and practices in ways that can be understood by, and influence, the general public.’ This PhD consists of a case study in the form of a six-month residency at the Victoria & Albert Museum (V&A) in 2013, entitled ‘The Department of Seaweed’ (DoS), as well as a design theoretical contextualisation of its framework, methods and outcomes.

Among these are insights into how to co-develop design outcomes and knowledge by working with natural resources. This led me to propose a new method for cospeculative design that integrates open ended material exploration and systems level speculation through participatory critical practice in a museum residency. The outlook of design thus shifts from critical speculation towards design for transition, set against the challenges of the 21st century and beyond.

The setting for this thesis is the interrelation of the following three subjects: Methods of Making, Transition Design and Museum Residencies.

I established the DoS as a community of practice (CoP) around the development of seaweed as a material for making. Our approach connected making, practice-based research and generative material development with participatory methods and speculation — exploring perspectives from critical, speculative and transition design — and enabling multiple, interlinked forms of participation through dialogue, speculation, making and reflection, both on design practice and the museum.

The museum, in the context of this PhD, is understood as a public place of sensemaking and knowledge sharing. As a cultural node, both analogue and digitally networked, it enables the community it is embedded within to access its own past. This thesis proposes that by means of resident and mobile CoP, museums also present ideal places for shared knowing, speculation about and actively shaping preferable futures.

I propose using museum residencies as public research and development labs for nonnormative practices, enabling participants to develop a field of visions, identify the inherent potentials of a project and link multiple projects up into an infrastructure by growing a community of practice.

Museum residencies can be ideal settings for practice-led research projects that are informed by — and inform — the museum and its community and can link up individual ideas and concepts into communities of practice intent on collaborating to pursue the next steps. The thesis also outlines how ethical, value-based frameworks may govern co-operation — particularly important relating to the use of natural resources such as seaweed. Suggest a system of departments in flux for integrated practices, that can dock on and off existing institutions.

This PhD is aimed at practitioners who want to engage with a community in a participatory design process or wish to work with natural materials such as seaweed. It is also aimed at theorists engaged or interested in practice-led design research, participation, generative material innovation, museum residencies, reflexive practice in immersive environments and critical- and transition design.

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1 INTRODUCTION

This practice-led PhD is concerned with speculative design practice for transition in the museum context. It consists of a practice component in the form of a six-month residency undertaken at the Victoria and Albert Museum in 2013, entitled The Department of Seaweed, as well as a design theoretical contextualisation, theoretical framework, methods and outcomes. The setting for this thesis is the interrelation of the following three subjects: Methods of Making, Transition Design and Museum Residencies. More specifically:

- Methods of Making are exemplified in this thesis by the development of seaweed as a material for design and the making of objects from seaweed. The raw material is introduced into material culture.
- Transition Design understands design as a liberal art (Buchanan, 1992) rather than a service to industry. Herbert Simon describes the process of design as »devising courses of action aimed at changing existing situations into preferred ones« (Simon, 1982,129) Transition designers judge which situations are 'preferred' by systemically examining the long term consequences of the action with regard to sustainability: its potential to 'future' or 'defuture' society (Fry, T. 2011). This process includes a system-level examination of both the current state and the proposed change over a long timeframe and the ability to scale the intervention so that it can effect change on a broader level. The designer's role and posture extends from being the author of an object to understanding the systemic implications of his intervention, whilst facilitating a process on a systemic level. Strategies for co-design, participation and community building become important methods for action and reflection in the design process. The interaction and dialogue with participants and users creates feedback loops that inform the designer, enabling reflecting on action. (Schön, 1983)
- Museum Residencies are exemplified by a six-month residency in the Victoria and Albert Museum (V&A) in 2013. I created an immersive, publicly accessible studio in which I engaged in dialogue and collaborated with designers, craftsmen, scientists, secondary school pupils, museum

staff and academics, as well as a wide range of museum visitors to imagine future roles for seaweed and develop methods for its use as a design material. Collaborative design practice and community building require a space for the community to come together. In this thesis I frame the museum as such a space, and test its viability as an infrastructural node for participatory design and speculation. The experiences and insights in the Department of Seaweed were anything but a linear narrative, so to convey the narrative journey faithfully I have written in two voices: That of myself as a designer/researcher and that of the Head of the Department of Seaweed, a character that resides within the Department and reports to us from inside the narrative. Metaphors, storytelling and analogies are key methods of my practice and are employed in this research to relate to and understand abstract concepts. The text is accompanied by a catalogue that depicts the things, environments, processes and interactions in the Department of Seaweed residency (Appendix A).

I see the museum as a possible infrastructural node for critical practice. It is a public space dedicated to keeping and sharing knowledge of our past and present. Visitors of all ages and diverse backgrounds come to be engaged and challenged with experiences that widen their horizon. If these experiences can be extended into speculation, the museum could be the ideal location for co-imagining and reflecting on possible future scenarios.

By running the Department of Seaweed in the residency studio of the V&A, I explore the museum as a space for growing a network and community around a speculative design practice. The engagement in the Department of Seaweed employs more than language, expanding into sensual engagement, intuition and hands-on making and co-creation.

As I bring my practice into the museum I am aware of one possible criticism: Museums are viewed by some commentators and practitioners as unsuitable places for a practice whose agency relies largely on its connection with everyday life. When social architectural practice Assemble won the Turner-Prize in 2015, John Jervis of Icon Magazine commented: »please no 'experimental pavilions' at design fairs, architectural biennials or art galleries — that way lies the path to closeted irrelevance«. I believe what Jervis is concerned about is that design and architecture might become self-referential disciplines, favouring involvement with an expert connoisseur audience of peers over needs-based

practice. Underlying this is the notion that relevance is not inherent in a piece of design or art, but happens in its connections to society and is therefore context-dependent. »Closeted irrelevance«, in Jervis view, ensues when the work is cut off from the stream that creates its meaning (with Assemble this is the place and local community) and becomes static. It appears that Jervis does not think the work of Assemble can have agency in a museum. However, from my perspective, museums are public places dedicated to culture, learning and sharing knowledge. In the museum, digital and analog bodies of knowledge intertwine. Analog spaces like these offer the possibility to share ideas through multi-sensorial engagements developing over time through the involvement of the audience. They can thus function as analog infrastructural nodes for community building, communal making and imagining, which I will outline below.

My motivation for this practice-based PhD is a combination of personal instincts, interests and concerns, as well as professional habits, methods and processes. Both in life, as a citizen, and in my work I constantly question my own assumptions and values and relate them to our society's canon.

Since my early childhood, I have had a strong love of the natural world, of flora and fauna, things animate and inanimate that surround and sustain us. This instilled in me a sense of wonder and urge to explore. However, as a child I also became aware of our destructive impact on the world, most markedly through the Chernobyl nuclear disaster in 1986. This dichotomy of love and destruction of nature has evolved into a critical, differentiated view of our relationship with our planet — or lack thereof — which has in turn informed my practice as a designer. My work is based on four main aspects:

1. an immersive and experiential research process
2. thinking through making (reflection in action)
3. developing materials and crafting things encouraging dialogue and reflection. In the process, I investigate the origins and agency of materials and consider them as I develop projects
4. connecting and reinterpreting the links between different disciplines

Design is a tool for shaping our environment and the world we inhabit,

which in turn shapes us: our aspirations, our dreams, our sense of self, our norms and values (Fry, 2010). My aim is, to address environmental issues, social and design developments I become aware of. I am using the medium of design to expose disparities between the constructed reality — what we think we know, sense and feel — and the value systems we live by. Designers shape signs, materials, objects, concepts, infrastructure and systems (Buchanan, 2001, p. 12) — often mediating and translating between intellect and intuition. Designed outcomes can engage on an intellectual, sensual and spiritual level and thus potentially translate intellectual knowledge into sensual/spiritual experiences and vice versa.

In my practice, I create scenarios through objects, performances and interactive installations. My starting point for a piece is usually a dissonance: an emotional reaction at odds with what I think I know about a given situation. My work process is based on deliberately exposing myself to this dissonance to gain knowledge of a field and analyse my intuitive and intellectual reaction. I determine my own position towards it through making. Then, I either create things that frame the discrepancy of thought or invite an audience to relive and expand the process of discovery via an installation or performance-like experience.

In the process, I actively seek interactions, dialogue and debate with others to gain critical appraisals, feedback and other multimodal information — not based solely on spoken or textual information but also by means of embodied experiences — to help develop concepts, processes and outcomes and resulting in project-based transdisciplinary practitioner networks.

The work undertaken during this practise-based PhD studentship has evolved from my previous work. To make this evolution clear, I introduce eight exemplary projects of previous work in Appendix B. On the following two pages is a pictorial overview of the projects (fig. 1-II). In Chapter 2 I contextualise my practice-led research in the expanded field of design. I am hoping to establish its connections with the fields of Critical Design (CD) and Transition Design (TD), and demonstrate my reasoning behind a shift in focus from the former towards the latter. Chapter 3 elaborates on the conditions for participation in the museum and methods thereof, especially exploring the methods of dialogue and making. Chapter 4 is a description of the Department of Seaweed residency in the V&A in 2013 (see: Appendix A), introducing the individuals

involved, our experiences during and outcomes of the residency. In Chapter 5 I discuss the learnings of my residency and formulate key aspects of a new co-speculative method of design. Chapter 6 provides an outlook on the next ventures of the Department of Seaweed and suggests further fields of enquiry arising from this thesis.

2 CRITICAL PRACTICE AND TRANSITION DESIGN

In this chapter I am aiming to contextualise my pre-PhD practice within the expanded field of design, more specifically within its subfield of Critical Practice (CP). It includes, according to a categorisation by design researcher Matt Malpass (Malpass, 2015), the areas of Critical Design (CD), Speculative Design (SD), Associative Design (AD), Co-design (CoD) and Transition Design (TD). I will demonstrate how my work relates most closely to CD and TD and outline how and why I am shifting its focus towards TD — especially since I began exploring seaweed as a material for design.

2.1 CRITICAL PRACTICE IN AN EXPANDING FIELD

Before this PhD thesis and the Department of Seaweed (DoS) residence at the V&A, which I will discuss in detail in the following chapters, my work could best be described as CD concerned with the values and ethics of material culture. This differentiates it from traditional product and industrial design, in every aspect from its aims, concepts, processes and outcomes. I see myself as a designer and citizen actively seeking alternatives to design practice in the service of industry and commerce. Instead, I am focusing on developing more considered, critical and sustainable approaches towards design in the service of society, aiming to lessen the impact we have on our biosphere.

In 1988, John Thackara highlighted the need for such a shift when he stated that »because product design is thoroughly integrated into capitalist production, it is bereft of an independent critical tradition on which to base an alternative.« (Thackara, 1988, p. 23). He described the nature of ‘mainstream’, ‘orthodox’ or ‘affirmative’ industrial design (Malpass, 2017, p. 8) in which »the market provides strong incentives for designers to participate in economic systems that are arguably beyond an individual’s ability to confront.« (ibid.)

Thackera’s criticism was echoed by the designers and theorists Anthony Dunne and Fiona Raby: »all other possibilities for design were soon viewed as economically unviable and therefore irrelevant.« (Dunne, Raby 2013, p. 8) Their statement reflects a scepticism of the

paradigm of design in the service of industry, with its vertical hierarchies, top-down decision-making and rigid processes, all based on a neo-liberal growth economy, industrial production processes and an all-pervasive consumer society emerging in the 1980s.

Since Thackara's and Dunne and Raby's statements, a multitude of methods, theories and approaches for critical practice beyond mainstream design have arisen, constituting a post-industrial, expanded, or rather ever-expanding field of design. There is speculative design, critical design, design fiction, design activism, socially responsible design, co-design, participatory design, meta design, transition design, transformation design, conceptual design, post industrial design, social design, open design, design as politics, sustainable design (Malpass, 2017 p. 9) to name but a few. All of these approaches provide opportunities for considered critique, challenge aspects of the hegemony of mainstream design and expand in whose name, based on whose interests and with which methods we shape the world through design. Practitioners aim to reframe design as an 'emancipatory social science', described by Erik Olin Wright (2010) as:

»A theory of a journey from the present to a possible future: the diagnosis and critique of society tells us why we want to leave the world in which we live; the theory of alternatives tells us where we want to go; and the theory of transformation tells us how to get from here to there — how to make viable alternatives achievable.« (p. 25–26)

Design in the 21st century is not only framed in relation to humanities, art and science (Simon, 1969) but also as politics (Fry, 2010), 'as discussion and argumentation' (Dubberly, Pangaro, 2015) or as 'a branch of rhetoric'. (Buchanan, 1985). In a 'semantic turn', as described by Klaus Krippendorff (2006), design is now not only concerned with the creation of products and their aesthetic aspects, but also with how the things created affect people's lives. Design in the expanded field is based on the understanding that we have entered the anthropocene, an age where human activity is the dominating influence on our biosphere and climate. With this comes the responsibility to envision and work towards a sustainable co-existence with the planet that sustains us. Today, in this diverse field of practice there are designers who work in service to society and government as well as industry.

Designers engage in speculative visioning to create discourse, dialogue, activism and engagement with future scenarios.

Designers operating in the expanded field are helping people deal with change, as described by MoMA curator Paola Antonelli (2008): »Designers have the ability to grasp momentous changes in technology, science, and social mores and to convert them into objects and ideas that people can understand and use.« (p. 14) Designers undertake research with specific design methods, raising possibilities and questions as well as supplying answers. They are viewing design as an ongoing method of enquiry, shifting their focus from project to process, to the design of design itself and all the processes it encompasses, also described as Meta Design (MD) (Wood, 2008 p. 4). And since design is always embedded in society, it is a potential political force with the means to 'redesign' how we view ourselves. Designers can help to shift people's self-image from the passivity of being 'users', 'end users', 'consumer citizens' or 'empowered consumers' in a neo-liberal society, to being 'activist citizens'. This helps address a fundamental dilemma we are facing today, put succinctly by John Wood (2007, Chapter 2): »If I wish to be a good citizen it is not clear whether I should work to sustain the economy or whether I should work to sustain the eco-system.«

Design processes in the expanded field are often not geared towards the industrial production of an object. Consequently, designers are neither bound to, nor supported by the frameworks established for industrial design. Aided by the possibilities of the information age, they develop their own frameworks and infrastructures, from communication, learning and knowledge sharing, via networking, prototyping and manufacturing processes to the sale and distribution of work. Crowdfunding, fab labs and maker collectives are just some examples of infrastructural nodes offering alternatives to the orthodox industrial design framework. In terms of process, 'Infrastructuring' (Karasti, 2014) today is based both on 'bits and atoms', i.e. it can draw on analog means and methods from its industrial past, as well as from the digital realm of open source design, networks and processes, as described by Jamer Hunt in his Manifesto for Post-industrial Design (2005). To be 'agents of change' it seems that designers are becoming 'social and ecological entrepreneurs' (Wood, 2008, p. 3). They are building communities and engage them in participatory processes to sensitise people towards issues — for instance peak oil and resilience, as done by the Transition

Town movement (Hopkins, 2008). The aim is to initiate change from a local grassroots level up and integrate it into top-down developments, thus influencing policy.

Designers are expressing and presenting their concepts in a variety of ways, through fab labs, co-working spaces and community initiatives, social media and practice-based campaigning, literature, museums, galleries, research departments, as well as in academia.

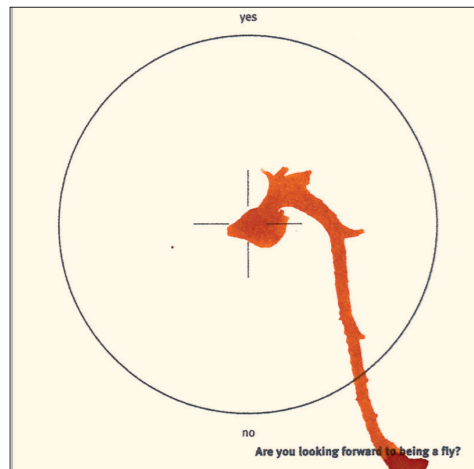


fig. 1: *Maggot questionnaire*, East Room, Tate Modern 2001



fig. 2: *Maggot answering*, East Room, Tate Modern, 2001



fig. 3: *Flock light installation*



fig. 4: *Ruminant Bloom lamp*



fig. 5: *Herd of Cowbenches*: Eileen, Belinda, Carla, Else, Radia



fig. 6: *Alien Archaeology Artefacts*, plaster casts of found object assemblages



fig. 7: *Cast of the Lasting Void*, 2007



fig. 8: *Lasting Void*, 2008

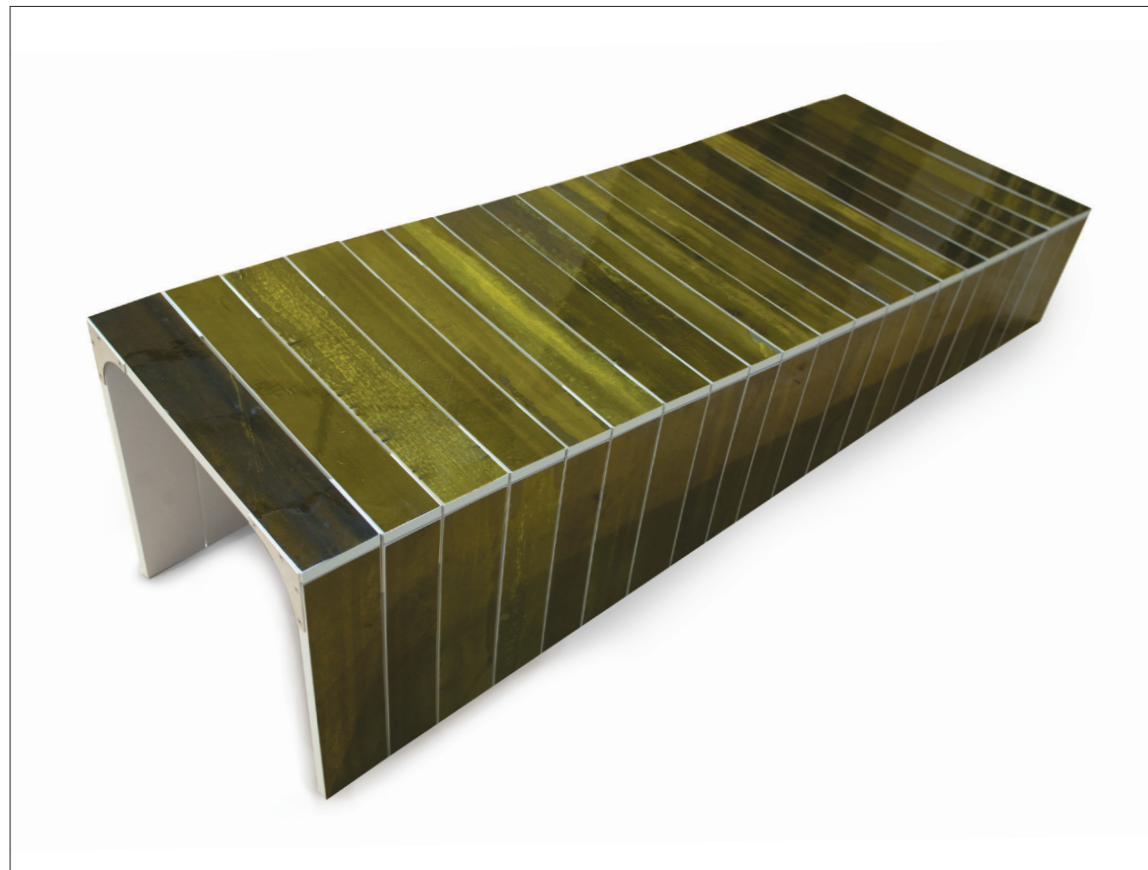


fig. 9: *Laminarium Bench*, 2010



fig. 10: *Panta Rei Exhibition*, 2008



fig. 11: *Design Lab*, Vienna Design Week, 2012

2.2 CRITIQUE OR CHANGE?

The fields of Critical Design (CD) and Transition Design (TD) are the two areas of Critical Practice (TP) within the expanded field of design that most closely relate to my work. Both are reflective, critical towards some aspects of orthodox industrial design and employ speculation — the envisioning of possible futures — as a key design method.

They differ in aspects ranging from the designer's intent for making the work to their posture, tone of voice and communication methods, in particular those relating to the link between speculative practice and the museum, which is an integral part of this thesis.

2.2.1 CRITICAL DESIGN (CD)

Critical Design (CD) is »critical thought translated into materiality« (Dunne, Raby, 2013, p. 35). It is a »medium to engage user audiences and provoke debate« (Malpass, 2017, p. 41) by combining scientific, cultural, ethical, social and technological aspects of reality and articulating them through the language of design. The intention is to enable reflection about our current world views, values, technological and scientific advances, societal and economic models by means of »proposition, exaggeration, and presentation of alternative visions of reality« (Malpass, 2017, p. 61) Numerous actors are engaged in this field, however the most prominent or rather most widely-published are the designers Dunne and Raby, quoted above, who coined the term and have used it since 1997 — Anthony Dunne as a PhD student, both designers in their design research and practice as well as through their tenure as tutors and professors in the Design Interaction Department of the Royal College of Art (RCA) until 2015. Since 2013, Dunne and Raby (DnR) have employed the term Speculative Design (SD) to describe their practice, coinciding with the publication of their book 'Speculative Everything — Design, Fiction, and Social Dreaming' (2013). For the purpose of locating my pre-PhD practice, I will use DnR's Critical Design (CD) practice as a point of reference. I share DnR's aim to create a form of design practice that acts as a counterpoint to conventional design. DnR and I view the latter as mostly affirmative, problem-solving and giving form to technological innovation with too little questioning of its impact on society or critically investigating its possible negative effects. DnR state

that »One of the main aims of critical design is to expand design's potential beyond narrow commercial concerns — to decouple it from industry and explore how it can be put to other uses« states Dunne in *Material Beliefs*, (2009, interview, p. 64). To illustrate this and help define and differentiate it from other design fields and in particular the traditional notion of design in the service of industry, Dunne and Raby have created the 'A/B diagram':

(a)	(b)
affirmative	critical
problem solving	problem finding
design as process	design as medium
provides answers	asks questions
in the service of industry	in the service of society
for how the world is	for how the world could be
science fiction	social fiction
futures	parallel worlds
fictional functions	functional fictions
change the world to suit us	change us to suit the world
narratives of production	narratives of consumption
anti-art	applied art
research for design	research through design
applications	implications
design for production	design for debate
fun	satire
concept design	conceptual design
consumer	citizen
user	person
training	education
makes us buy	makes us think
innovation	provocation
ergonomics	rhetoric

fig. 12: *A/B diagram* Dunne, A., Raby, F. (2013, vii preface)

In Dunne and Raby's diagram, consisting of two juxtaposed lists of adjectives and short descriptive terms, A stands for traditional concepts of design, whilst B represents Critical Design. Column A features words relating to our current capitalist society, ideas of production and function, industry, enterprise and consumerism. Design in this column is described as affirmative of the status quo. Challenging this, the wording of column B is centred around critique and speculation, society, the world and ethics. However, the terms in list B were never intended as opposites to those in A but as an extension of the scope of traditional design by means of CD. (Dunne, Raby, 2013, vi preface)

The A/B diagram is, however, often interpreted as one of opposites, for instance by Bardzell & Bardzell (2015). They criticise CD, represented by list B, as having strong value judgements attached to it and as being

»more vague and political than professionally useful« (p. 3299). They claim that, in Dunne and Raby's description

»affirmative design is the common practice, and this practice is amoral and ultimately a dupe for capitalist ideology, while critical designers are described as moral agents who seek to change society for the better. Since affirmative design is a pejorative, and critical design is an honorific, the question of who gets to decide whether a design is affirmative or critical is key.« (ibid.)

At the same time Bardzell & Bardzell (2015) acknowledge the strength of critical design as being »a design research practice that foregrounds the ethical positioning of designers« (p. 3300) and as being:

»suspicious of the potential for hidden ideologies that can harm the public; it optimistically seeks out, tries out, and disseminates new design values; it seeks to cultivate critical awareness in designers and consumers alike in, by means of, and through designs; it views this activity as democratically participatory.« (ibid.)

I agree that DnR's categorisation is value-based. However, we need precisely this discussion about which values should drive design to shift its focus from being a largely consumer culture practice to being an activist citizen endeavour towards preferable futures.

In my practice prior to this thesis, I have also focussed on critique similar to DnR, aiming to create things that encourage reflection and debate about how we design and produce, how we use natural materials. My intention was to highlight the responsibility of designers and consumers alike to critically consider the value systems applied to products and materials, as well as their ethical implications. Examples of this type of CD work are described in more detail in Appendix B: the Ruminant Blooms (fig. 5) and Flock (fig. 4) as well as the Cowbenches (fig. 7). In the former I employed undervalued animal-based materials whilst with the latter creating a traditional furniture object that highlights its animal origins through its non-traditional use of materials and appearance.

In making an alternative reality accessible and believable my objects are similar to DnR's 'props', objects they employ to facilitate imagining and to »expand our imaginative horizons and provide new

perspectives.« (2013, p. 92) DnR state that: »Speculative design props function as physical synecdoches, parts representing wholes designed to prompt speculation in the viewer about the world these objects belong to.« (ibid. p. 92)

However, my work also differs in some aspects. DnR's props are created towards the completion of a project, based on a complete scenario authored by the designers. In contrast, my objects are created in an iterative process leading from immersion in an experience of dissonance — a situation I find myself at odds with culturally, ethically or environmentally — via material-based experimentation towards objects intended to communicate as a form of tangible language. Through them, I often retrace my own process of discovery for the viewer. Whereas DnR's props are largely shown in a traditional curated display format, my objects are intended to be 'begreifbar', the German word for comprehension, literally translated as graspable and used for understanding both in an intellectual and manual-physical sense. In my view, aiming for a multi-sensory interaction with things is critical because it opens up a wider range of access points to a subject than textual and visual information or objects without the opportunity of physical audience interaction. Dunne and Raby themselves state that »This approach requires viewers to creatively engage with the props and make them their own.« (ibid. p. 92) If this creative engagement of the viewer is merely cerebral rather than physical, it is limited to being a thought exercise, rather than being experienced with all senses.

I do not aim to employ the things I create as unidirectional object-based communication, directed from myself at an audience. For me, the interactions with people act as an important feedback loop, enabling me to reflect on and further develop the themes, methods and processes underpinning my practice. The feedback of this type I have gained regarding the Ruminant Blooms (fig. 5) and Cowbenches (fig. 7) (see also Appendix B) enabled me to investigate in more depth the ethical-emotional dimensions of industrial livestock production, leading to the Lasting Void (fig. 16).

Another aspect my practice shares with the CD of DnR is enactment and role-play and the adoption of diverse roles, or positions throughout the design process. How Dunne and Raby employ this is best illustrated by one of their recent projects, the 'United Micro Kingdoms (UmK)', which DnR (2013b) describe as follows:

The United Micro Kingdoms (UmK) is divided into four super-shires inhabited by Digitalians, Bioliberals, Anarcho-evolutionists and Communo-nuclearists. Each county is an experimental zone, free to develop its own form of governance, economy and lifestyle. These include neo-liberalism and digital technology, social democracy and biotechnology, anarchy and self-experimentation and communism and nuclear energy. The UmK is a deregulated laboratory for competing social, ideological, technological and economic models. DnR (2013b)

As part of developing their UmK super-shires, DnR play a number of distinctly different roles throughout the project: Firstly, they act as world builders creating a fictitious scenario in a process similar to Science Fiction scriptwriting. Quoting Sci-fi writer Bruce Sterling they say they are »telling worlds, not stories«. (2015, MIT interview video, min. 5:52), or, as the science fiction writer Frederik Pohl described it: »A good science fiction story should be able to predict not the automobile but the traffic jam« (n.d.)

DnR's plausible fiction is founded in their immersive research into emerging technologies and scientific possibilities. In their second role, DnR act within the theoretical context they imagined, as industrial designers, in service to their scenario's clients and stakeholders, whose mindset and life-realities they strive to understand. Their aim is to create the objects and services their clients need and desire. Through this they try to position themselves in relation to their own concept and thus sharpen their vision. Raby describes the process as a type of role-playing: »And probably unlike other designers we have to role-play: We don't like the digitalians and we don't like their aesthetic, but we had to imagine what kind of cars they would like instead of design for our own taste.« (DnR, 2013) This makes both sides of the equation malleable: The fictive client in his life world and the product shape one another. By entering and iteratively evolving the narrative of the fiction, one fiction might branch into multiple possible scenarios worth articulating, as in the various speculations of UMK »Design speculations can give form to the multiverse of worlds our world could be.« (ibid.) DnR also commission other designers, model-makers, writers and illustrators to reflect on the needs of their clients or articulate and build their design solutions. The resulting objects are artefacts conceptually formed

within the designed fiction and physically prototyped in the now.

»For us, a key feature is how well it simultaneously sits in this world, the here-and-now, while belonging to another yet-to-exist one. It proposes an alternative that through its lack of fit with this world offers a critique by asking, 'why not?' If it sits too comfortably in one or the other it fails. That is why for us, critical designs need to be made physical. Their physical presence can locate them in our world whereas their meaning, embodied values, beliefs, ethics, dreams, hopes, and fears belong somewhere else. This is where the critique of critical design should focus, on crafting its coexistence in the here-and-now and yet-to-exist.« (DnR, 2013 p. 43, 44)

The materiality of the prototypes does not influence the narrative of the fiction but actualises it in the present. The innovation lies not in the materials used or processes of creation, not in any form of the physical design process, but within the conceptual process of ideation. As stated above, this is where my materials- and craft-based practice differs. The materials I engage with are simultaneously my method of inquiry and my subject of inquiry. The inquiry is not conceived before, but through working with the materials, becoming articulated through iterative cycles of making, reflection and sharing. The thought processes triggered inform the making and vice versa. I will discuss this iterative cycle further in Chapter 4.

In a third role DnR act as curators to make the project accessible to a public through exhibitions, lectures or films. They look at their own first-role intentions and their second-role output and judge which kind of contextual information is required to draw a viewer into the vision and to enable him to make sense of what he sees. It could therefore be argued that DnR act as authors in all three phases of the design process.

However, in other ways DnR's works are developing in a fluid, not pre-constructed process because DnR's mindset and frame of engagement changes with each role: In role 1 as observers and researchers, in role 2 as designers serving their fictional clients, adopting their values and culture, and in role 3 as analytic curators, to enable them to reflect on, edit, present and communicate what they have created.

I would argue that the main difference between DnR's role play

and mine is — as in the Maggotypes (fig. 1, 2) and Alien Archaeology (fig. 15) projects — that whilst DnR roleplay within a theoretical fiction and afterwards design and commission objects and enactments as illustrations and for communication, I am aiming to let my audiences co-develop narratives and scenarios as I enact them.

Dunne and Raby also seek a systemic, fourth-order design understanding of the fictional future. Within this, they advocate the power of ambiguity, and as authors, not 'filling in all the blanks' to help trigger people's imagination. They state that:

»Creating ambiguity and openness was the real key for this part of the project and how to create tools of surprise to trigger other people's imaginations and to get them to think differently outside the usual frame-works. To trigger natural curiosity.« (2016)

The ambiguity that both DnR and I value in our design processes is viewed more critically in the context of academic research. Reviewing DnR's book 'Speculative Everything', Cameron Tonkinwise, director of Design Studies at the School of Design at Carnegie Mellon University writes that DnR's language is imprecise, for instance their frequent use of the term 'we', creating confusion and suggesting generalisation in expression.

As a design practitioner I have drawn a lot from CD methods and the equally critical debate surrounding DnR's practice. However, as a citizen, I am increasingly drawn towards John Wood's position, who critiques CD as commenting but not changing, calling for Meta Design, a »self reflexive and trans-disciplinary design ethos that is employed to challenge and re-design the paradigm that 'threatens human survival'« (Wood, 2013). I am shifting my practice towards activism — contributing in my field towards a preferable, more sustainable future and encouraging others to do the same in their areas of expertise. In this respect I am moving closer to the field of Transition Design (TD).

2.2.2 TRANSITION DESIGN (TD)

Transition Design (TD) is a holistic theory connecting trans-disciplinary knowledge from education, science, technology, futurology and philosophy with the aim of applying it in society through design. The term

'transition' acknowledges that we live in a time of rapid social, cultural and environmental change in which it becomes increasingly clear that the capitalist model of continual growth cannot be reconciled with our planetary boundaries and that our capitalist pattern of production and consumption has to transform radically in the 21st century. It also implies that this is an ongoing process, rather than a development towards a preconfigured future scenario.

TD's historical roots can be found with architect, inventor and systems scientist Buckminster Fuller and designer, educator and author Victor Papanek, who both advocated ecological awareness and grounded their theories and practice in ecological systems thinking in the 1960's and 70's. The philosophical basis for transition design is best described in Hans Jonas 'Imperative of Responsibility in a Technological Age' (1979): He describes the environmental impact of advanced technology and insists that the survival of humanity depends on an extended scope of ethics including non-human entities and future generations. »Act so that the effects of your action are compatible with the permanence of genuine human life« (Jonas, 1979). One expression of how people strive to address these concerns is the grassroots initiative 'Transition Network', initiated by activist, designer and writer Rob Hopkins in Totnes in 2006. It has since developed into a network of 'Transition Towns' and other initiatives, to adapt to change — and decrease its oil dependency. Projects include local currencies, garden sharing initiatives or planting food crops in public parks. Transition stands for a holistic reconception of lifestyles, communities and models of production and consumption towards a resilient society and ecology that considers the future consequences of its actions. The driving force of the movement is the participants' ethical awareness of the urgent need for transformative change. Since 2013, this process of transition has been translated into a design method and associated postgraduate and doctoral classes by Terry Irwin, Gideon Kossoff and Cameron Tonkinwise at Carnegie Mellon University. The framework consists of four interrelated areas of knowledge, action and reflection described using the terms 'visions for transition', 'theories of change', 'posture and mindset' and 'new ways of designing'.

TRANSITION DESIGN FRAMEWORK

Four mutually reinforcing and co-evolving areas of knowledge, action and self-reflection

Visions for transitions to sustainable societies are needed, based upon the reconception of entire life-styles that are human scale, place-based, but globally connected in their exchange of technology, information and culture. These visions are based upon communities that are in symbiotic relationships to the ecosystems within which they are embedded.



fig.13: Transition Design Framework, Irwin, Kossoff, Tonkinwise, 2013 CMU

activating citizens to collectively increase their town's resilience — the ability of a community

1 Visions for Transition – I Have a Dream

Visions for Transition is a call to speculate about desirable futures, to future-cast, in a positive, constructive way. Our society is poor in positive visions of the future as shown by the many dystopian futures depicted in popular media. On a societal and economic level, it appears to be »easier to imagine the end of the world than it is to imagine the end of capitalism.« (As quoted by Mark Fisher in *Capitalist Realism* and (mis)attributed to both Slavoj Žižek and Frederic Jameson). DnR make a similar point in their book 'Speculative Everything', stating that: »Now, a younger generation doesn't dream, it hopes; it hopes that we will survive, that there will be water for all, that we will be able to feed everyone, that we will not destroy ourselves.« TD encourages a mindset of constructive activism and envisioning, rather than passive hoping. Clare Brass, head of SustainRCA, illustrated the necessity for this change on outlook effectively, stating that: »Martin Luther King's 'I have a dream' would never have rallied the masses by invoking a nightmare.« (2013)

In Transition Design, the vision is informed by new knowledge about natural, social and built/designed systems (see Transition Design diagram, p. 33). Though change is urgently needed, Transition Design realises that implementation may need to take place over a longer time horizon and consequently envisions towards this horizon. From today's vantage point the future-cast vision might therefore at first glance look utopian and appear to be counterfactual, merely possible instead of being probable.

To counteract this perception, transition designers then develop from the long-term vision — the beacon they are steering towards — compelling scenarios at an accessible or imaginable time horizon. This argument is factually grounded, closer to the present and thus more likely to be understood by the audience. It is therefore more likely to positively influence the trajectory towards the future in terms of sustainability and ecological systems thinking. Most importantly, the scenario enables viewers to imagine themselves within it as active contributors. The more people subscribe to the scenario, the more likely a community will form and move towards the vision devised. The designers have created a vision with a pull (Polak, 1997).

2 Theories of Change – Implementing Change

Once the future beacon is set via the vision, designers involved in TD

consider which actual interventions in the near future make the longer-term visions more probable and which factors stand in the way of change. Using a method called back-casting, they formulate pathways from now towards the envisioned future, underpinned by theories of change, giving transition designers insights into the dynamics of systems and change. The incorporated theoretical planning input is drawn from the fields of psychology, sociology and living systems theory and helps designers gauge the impact of an intervention. TD practitioners think in the 'long now' (Brand, 1999), considering the long-term implications of possible interventions, adjusting either the intervention or the targeted vision accordingly.

3 Posture and Mindset

In the TD model, designers' postures are made up of intrinsic values, aims and personal roles in the design process. The personal and professional values of transition designers align and become the driving force and compass of the design process. Transition designers believe that change is urgently needed and want to enable it through their design practice. The aims of designers shift as a project progresses, from the creation of a compelling concept and vision to initiating interventions, their implementation and the scaling of the design or project for impact on society. Transition designers separate desirable from undesirable futures based on their personal values. To have impact, they seek collaborations connecting knowledge from diverse disciplines and build communities for change based on collaborators sharing the same values. In the process, the role of designers shifts from individual envisioning authors to open-minded facilitators of change, a shift from I to we. The resulting communities apply co-design methods and work in iterative cycles of research, action and self-reflection akin to situated action research methods.

4 New Ways of Designing

The combination of future-casting and back-casting, as well as the time-horizon-based aim adjustments and role changes of the designer call for new ways of designing, conceived through practice-based research. Buchanan (1992) states that designers need two tools, a microscope and macroscope, that enable them to understand their work on multiple levels of scale. Transition design practitioners and theorists

share this systemic future worldview, understanding that each intervention has consequences on multiple scales and that communities are tied in symbiotically with the ecosystem that sustains them. They aim to grow projects from personal interventions to infrastructure-supported movements.

To be scaleable, transition design projects have to be 'relational' as described by artist Marjetica Potrc (2017) »We have learned that sustainable solutions are primarily local solutions, not universal ones ... however, every local solution is part of the greater whole, is part of the world.« Relational means adaptive to changing contexts in space and time, not a »one-and-only plan, result of mono-rationality« but compatible with »a world in which poly-rationality, dissimilar uses and cacophonous diversity are a reality« (Davy, 2008) (Roggema, 2014, p. 6).

It also means, as Potrc describes, that the planning and acting are not conducted in two distinct phases but inform each other iteratively. The 'obsessive-ness' (Tonkinwise, 2014) with which designers tend to develop concepts has to give way to an openness for their adaptation to specific contexts and the voices and transformations of other people getting involved in the project. A concept evolves together with the designer's gaze from Buchanan's first and second order of design (graphic and object) to the third and fourth order of system building, where it becomes an asset in building the important framework for participation.

The TD framework combines a diverse array of processes. It is a cycle of action and reflection (Schön, 1983). Transition designers' methods, posture and framing of the project shift throughout the design process. They are embedded actors, facilitators and reflectors, with an activist, empowerment and community-building mindset. Designers employ speculation, future-casting and back-casting, see problems as opportunities, use system thinking, co-design methods, and action research. In the process, they evolve into 'catalysts for change' (Manzini, 2015) who are 'amplifying, connecting and 'solving for pattern' (Berry, 1981). The methods for envisioning futures relate strongly to Critical Design whereas the participatory methods (Sanders, 2010) and infrastructuring (Karasti et.al. 2014) necessary for the implementation and scaling of the project require methods from the field of design for social innovation (Cottam, 2007, Manzini, 2013) and participatory design processes.

I believe that my practice involving the development of seaweed

as a design material can be mapped quite effectively using the TD framework. Its vision for transition is one towards a more sustainable use of natural resources, exemplified by the use of seaweed as a material for design. Through practice-based experimentation I am formulating theories of change — working to ascertain and showcase the potential of the marine material and the effect its sustainable usage would have in a creative, social, economic and environmental context. Could the considered use of locally native seaweed for instance provide an alternative livelihood for coastal communities struggling with declining fish stocks and related industries? Could it even help counteract or compensate this decline if used in aquaculture — in that it provides new habitats for marine life, or cleans the water of faeces produced in fish farms or other pollutants? Could seaweed give rise to new forms of craft and manufacturing? In terms of posture and mindset, I have also been scaling up my projects. They are evolving from individually-authored designs into collaborations with other experts from the natural sciences, craft, design and manufacturing. My intention is to build a trans-disciplinary network based around seaweed and founded on a shared value base of ethical and sustainable material usage. In the process, new ways of designing are emerging, new methods and systems suited to supporting this endeavour. I will outline these in more detail in the following chapters.

Having said all this, I am not viewing the TD framework uncritically. It is comprehensive in scope, covering on a theoretical level a wide range of characteristics and aspects relevant to TD practice, ideally suited to mapping projects. However, in terms of actual practice, its ambition means that it is demanding in what it asks designers to accomplish, namely being visionaries, designers, activists, networkers, facilitators able to scale initiatives, etc. This is difficult to achieve by individuals and therefore relies on a shifting mindset from author to facilitator. I would therefore advocate that the framework is seen from the outset as a tool for collectives and that we need to establish infrastructures able to support such collectives with their endeavours.

It could be argued that my work with seaweed represents a good TD case study because it can be mapped well within the TD framework. This is difficult to verify though, because there are virtually no other TD case studies available — if one applies the rather stringent criteria of the framework authors at Carnegie Mellon University. One of them is how long a project or initiative has been running, aiming to determine

whether it is functioning effectively, resiliently and sustainably. In my view, this eliminates a large number of relevant projects because they were unable to be sustained, mostly due to lack of financial support. One example of this is Ento (Aguirre, Chung, Dasan, Fraser, 2013), a project aimed at raising awareness of and introducing people to insects as an alternative protein source with, among other benefits, much lower greenhouse gas emissions than conventional meat production. Its initiators had resolved all relevant issues and the project was well-received, but could still not secure the tranche of funding needed to roll it out at scale. I believe this project matches the TD criteria set by Irwin, Kossoff and Tonkinwise and that, as outlined above, the reasons for the projects closure lay outside the TD framework in our present economic system. This needs to be addressed by long-term financial and business support on a social enterprise model. In my view, the lack of case studies 'accredited' by Carnegie Mellon University could slow down the adoption of TD-related practices, in that the framework is seen as a proprietary framework only, a niche theory. This is reflected by the fact that Wikipedia has removed the term from its site, a regulator calling it a 'jargon-filled over-wordy formulation of a rather common idea (that) seems to be based on one person's views without any evidence of general acceptance.' In the discussion TD is perceived as a neologism, pushed by only a small number of academics rather than the field of design it aspires to be, and, in my view, already is.

2.3 THE MUSEUM AS A CONTEXT

In this section I will discuss the relationship of CD and TD to the museum. Practitioners from the two fields differ markedly in their views on the subject and their reasoning will help explain my position towards the museum in relation to my practice and the Department of Seaweed residency at the V&A.

Critical Designers such as DnR often exhibit their work in a museum context. They use the museum, a place of learning, inspiration and sensemaking, as a setting to communicate their speculative future scenarios. DnR create displays of textual information, props illustrating their fictions, photographs, films and animations depicting the scenarios and showing the props in use. Through these displays, DnR aim to make their scenarios and speculations accessible to museum audiences and spark reflection and debate in viewers. However, all of these outcomes are constituting a fully formed and illustrated scenario. In my view, this type of exhibition appears like a comprehensive experience, however, it does not explain in an experiential way the development of the scenarios or ask audiences to contribute to concepts. Showing objects in a 'do not touch' manner is a lost opportunity to let people bodily relate to, experience, enact and react to a scenario. I find this significant, particularly since Dunne and Raby state that roleplay is a key element of their process.

Critics like TD-proponent Cameron Tonkinwise (2015) find fault in the positioning of DnR's work in the museum, however, unjustly in my view. He positions DnR's design practice closer to art than design and other fields. Tonkinwise also calls museums 'austere' (ibid. p.186), suggesting an old concept of an ivory tower set apart from everyday life, or a white cube art gallery environment. He states that »if it is in a gallery, it is art. If it is in a gallery, it is circumscribed and so impotent.«, meaning that in his eyes, the museum context cancels out the agency of DnR's work, disconnecting it from industrial design, the very field it relies upon to have relevance and connect to the lives of their audiences. Malpass (2015) also states that: »the designs only 'works' if it is viewed as industrial design and the objects are seen to operate in a system of use beyond the gallery's white walls.« However, I feel that these perspectives firmly embed design in precisely the paradigm both CD and TD seek to overcome and also rely on an outdated perception of the museum.

What is the reasoning behind this criticism and the tendency of TD practitioners to shun the museum as a platform for their work? It is, in my view, that TD challenges existing paradigms and infrastructures and practitioners therefore have to or tend to build their own infrastructures to disseminate and co-create their visions, share ideas and build a community. Consequently, based on their operative-activist mindset, museums feel less relevant to their practice.

Dunne and Raby's critics do not appear to differentiate between types of museums. Even though Malpass states that »When the designer's intention is that the work be seen as design, critique from the perspective of art can be distracting.« (2015) and distances himself from critics critiquing CD on the basis of fine art, his description of the museum is certainly that of a generic 'White Cube' art museum. I find this difficult since it does not reflect the diversity of museum concepts, spaces, offerings and strategies that exist today. I believe that design-related museums like the V&A, with a rich programme including many interactive, process-led elements provide a good context to disseminate DnR's concepts. Nonetheless, as stated above, the nature of DnR's exhibitions means that their audiences remain relatively passive and scenarios are viewed or consumed to be processed mainly intellectually, instead of also being 'lived' by an interacting audience. DnR are not entirely comfortable with the museum setting themselves, however, it is difficult to find other contexts that are set apart from consumer culture and draw such diverse audiences, who visit to experience and learn, to share and exchange.

How does my practice in the context of CD and TD relate to the museum? Based on my experience of working with seaweed at Galleria Nilufar (fig. 10), Deutsche Werkstätten Hellerau (fig. 7) and the Stanley Picker Gallery (fig. 9) as well as during Vienna Design Week (fig. 11), I believe that galleries and museums are spaces highly conducive to TD-orientated design practice and practice-based research, critical speculation and actively working towards preferable futures — if designers use them to interactively share practice and processes rather than outcomes. This would align with the TD framework with its activist outlook, positioning TD within society and describing its agency as 'cosmopolitan-localism'. »The local is our interface with the whole world« states Manzini (Manzini, Coad, 2015, p. 3). The museum already acts as such a local interface.

It would appear that Tonkinwise excludes museums from this definition. In my view this represents a missed opportunity. I understand the museum as an infrastructural node for a society to reflect who they are, where they come from and, in a more constructive, designerly process question and shape the community's trajectory towards the future. The museum could offer a nourishing environment for these processes, enabling people to actively and interactively pursue and inquire without forfeiting the critical and analytical mindset of CD. To do so, I propose to test and discuss a person-centered design process conducted publicly in the museum, that is based on open-minded sharing and dialogue as well as joint making and experimentation with the aim to grow a single vision into a field of visions, a pool of perspectives on a given subject and through it, to facilitate the shift of my own designerly posture from author to facilitator. This is what I will propose and discuss in the following chapters, using my residency at the V&A as a case study.

3 DIALOGUE & MAKING: METHODS FOR PARTICIPATIVE DESIGN IN THE MUSEUM

My six-month residency at the V&A was aimed at exploring ideas of participation and speculation in design in a museum context, using as a case study the development of seaweed as a design material. It was not my intention to present a fixed mono-rational vision for a future involving seaweed as a material. Instead, I wanted to initiate an open-ended process of shared, practice-based research, experimentation and speculation with wide-ranging possibilities for participation and collaboration. To achieve this, I had to establish a framework of methods and tools to facilitate this process. My aim was to establish this foundation for the residency combining aspects of my previous practice, Critical Design (CD), Transition Design (TD), as well as ways of encouraging participation and community building, contextualised by concepts from fields including sociology, anthropology, psychology and philosophy. To develop a functioning framework I had to gain insights into current museum practice, the museum as a space and its developing function and focus in the 21st Century.

3.1 MUSEUM SEEKS MAKERS: COMMUNITY AND PARTICIPATION

From the outset, I viewed the V&A residency as a group project rather than an individual initiative. It was therefore important to establish how participation and community building are used in contemporary museum practice as the institutions are adapting and evolving to meet societal developments in the 21st century. In the process, museums redefine their roles and relationships with their audiences in a much more interactive way. Museum director, former design consultant and author of the book 'The Participatory Museum' Nina Simon defines such a participatory cultural institution as:

»... a place where visitors can create, share, and connect with each other around content. Create means that visitors contribute their own ideas, objects, and creative expression to the

institution and to each other. Share means that people discuss, take home, remix, and distribute both what they see and what they make during their visit. Connect means that visitors socialise with other people —staff and visitors— who share their particular interests. Around content means that visitors' conversations and creations focus on the evidence, objects, and ideas most important to the institution in question.« (Simon, 2010, Preface)

Instead of speaking about 'users' and 'stakeholders', as is customary in participation design, the discourse of museum participation describes the engagement and activation of 'publics', as framed in a situational manner by the American philosopher, psychologist, and educational reformer John Dewey. A Deweyan public is a group of people who self-organise around a shared concern (Dewey, 1927) and, in the process of doing so, form a community. This aligns with my aim of establishing a community of designers, craft and manufacturing specialists, as well as scientists and researchers around sustainably working with seaweed. This aim of transdisciplinary participation could also contribute, in my view, to the transformation of the museum from an educational institution into a communication platform (Gesser, Handschin, Jannelli and Lichtensteiger, 2012) enabling publics to form around other issues in the future.

Nina Simon gives three key reasons why museums seek to become such participatory public places, that engage in co-creative practices together with their visitors:

1. To give voice and be responsive to the needs and interests of local community members
2. To provide a place for community engagement and dialogue
3. To help participants develop skills that will support their own individual and community goals (Simon, 2010, 263)

Simon's three reasons highlight the benefits of a much more active and even activist posture on the part of the museum. On her website she states:

»I believe that museums have the potential to undergo a similar evolution as that on the web, to transform from static content authorities to dynamic platforms for content generation and

sharing. I believe that visitors can become users, and museums central to social interactions. Web 2.0 opens up opportunity, but it also demonstrates where museums are lacking.«

(Simon, Museum 2.0 website)

The great advantage of the museum in this shift is its physicality that gives the potential to facilitate experiential learning in a multi-sensorial environment through social activities and collective experiences. In the age of the internet where virtual platforms for networked cooperation have become common infrastructures, allowing people to engage with each other and their shared interests face to face, in real time, while being digitally connected to »global flows of ideas, information, people, things and money« (Appandurai, 1990). This societal condition, coined as 'cosmopolitan-localism' (Sachs, 1998, Manzini, Vugliano, 2000, Manzini, Jegou, 2003), offers »quite a delicate balance as, at any time, one of the two sides can prevail over the other leading to an anti-historical closure or, on the opposite side, it can lead to a destructive openness of the local social fabric and of its peculiar features« states Manzini (2008).

If Manzini is right, the relevance of the museum in the 21st century lies in balancing an increasingly digitally-mediated world with an analog platform that enables society to make sense of their condition by enabling engagement with their past and present and by facilitating the articulation of wishes and dreams for the future — provided the museum is positioned as a participative, community-building institution.

Simon positions the 'co-creative museum' firmly at the heart of its local community, supporting it in realising its aims, as well as helping build the capabilities required to achieve them. In my view, museums as established physical community hubs in a digitally networked world could play a vital role in the creation of new knowledge. Rebecca McGuinness, Senior Museum Educator at The Metropolitan Museum of Art in New York, also discusses importance of the museum as a physical environment interactively engaging publics in knowledge creation. She emphasises that this sharing mentality entails a much flatter museum hierarchy:

Knowledge is in part created by the environment, but people are a crucial part of that environment in museums and therefore of our knowledge creation. Twenty-first-century art museums are places for shared experiences, for looking at and

discussing art with others, for making art with others, for other social activities. Experiential and social learning is replacing the one-way museum lecture. Museums are not imparting knowledge from on high but rather sharing in its construction, co-creating meaning with their visitors. (Levent and Pascual-Leone 2014)

Even though McGuinness specifically refers to art museums, I believe her comments relate just as much to institutions dedicated to design or other fields of contemporary practice. In terms of the construction of knowledge and co-creation of meaning I was keen to investigate the V&A and how it deals with these aspects adapting to the 21st century would impact on my residency practice. How might my residency contribute to the museum?

Eileen Hooper-Greenhill, Professor Emeritus of Museum Studies at Leicester University, calls knowledge the commodity of the museum. Traditionally, the museum's knowledge about cultural heritage is embedded in its collections and is shared through objects that are selected, discussed, arranged and explained through a curatorial framework. These processes are ongoing, aiming to interpret collections and make them accessible in formats imbuing them with contemporary cultural currency. This reliance on objects as collectable carriers of cultural meaning is being challenged by the dematerialisation and transdisciplinarity of the expanded field of design. Dr. Jana Scholze, Associate Professor on the Curating Contemporary Design MA at Kingston University and former Curator of contemporary Furniture and Product Design at V&A describes this as follows:

Objects may now be flexible, ephemeral, and have sometimes even disappeared completely. In contemporary design practice demarcations between disciplines dissolve while new disciplines materialise. Processes and services are increasingly dominating the design scene, with little or no intention to produce a tangible object. Such a situation is challenging for museums that are by definition the place where tangible objects are collected, interpreted and displayed As a result, the understanding of the status and agency of an object is challenged, as is its ability to perform in an interpretative and discursive context. (Scholze, 2013)

If the status of tangible objects as the sole carriers of meaning in museum practice is questioned, what other forms of engagement might come to the fore? From a traditional perspective, my work with seaweed poses numerous challenges for a museum, similar to those outlined by Scholze. It is a natural material without an established craft, design or museum context. Neither can I guarantee that seaweed or seaweed-based things conform to the collection criterium of permanence. Even though collective practice-based material research in a residency — work with an intermediate thing between nature and artefact — might generate new knowledge about how museums engage with, facilitate and present speculative design processes and objects, it is questionable whether this knowledge will be legible in the final object outcomes and find its way into the collections. In my view, museums should investigate the extension of their object-based collections into collections of concepts, processes and things — formatted for virtual as well as physical accessibility and interaction.

Timothy Ingold, referencing Joshua Pollard (2004: 60), describes objects and artefacts as fixed entities, whilst considering ‘things’ as being in flux and directly tied to the process of making:

»Objects and subjects can exist only in a world already thrown, already cast in fixed and final forms; things, by contrast, are in the throwing — they do not exist so much as carry on. And as the things they are, people too are ‘processes, brought into being through production, embroiled in ongoing social projects, and requiring attentive engagement.’«

(Ingold, 2013, p. 94)

The V&A residency studio differs from its collection-holding departments in that its focus is not on the curation of existing objects but on the processes of making. Residency outcomes do not enter the collections automatically. It is a museum space in which design is a verb rather than a noun, describing a generative activity that projects into the future. This, again, is also the realm of participatory design. Residency spaces in museums, like that in the V&A Sackler Centre, facilitate engagements in ‘pre-object’ design processes, so the two concepts of participation in the museum and participation in design need to be amalgamated to facilitate the participation taking place in a museum residency. Many of the aspects that are already fixed in objects and artefacts — embodied

knowledge — are still in flux in this generative phase of the design process. It concerns the entire development from not-knowing to guessing, testing, prototyping, reflecting and eventually, knowing. Based on Ingold’s description and for the purpose of this PhD, I will be describing the physical outcomes of my residency as ‘things’ not objects, as they are still in the process of ‘becoming’ (Ingold, 2013, p. 94).

3.2 DESIGNING METHODS: PARTICIPATION, DIALOGUE AND MAKING IN THE MUSEUM

I am exploring participative approaches for more comprehensive ways of probing the complex fundamental issues underlying my practice, such as sustainability, cultural value systems and ethics, by drawing on a wider range of perspectives than my own. What are the benefits of a participatory approach to design? The German mathematician and design theoretician Horst Rittel coined the term ‘symmetry of ignorance’ (Rittel, 1984, 317–327): When a group deals with wicked problems, i.e. problems that are difficult to solve because of contradictory, missing or changing requirements and viewpoints, both the expertise and ignorance are equally distributed among the stakeholders. Therefore, by engaging with a problem collectively and considering all individual viewpoints, the group should be able to reduce their blind spots regarding the issue at hand.

Rittel’s theory implies a flat group hierarchy and a widened notion of what constitutes ‘expertise’: tacit knowledge of a given context is valid as much as formal expertise. In investigating a wicked problem, people who may all be experts in their own fields acknowledge the relevance of each other’s expertise and thereby enable contributions at eye level from all stakeholders. In this, expertise is defined more broadly, including professional expertise as well as personal, social, cultural, historical, systemic and processual expertise, and knowledge that is often not overtly expressed but tacitly felt. This is something I was keen to achieve in my V&A residency as well. My aim was to establish, in the words of Josephine Green (2009), former Senior Director of Trends and Strategy at Philips Design, the much flatter hierarchical structure of a ‘pancake’ rather than a ‘pyramid’.

Which methods, tools and techniques enable participation in design? And how can they be used to turn museums — and residency spaces in particular — into spaces for participative design? The social scientist, psychologist, and anthropologist Elizabeth Sanders describes participatory and people-centred design methods that shift the focus of the design process »from designing for users to one of designing with users« and towards »participatory experiences«. (Sanders, 2002) Sanders states that everyone can contribute to such participatory experiences given »appropriate tools to express themselves«. The tools and techniques in the framework of participatory design are (Sanders, Brandt and Binder, 2010):

1. Making tangible things
2. Talking, telling and explaining
3. Acting, enacting and playing

She describes three ways we can learn from people in participative processes, namely by examining what they say/think, do/use, know/feel/dream. She lists the following aspects:

- By listening to what others say, we find out about their explicit knowledge.
- By observing what they do and use, we discover observable information.
- When we find out what people know, we learn about their perceptions of experience.
- When we know how they feel, we can empathise with them
- When we find out about their dreams, we find out what they wish for and discover their latent needs. (Sanders, 2002)

The last three aspects relate to tacit knowledge (Polanyi, 1966) aspects of knowing that people cannot easily articulate and might not even know they know, feel or dream about. Sanders states that really empathising with others requires more than listening and observation. She considers 'Making tangible things' as a participatory design method suited to explicating tacit knowledge. Similarly to the props employed by Dunne and Raby discussed in Chapter 2, the things proposed by Sander's are intended to enable reflection and generate insights. She states that really empathising with others requires more than listening and observation and incorporates 2D collages and mappings as well as 3D mock-ups

often created through engagement facilitated via toolkits. The engagement activates tacit knowledge (Polanyi, 1966): concepts and thoughts people cannot easily articulate and might not even know they know, feel or dream about. Sanders describes the benefits of tools, be they toolkits or actual tools, as such:

Because they are projective, the Make Tools are particularly good in the generative phase of the design development process. Generative research occurs very early in the design development process. Its purpose is to discover as-yet unknown, undefined, and/or unanticipated user or consumer needs. Ideas and opportunities generated by users are usually quite relevant and powerful when acted upon and brought to market. (Sanders, 2002)

She bases her statement on a traditional design model for a consumer market. The toolkits are designed to generate discourse and insights from multiple stakeholders in the early states of a design process. In contrast, I am keen to engage people through participative practice outside of the industrial paradigm, in the largely non-commercial environment of the museum. To me, the visitors are not users or consumers of my design but active citizens and potential collaborators who I aim to entice into engaging with, reflecting on and sharing thoughts about a future world in which seaweed is a sustainable material for making. Nina Simon touches on the currency of this approach when she describes museums:

»inviting people to actively engage as cultural participants, not passive consumers. As more people enjoy and become accustomed to participatory learning and entertainment experiences, they want to do more than just 'attend' cultural events and institutions. ... When people can actively participate with cultural institutions, those places become central to cultural and community life.« (Simon, 2010)

Making, in this case, is a method to trigger, articulate and exemplify what has been thought or conceptualised before and activate a community. Sometimes the engagements can be highly structured, such as an afternoon workshop with a group of primary school children. In a residency context, another form of engagement is also possible: sponta-

neous contributions to an ongoing process, that are triggered by a multi-sensorial experience and offer reflections that can inspire, enable and inform dialogue between the participants. This informal participation could lead to more tailored experiences and input by participants, as some might prefer engagement through dialogue, while others have an affinity to making.

To maximise the benefits of both types of participative engagement, I want to make use of fixed-scope workshops, whilst within the core DoS team aim to avoid pre-fabricated aids and making exercises in favour of actual experimental practice, practice-based research, reflection and speculation. To achieve the latter, my focus is on providing seaweed and creating an accessible studio-workshop setup with low-tech hand tools that enables the participation of a wide range of visitors. The things made fulfil multiple purposes, triggering further engagement, speculation and discourse — like DnR props (2013) and Make Tools (Sanders, 2002) — but are intended to help developing a body of processual knowledge, a framework and network for working sustainably with seaweed.

3.3 ON DIALOGUE

To enable constructive participation in the context of my residency and benefit from the insights of Rittel's symmetry of ignorance, I investigated how cooperation is facilitated through dialogue and making. Sociologist Richard Sennett (2012) considers the 'subjunctive mood' to be conducive to networked cooperation:

»The subjunctive mood is most at home in the dialogical domain, that world of talk that makes an open social space, where discussion can take an unforeseen direction. The dialogic conversation ... prospers through empathy, the sentiment of curiosity about who other people are in themselves.« (p. 23)

He states that 'perhaps' and 'I would have thought' are 'antidotes to paralysed positions' claiming that:

»when you speak like a Brit: I would have thought that ..., perhaps ... — what you are doing is opening up a space of ambiguity where there can be interaction between people. You are privileging ambiguity over clarity for the sake of a kind of interaction.« (2012, lecture min. 27.00)

I believe that this ambiguity opens up new speculative opportunities for practice-based speculation about future scenarios and am also interested in exploring if there is an analogy to the subjunctive voice in making/practice-led research. Dialogic communication as Richard Sennett describes it, as opposed to dialectic communication, is less confrontational. The American physicist, neuropsychologist and philosopher David Bohm (2013) who developed a framework for this type of dialogue states:

»In a dialogue ... nobody is trying to win ... There is a different sort of spirit to it. In a dialogue, there is no attempt to gain points, or to make your particular view prevail. Rather, whenever any mistake is discovered on the part of anybody, everybody gains.« (p. 7)

Bohm understood dialogue as a form of thinking together, and proposed four principle conditions for dialogue to take place. Participants should 1) agree that no decisions should be made by the group during the dialo-

gue, freeing them from fixed aims and obligations. 2) Participants should suspend judgement, i.e. lay aside views on what is good and bad, likes and dislikes. 3) Participants should be as transparent and honest as possible, not holding back views or ideas because of what they deem appropriate or inappropriate to share. 4) Individual participants should build on the ideas of others, engaging in the conversation not in a proprietary but constructive way. (Jones, A. 2007) His principles form part of the basis of the concept of social learning »a process of iterative reflection that occurs when we share our experiences, ideas and environments with others.« (Dyball, Brown, Keen, 2003, p. 183)

The open-ended, transparent and non-hierarchical nature of Bohm's principles of dialogue could be especially suited to reflect the exploration of future scenarios for seaweed — a material without an established context in design and making, still open to interpretation. However, viewed through the lens of design, Bohm's principles also raises some concerns:

Making no decision implies that the dialogue itself and its effects on the participants are its main and possibly only outcomes. This is problematic for designers, who, after Herbert Simon (1969), change existing situations into preferred ones (p. 130) and in the process have to make numerous decisions to change anything. This means that dialogue in a design process has to be interspersed or alternated with other methods more suited to decision making, other forms of verbal or practical discourse. Donald Schön, building on Dewey's work on reflective thinking (Dewey, 1933), describes the creative process as a cycle of action and reflection (Schön, 1983). He states that:

»doing and thinking are complementary. Doing extends thinking in the tests, moves, and probes of experimental action, and reflection feeds on doing and its results. Each feeds the other, and each sets boundaries for the other« (p. 280)

If dialogue seems an appropriate methods to aid reflection, what kind of making should contribute to the 'action' in my V&A residency?

3.4 MAKING: ACTION AND REFLECTION

»Designers,« states Donald Schön (1992), »share with all human beings an ability to construct — via perception, appreciation, language and active manipulation — the worlds in which they function.« (p. 9) Schön (1983) sums up how designers, be they closer to the fields of CD or TD, use design to construct worlds. He describes the design process involved as an iterative cycle of looking, moving and looking again, as »a reflective conversation with the materials of the situation« (p. 78). He terms this situational feedback 'backtalk' (ibid.). Essentially, 'backtalk' represents a shift from action to reflection that the designer facilitates by giving form to his ideas. He also states that there is a bodily, sensory aspect to backtalk:

»A designer's knowing-in-action involves sensory, bodily knowing. The designer designs not only with the mind but with the body and senses — a fact that poses an interesting challenge to computers.« (Schön, 1992)

I agree with this notion. In my previous practice I gained a lot of input and reflective feedback based on first-hand, physical involvement with materials and processes — an advantage of the physical, analog realm over the virtual. Now, I am trying to share this process of discovery in a participatory setting by constructing a space in which seaweed plays a significant role as a material for making to showcase its potential and collectively envision future roles for the material. Cybernetician Ranulph Glanville has examined the (perceived) duality and interaction of intellect and body in design, on the level of the individual. He describes design, by example of oneself drawing, as »a circular, conversational process« (Glanville, 2003, p. 22) and uses linguistic terms when he describes it in a keynote speech at the 2014 Related Systems Thinking & Design 3 Symposium at Oslo School of Art and Design:

»I can have a piece of paper and I can make a mark and go away and come back and look at it later. And you know what happens when you draw on something and you come back and look at it later? It looks different than you thought you'd drawn it. So, in a sense, the piece of paper is having a conversation with you, and you're taking two roles: the person who

draws, the person who looks, the person who draws, the person who looks. For me, this activity, this thing of holding a conversation with yourself, usually through paper and pencil, is what is at the center of designingWhat's a miracle is that you can make a mark on a piece of paper and see it differently than you meant it. Or sometimes you don't know what you're doing. Your hand is just moving, you know, and you come back and you look, and you say, 'Oh, what would happen if...?' And now you're designing. (Glanville, 2014, p. 10 min. 40:46)

The description of the 'dialogue' he has with the paper — or rather with himself through the medium of drawing facilitated by pen and paper — might sound awkward from a linguistic perspective, but to me as a practitioner, it articulates succinctly the backtalk with the materials of the creative process. I believe that Glanville also describes this agency when he outlines the rapport a designer has with a piece of paper via a pen. He frames these as more than drawing tool and material. The paper in particular appears to be adding its 'voice' to the discussion — I am using this term carefully, not in terms of animism but to describe how it acts as a substrate for situational feedback as a drawing takes shape. It also extends the notion of 'dialogue' from verbal utterings to the engagement with materials and from human actors to a wider network of 'participants in the course of action' (Latour, B. 2005, p. 70), including material artefacts as well as living beings. In the context of this thesis the agency of seaweed as a natural material new to the field of material culture is of particular interest.

Glanville (2014) also describes another quality of designers, how they deal with errors, reframing them as opportunities for learning and discovery:

And I think that what designers do is they make errors that are opportunities. They hold conversations with themselves, and it is through this that they manage to do something which is quite, quite magical, which is to find the new. And it is through this that designers 'solve problems' — but they don't! What designers do is they go on a sort of wander through the forest and find a beautiful place to sit down and say, 'That's why I went on this walk today!' (p. 10)

The positive, resilient mindset Glanville describes is enabled by loosely structured experimentation and discovery that I aim to translate into a group setting. How will participants converse, engaged in the two roles of drawing (or making) and looking? How will we interact with other dual-role individuals in a group setting? How will we design and speculate together and how will we collectively reflect on errors that might arise in our practice and reframe them as opportunities? If dialogue does not lead to decisions, and making is allowed to meander along individual trajectories, what brings the group together and gives it direction? Dialogue and making lead to reflection and speculation. These should lead to planning on a more systemic level. A shared set of values lays the foundation and is supplemented and informed by speculation that establishes the direction and helps assess which trajectories might lead to more sustainable futures.

Based on the aspects relating to participation, dialogue and making, I plan to employ a method supporting ongoing, mutually supportive cycles of action and reflection in my residency at the V&A. My hope is, that this might lead to a diverse range of practice-based outcomes that enable the integration of knowledge and feedback throughout participative processes, aiding speculation within and beyond the museum. I consider the limited 6-month timeframe of the residency as just the beginning of an ongoing process rather than a fixed-timeframe project. Design researcher Helena Karasti (2010) describes this disbanding of fixed timeframes as the difference between 'project time' and 'infrastructure time', leading to a notion of 'continuous design' of which I see the residency to be the initial set-up phase. Understanding it as such opens up opportunities of implementing in society what was developed in the museum. To this end I am hoping that initiating a participatory process of continuous speculation and design enables contributors to the DoS to expand their thinking from 'design for use' in the now (Börgvinsson, E., Ehn, P. Hillgren, P.A. 2012 p. 105) and near future to engaging in more open speculations about long-term uses for seaweed.

To me, it is important that this speculation is practice-based. I hope to involve a diverse group of people in the work with and around seaweed and embed an awareness of the material's agency in its beginnings — to enable my proposed residency community to develop craft competence around seaweed. Craft competence is a concept by Richard

Sennett, which in my view unites Rittel's symmetry of ignorance and Schön's backtalk, triggered by linking processes of speculation, making and reflection through cooperation. Richard Sennett describes it below:

»Craft competence is an experimental as well as an operational process. It works by connecting problem finding to problem solving. It expands through privileging lateral rather than linear thinking. Such lateral thinking cannot be self-contained. It is stimulated by working with other people whose knowledge base is seemingly unrelated to ones own. Work in a modern laboratory as in a traditional carpentry shop progresses through creating a sociable bond with those who differ. This is true of society writ large. Embracing difference is the key to cooperation which is sophisticated and deep.« (Sennett, 2010, min. 40.00)

I see craft competence not as an end result but as an ongoing long-term process, especially in the context of developing seaweed as a material, which is still in an experimental phase, unresolved from a traditional industrial design perspective. However, I believe that it might be precisely these ongoing cycles of speculation, making and reflecting that might yield new forms of knowing and new types of engagement in the museum.

3.5 METHOD SUMMARY

With the Department of Seaweed I want to create an immersive, analog space that serves as an experiential platform for dialogue and making as well as speculation.

With it, I am using a museum residency as a platform for the sharing of skills and knowledge and the construction of collective 'knowing' through making, talking and acting (Sanders, 2012).

In the DoS, the museum's challenge of the dematerialisation of contemporary design (Scholze, 2017) becomes an opportunity, if we understand the museum as more than a showcase of past and present, but a platform for the construction of future work. Since we are dealing with materials and processes rather than objects in collections, we can engage with all senses in the construction of objects, frameworks, infrastructures and future visions around seaweed, whilst developing the craft competence required to implement some of our visions. The conditions supporting this participatory approach are a flat hierarchy (Rittel, Green), dialogue (Bohm) and the subjunctive mood. Collective 'wanderings' (Ingold, T. 2013) enable all participants to communicate at eye-level and determine the direction of their engagement. These conditions call for a malleable structure and itinerary, built on the understanding that the residency is just the first project and the beginning of a much longer endeavour on 'infrastructure-time' (Karasti, 2010). The work towards the long-term vision is built on speculation and its trajectory adjusted based on shared values within the group. Action, dialogue and reflection (Schön, Simon, Glanville) are not chronologically separate stages but are temporally braided into each other, with the aim of creating a flexible studio atmosphere that is responsive to its participants and the materials we work with.

4 THE DEPARTMENT OF SEAWEED AT THE V&A

The Department of Seaweed (DoS) is both the name of the residency I ran at the Victoria and Albert Museum from April to October 2013 and the name of the community of practice (Wenger, 2006) that resulted from this initial engagement and continues to grow. In this chapter DoS refers to the actual studio at the Victoria and Albert Museum, an experimental craft workshop periodically open to the visiting public in which we developed processes and techniques for working with kelp, built the Oki Naganode, a large seaweed sculpture and speculated about a future in which kelp is a ubiquitous material for making.

As outlined in Chapter 1, I have been working on developing seaweed as a design material since 2007 and in the process have collaborated with numerous designers and experts in other fields, in Japan, Britain, Iceland and other countries. My research into the subject has never been an individual effort and therefore, I set up my six-month residency at the V&A as a collective endeavour. I wanted to explore the potential of seaweed together with practitioners from different disciplines, undertaking practice-based research and investigating seaweed from multiple perspectives to gain wide-ranging insights within the timeframe. I intended the residency to form the beginning of a trans-disciplinary network that might carry on working with seaweed in their own contexts and cultures after the time at the V&A.

The main hypothesis of the DoS — and reason for its name — is that seaweed is as important a material for making as other materials that have or used to have their own department in the V&A, for instance textiles, ceramics, silverware and glass. Of course, at present, this assertion is neither true nor can I prove that it will ever come true. The title 'DoS' frames the residency as a speculative space, an alter-reality, in which the assertion of the cultural importance of seaweed holds true. By implanting such a department in the museum, I am allowing an alternative version of the museum to become a temporal reality, to be formed, considered and shared through collaborative making, dialogue and reflection. The investigation into participatory processes both in design and in the museum and my previous experiences at Nilufar (B. fig. 25–27) and Vienna Design Week (B. fig. 30–32) led me to the

following guiding principles for engagement in the DoS:

Guiding Principles of Engagement

1. Let the material have a 'voice' and listen to it by revealing the material qualities, capacities and designing not only 'with' seaweed but also 'with seaweed in mind'.
2. Dialogue at eye level: Establish a low hierarchy among the participants of the department with multiple access points and modes of engagement that enables information to flow in all directions.
3. Engage and reflect through making and immersion and create a continuous dialogue between contributors to the DoS by sharing processes.
4. Let collaborators and visitors participate in the processes and shape the visions within the department.
5. Embrace chance and transform mistakes into knowing and learning.
6. Do not discount emerging ideas or stop pursuing them because they cannot be realised within the residency period. It is just the beginning of a long-term endeavour.

In the six months of the DoS' V&A existence we had more than 2500 visitors with engagement varying in intensity from a quick, spontaneous visit to people returning daily to help out or taking material samples with them to combine kelp with their own techniques, such as embroidery, indigo dyeing or marbling and reporting back how it worked. As the head of the DoS I introduced visitors to the idea of seaweed as a material for making. The physical presence of the DoS space made my claim of the material's importance believable — not only tangible but also experiential, i.e. visible, smellable and tastable. The visitors physically entered the fiction as they entered the department.

The following pages emulate the experience of entering the speculative DoS studio. They recount a typical dialogue of the head of the department with visitors as they enter. The remaining chapter is structured according to scale: from materials to things, to collaborations and the museum. In each of the sections I examine the interrelated activities that made up our creative process in the DoS: Making, Dialogue and Reflection.

4.1 THE DEPARTMENT OF SEAWEED

An immersive studio full of materials, processes, and sensual stimuli that is accessible to the visiting public of the Victoria and Albert Museum. The room looks like a mix between a Wunderkammer and a workshop and smells of the ocean. Nothing is hidden, sketches and materials line the walls, experiments sit on shelves and are hung from a haphazard wooden construction on which wet seaweed is draped for drying. There are no labels, no distinction between studio and showroom. Materials and artefacts are not organised or pre-sented hierarchically but randomly clustered or scattered as they are created. A group of contributors are busily engaged in various making activities and you are greeted by the head of the Department of Seaweed. You did not know there was a Department of Seaweed at the Victoria and Albert Museum? Well, there is and you are just about to enter it. Please, come in, make yourself at home, look around and, if you have any questions don't be shy to ask us. There's some green tea going, would you also like one?

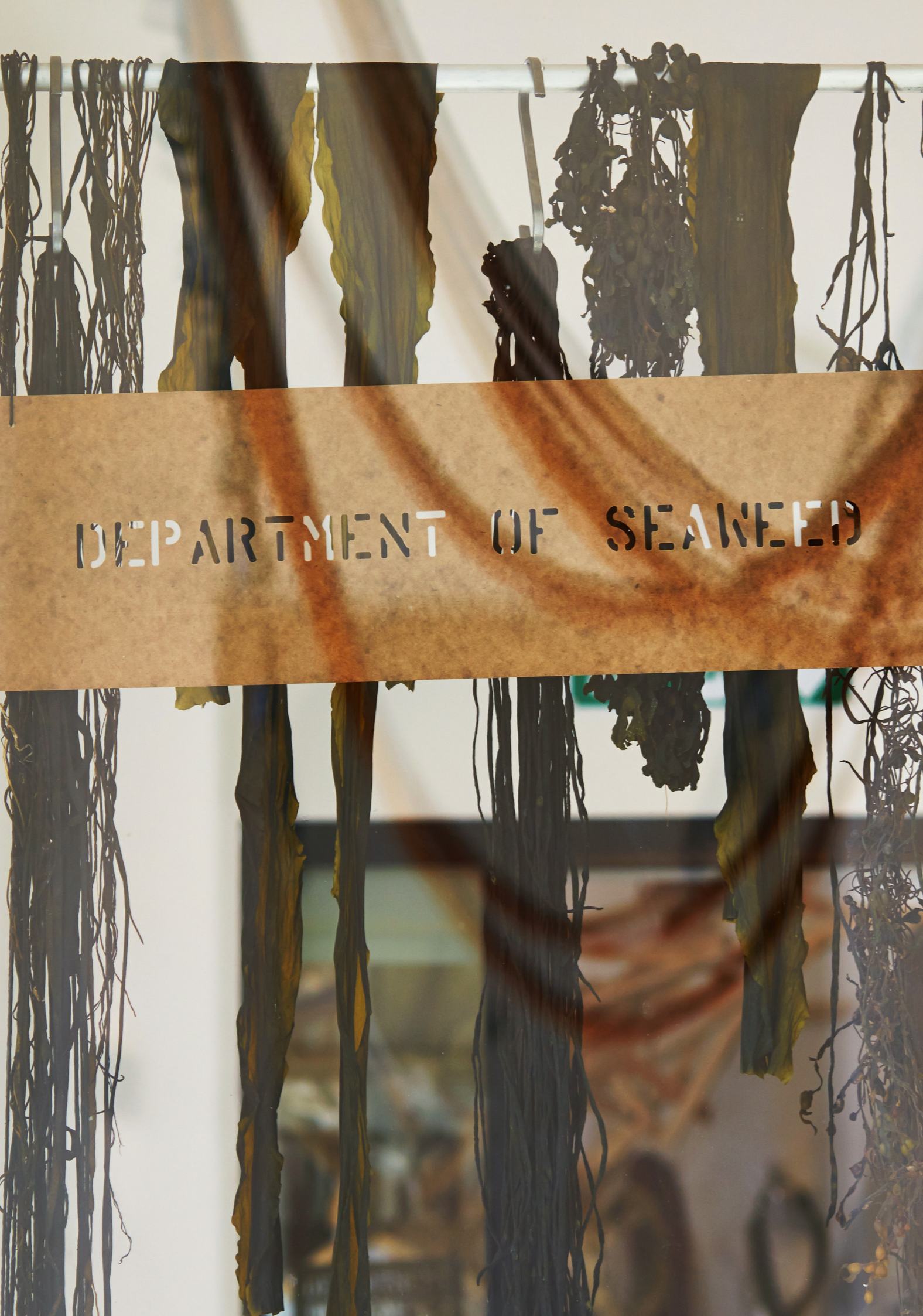


fig. 14 (left): The door to the Department of Seaweed.



fig. 15: What you see when you enter



fig. 16: Fried kelp knots and
welsh-laver-quiches



fig. 17: One piece of Ma kombu, unfolded

WELCOME TO THE DEPARTMENT OF SEAWEED

You did not know there was a Department of Seaweed at the Victoria and Albert Museum? Well, there is and you are just about to enter it, please, come in, make yourself at home, look around and, if you have any questions don't be shy to ask us. There's some green tea going, would you also like one?

What material is this?

It is seaweed, brown kelp of the species *Saccharina japonica*, that I imported from Japan as food. It is a natural glutamate that is the staple ingredient of Japanese soup stock called Dashi – that gives Japanese cuisine such an intense flavour. Here, taste some if you want.

Why seaweed?

Seaweed grows up to 6 m long and 30cm wide in just one year and while it grows it cleans the ocean. When we produce a textile or leather with this surface area it involves processing, often with chemicals, labour, time. Kelp we can just pull from the ocean where it grew and naturally filtered farm run offs like nitrate and fish faeces from the water. If we grow it as a material for making instead of eating we can grow it as a natural remedy where the oceans need cleaning most, around fish farms or industrial plants, to create a local economy around a local material.



fig. 18: View of DoS

So is it sustainable?

It can be, but, as with everything else, it depends how it is grown and harvested and transformed into a material for making and objects.



fig. 19 Strength testing

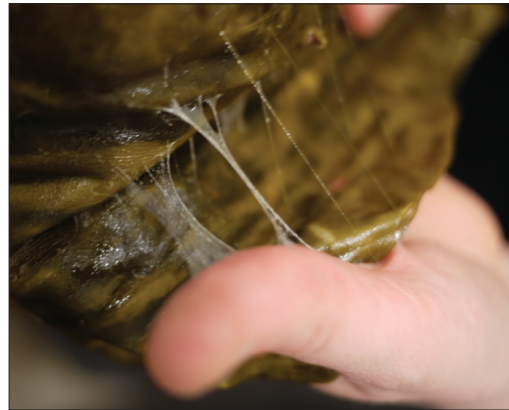


fig. 20: Gagome kombu is very sticky

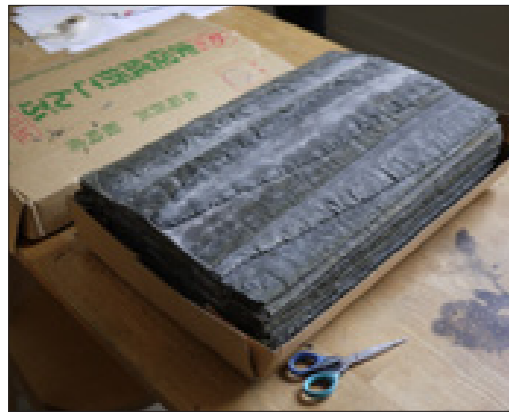


fig. 21: 15kg of Ma kombu



fig. 22: Seven types of japanese kombu

Is all of this made from seaweed?

Most of the things are made from seaweed, yes. Of course, the arching drying structure is made from wood, by my students when they came over from Germany and your cup is glazed stoneware. So no seaweed, but a glaze – which, historically, might have been made with potash gained by burning seaweed.

What about the smell?

Yes, did you notice it? Did you find it pleasant or did it disturb you? In fact, our department is the only one that can be smelled before it is seen and often the smell of seaweed feels so out of place here in the museum in South Kensington that visitors are not sure whether they can still trust their noses. They are relieved when they find the source of their sudden subconscious seaside associations. When we work with the seaweed we soak it, so while it is wet it smells of the ocean, but not unpleasantly so. Seaweed on the beach is decomposing and sweetly smells of rot very much like clothes forgotten in the washing machine. Our seaweed is food grade and smells so rich and salty you can almost

taste it on your tongue. Japanese visitors often exclaim »Umami!« in place of a greeting. Umami is the name of the rich depth of flavour of seaweed that exists in addition to bitterness, sweetness, sourness and saltiness.

Where do you get your seaweed from?

I import all seaweed from Japan as it is the most practical solution for the quantities we work with. Once I flew to Ireland and paid a diver to harvest a suitcase full of fresh seaweed that I took back to London and dried all over the house. This, here, is me in Galway with some of the bounty. My housemates were not particularly impressed so I am importing dry, flat-packed kelp as food now and work solely with the blades of the seaweed.

However, we have suitable kelp growing around Ireland, Iceland, Scotland, Norway and northern France. Leathery fronds of the species *Laminaria Digitata* – finger kelp, the one I am holding – and *Saccharina Latissima*, sugar kelp with a knobby texture could both work and I would love to run some trials with coastal communities in Europe.

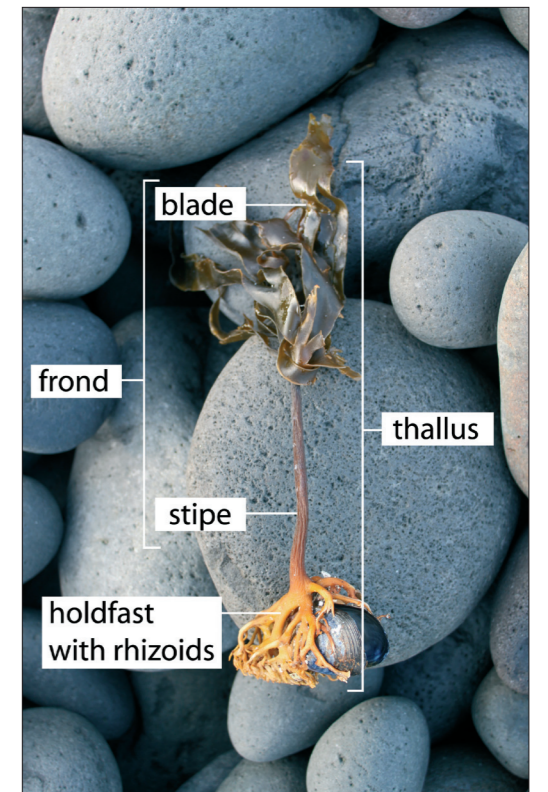
fig. 23: Julia collecting *L. Digitata* in Galway

fig. 24: Morphology of kelp



fig. 25: first technique: drying into shape



fig. 26: Raw materials and samples



fig. 27: pressed UK seaweed



fig. 28: pressed Korean seaweed

Have others worked with seaweed before? Of course, but surprisingly little considering that humans have eaten seaweed for thousands of years. In Asian countries where kelp is a staple cooking ingredient it seems that it has been so strongly framed as such that no one thinks of using it as a craft material – along the lines of 'Don't play with your food'. In Japan, even the folding of kelp is regulated by law.

In Victorian England pressed seaweed specimen were very popular. There is a fantastic collection in the Natural History Museum – and here are pressings we made of different types of seaweed (fig. 27 & 28).

In the British Museum there is a model of an Aboriginal water vessel made from bull-kelp that was already exhibited in the Great Exhibition at Crystal Palace in 1851, the same exhibition that resulted in the foundation of the V&A. Here is a picture (fig. 30). This little model of kelp is older than the building we are standing in. They used the large, leathery bull kelp blades pulled close with a fibre rope and fixed with tea-tree wood to carry water

from the coast to where it was needed. In the US there are some weavers who make baskets from the footholds, a tradition possibly going back to Native Americans. Here is an image of such a contemporary basket by Linda Jane Prairie (fig. 31). On the small Danish island Læsø, they used to roof their homes with a seaweed called Eelgrass as a thatch (fig.29). Actually it is not a real seaweed, it is a grass, growing in the shallow water. But this history inspired some Danish architects to build a contemporary version of a seaweed house on the island, with insulation and roofing made from algae (fig. 32). It was just finished this year. Kelp is the second biggest aquaculture crop, widely farmed around China, Korea and Japan. Its derivatives are used as a gelling agent. If you have brushed your teeth today you might have unknowingly consumed a seaweed derivative. More recently there have been experiments to make packaging and insulation from seaweed and to turn it into biofuel.

How did you come up with this idea? In 2007, I was an artist in residence in Sapporo, Northern Japan. I worked on the subject of man and marine life and eventually built a large installation of recycled fish boxes in the shape of an emptied out wave entitled 'The Catch' (fig. 34). For my research I was interested in everything we pull from the oceans to sustain ourselves.



fig. 29: Seegrass thatched Danish house



fig. 30: water-vessel; model; Aboriginal Australian; 1850; Tasmania; made of seaweed (kelp). From the collection of the British Museum, Oc1851,1122.2 AN274856001



fig. 31: Kelp basket by Linda Jane Prairie

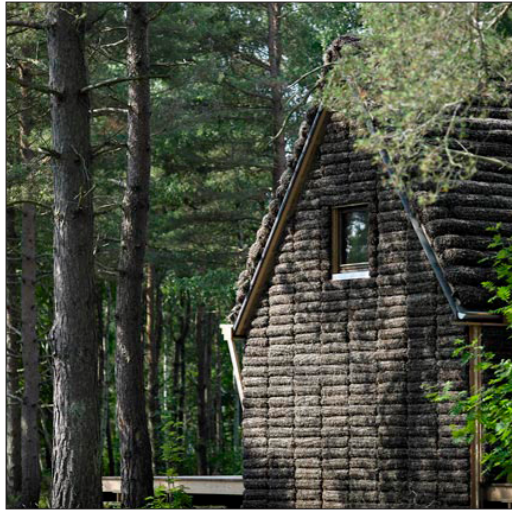


fig. 32: Contemporary seaweed house by Vandkunsten and Realdania Byd



fig. 33: Farmed kelp drying on the beach in China



fig. 34: The Catch Installation, Japan 2007

The residency staff took me to the fish-market, where the large tuna are sold, organised a salmon skin leather workshop with an Ainu, a Native Japanese from Hokkaido, and took me to a kelp farm. I was immediately struck by the beauty of the material, its surface size and leather-like texture and asked: What do you make of it? In my mind's eye I saw many objects, from furniture to packaging, clothing, shoes, bags, screens, cladding and impatiently responded to »We eat it« with »Yes, I know, but other than that?« »Nothing, we just eat it.« confirmed to me that the things I saw in my mind's eye were either fantasy or may possibly exist in the future and that a lot of work lay ahead of me.

How do you work with it?

I work through analogies. It begins with a false statement: kelp = leather for example (see: Appendix A fig. 334). The equation relates kelp, a material rich with natural associations, to leather, a material that is also rich with craft associations to processes and objects. Embossing, pressing, tanning, cutting, sewing, glueing, branding, embellishing, painting, punching, laser-cutting, lacquering, imprinting, moulding are the verbs in the associative cloud (A fig. 334). Shoes, jackets, car interiors, arm chairs, sofas, bags, belts, ancient drinking vessels, saddles, bridles, table-tops, flooring, purses, wallets, gloves, Middle-Eastern raft supports, Inuit rain coats, mobile phone pouches, tribal

clothes, farrier's aprons, glass blower tools, lampshades are in the object cloud. Now, with the clouds in my mind's eye (or in the sketchbook) I readdress the equation. Kelp does not equal leather because it is less strong/translucent/not of animal origin.

The associative cloud shifts and some applications move further away because they require strong leather (saddles, shoes) whilst others, (clothing, gloves, lampshades) come closer because they require fine leather and might benefit from translucency. The analogies scaffold my thinking.

But seaweed dries or decomposes: How do you keep it leather-like and flexible? So far, I have developed one simple way that is environmentally sound. Brittle materials have short molecule chains, soft ones have long chains. In wet seaweed the molecules chains are connected by the water. As the material dries the water evaporates and the chains are shortened. I found a way of keeping enough water in the material to keep the chains long. The resulting kelp remains flexible when dry, but it is hydrophil, meaning that it pulls moisture from the air. This is perfect for the skin on frame structures we are creating with it, but not yet suitable for every day leather or textile replacement. So we are still searching for other ways to keep the chains long so that we can replace leather and textile with seaweed on a large scale.



fig. 35: Julia and Spyros discussing a model



fig. 36: DoS team at work

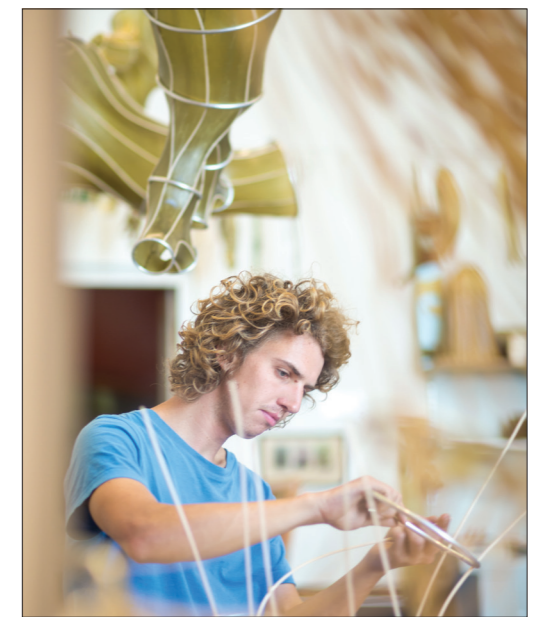


fig. 37: Marcis making structures



fig. 38: Skin on frame construction:
One limb of the Oki Naganode

What are you making it from?

Each of our design processes has multiple results: An object (or website/graphic/event), a network and infrastructure, knowledge, a clearer vision and a reframed mission. The Department of Seaweed sets out to become a community of practice of people who want to work with seaweed, who individually benefit from the objects they make but share the knowledge and build the infrastructure and network as a common. Very much like a creative commons for material development.

What are the qualities of seaweed?

Seaweed is an immensely important material resource that has long been underestimated. In Japanese cuisine, kelp is acting as a natural glutamate enhancing



fig. 39: 43 Models and test pieces

the flavour of other ingredients and is the key ingredient of dashi, traditional soup stock. Globally, seaweed-derived products, such as Alginate and Carrageen are used as gelling agents. Metaphorically, kelp fulfils similar roles in our department: It is an enabler that activates participants' imagination and channels thoughts into action. In the process it gels the participants into a community with a common goal of envisioning and enacting a world in which seaweed plays a significant role as material for making. Working with seaweed has a low participation threshold because it is a natural material that is not harmful to work with and does not have an established provenance or associated practices of making. It is not too expensive and the learning curve of working with kelp is steep and fast. There is no pre-qualification required. The mask here was made by my intern Lenka Dobranska in her first three days of working in the Department of Seaweed.

Why have I never heard of it?

We believe seaweed is as important a material for making as the other materials that have or used to have their departments within the V&A.

To this day, only a tiny fraction of the artefacts we will have made from seaweed have been realised. Most of the objects humans will have made from seaweed have not been created yet. It is up to us to bring them into existence. Therefore, our Department's temporal



fig. 40: Laser-cut seaweed drying



fig. 41: Seaweed mask made by Lenka Dobranska in her first week at the DoS

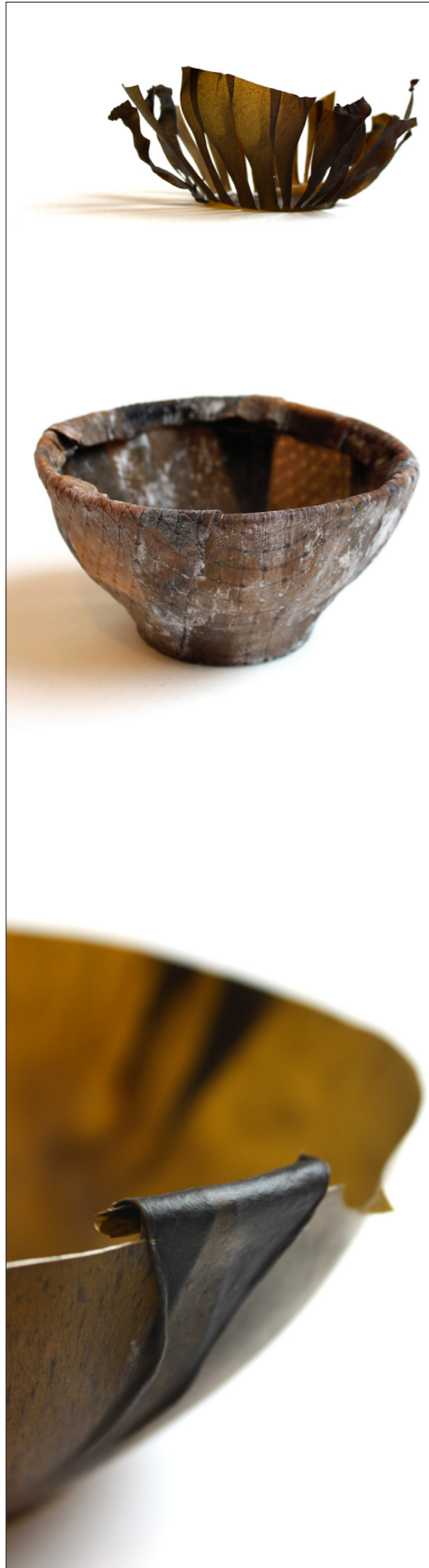


fig. 42: Three vacuum-formed kelp bowls

focus lies in the future. Futures exist as a blurred field of probable, possible, unlikely and impossible scenarios. They exist in plural until any one of these futures becomes 'the future' and turns into the present and subsequently, the past. The process of actualisation sharpens the field of futures into a point that becomes reality. In design, the process of actualisation sharpens thoughts into sketches, models, prototypes and objects. We want our visitors to join us in speculating what these future objects might be. We believe that the plurality of futures can best be imagined by multiple minds from various vantage points and walks of life, and that the discussion about these futures helps us to evaluate and, possibly, implement some of them.

To do this, the Department of Seaweed operates as an immersive field, an experience aligned more with the experience of wandering in nature, where all senses are engaged. There, the gaze of the visitor takes in nested systems of varying scales held together by complex, layered meaning: from the sun to the winds to the plants, ants and fungi or the tides and down to the tiny plankton which is feeding the whales. A curated display of actualised objects that have been consciously presented is a dense and assertive way of describing a past. However, if we speculate about possible futures we do not know what will come into being. In our Department we share processes, materials, sketches and thoughts as lenses, to enable us to look into the vast field of potential futures and to imagine possible desirable futures in a participatory cycle

of co-speculation and co-creation. The material kelp guides us along the trajectory of our speculations. As a material it is a sensory anchor that allows us to imagine the future through our bodies, not just our minds, because we can already sense it through smell, touch, sight, sound and taste. We can not only imagine it, but act it out: Seaweed provides a context for our thinking and making, a locality of occurrence.

On the one hand it is global and yet, on the other, all kelp comes from a narrow zone of ocean lining our coast, where the water is shallow enough to catch the light it needs. What triggers people's imagination in our unedited space is highly personal, differing from one individual to another. For one person it is the type of sewing machine that reminds them of their grandmother, others see connections with other materials, rubber, plastic, skin, wood, leather or contexts for application, such as architecture, jewellery, clothing, packaging. The unexpected smell of seaweed wafting through the museum directly connects many visitors with their childhood memories, transporting them to a time in life when visions and dreams are interwoven with reality through playing and acting. The possibilities we are hinting at offer a lens to the future. Each person looking through it sees other possibilities and feeds back what they imagine: 'Could you make raincoats?' 'Would it be possible to make roofs from this?' 'What are its insulating properties? Could you make panels?'

That's an interesting thought, let's consider it together. What would it take to do this? When we map the field of visions and discuss their scope and feasibility, the things we imagine help us make sense of who we might become.

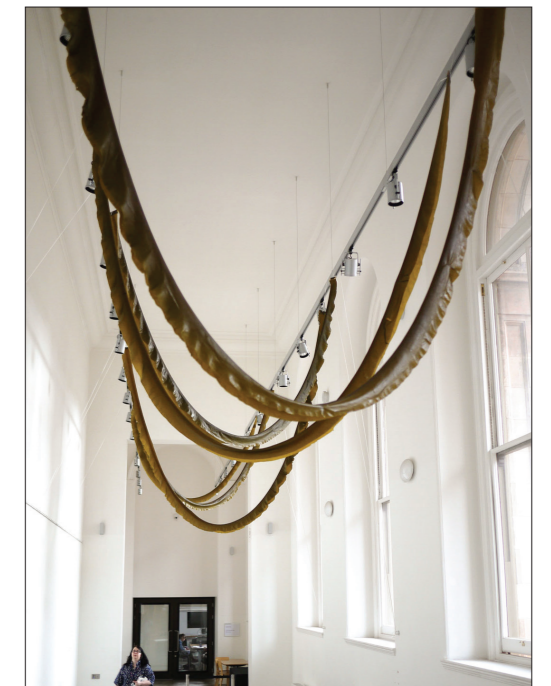


fig. 43: Kelp bunting in the corridor

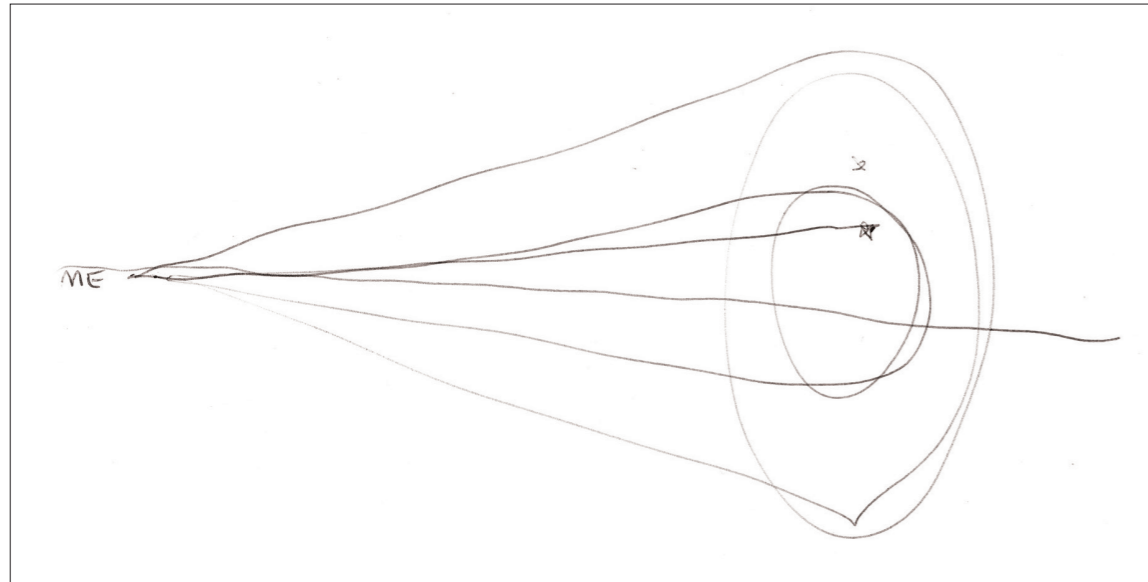


fig. 44: Sole speculation by myself

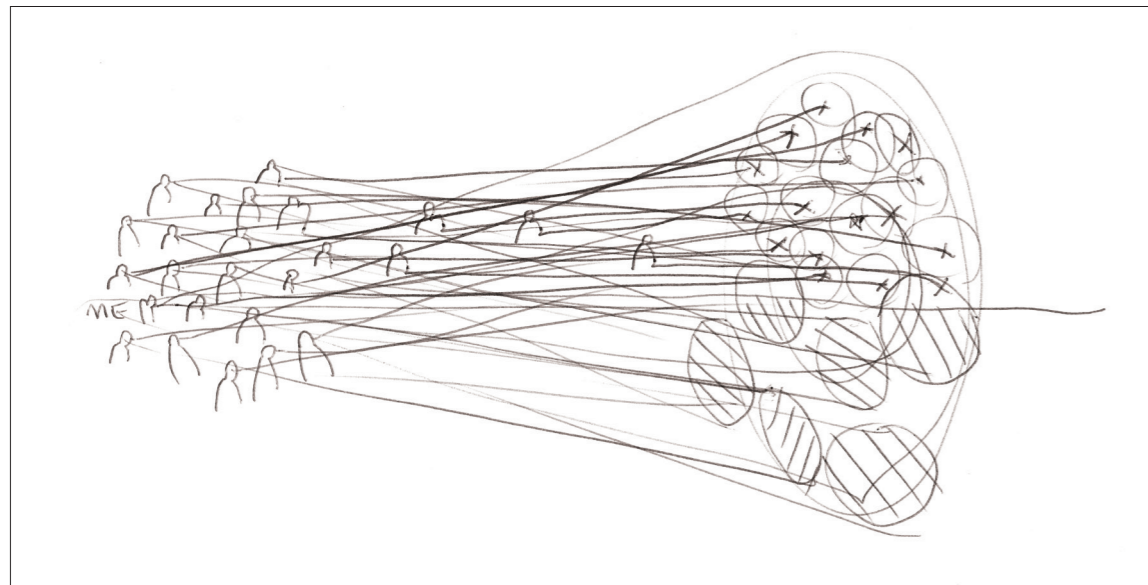


fig. 45: Co-speculating with others

fig. 46 (right side): Action and reflection



4.2 COMMUNITY OF PRACTICE

On the V&A website, Julia Lohmann was listed as Design Resident from April to September 2013. However, as stated above, I never understood my residency as a one-woman show, but as an incubator for a Community of Practice (CoP) around working with seaweed. The Department of Seaweed, an entity larger than myself, would accommodate all the interactions with individuals and groups I came into contact and collaborated with at and beyond the V&A. The term Community of Practice was coined by cognitive anthropologists Etienne Wenger and Jean-Lave in 1991 and described as »A group of people who share a concern or a passion for something they do, and learn how to do it better as they interact regularly.« A CoP is a group of practitioners who assemble voluntarily to share and advance their collective knowledge and expertise. CoPs are self-selecting and self-structuring with knowledge as their primary output. They consist of a domain, a community and a practice (Wenger and Lave, 1991) that Wenger describes as follows:

THE DOMAIN: members are brought together by a learning need they share (whether this shared learning need is explicit or not and whether learning is the motivation for their coming together or a byproduct of it)

THE COMMUNITY: their collective learning becomes a bond among them over time (experienced in various ways and thus not a source of homogeneity)

THE PRACTICE: their interactions produce resources that affect their practice (whether they engage in actual practice together or separately)

In particular, this framework applies to the DoS as follows:

The DoS Domain

Kelp. In the DoS, the domain was the investigation and exploration of seaweed, more specifically, brown kelp, as a sustainable material for making, both conceptually and through practice. Since no established seaweed-based craft practice exists, we developed methods to collect and connect applicable knowledge and skills from other fields and set

guidelines for a material-led engagement with kelp. Seaweed was not only our material but also my method of enquiry into participatory practice, embodied cognition and the 21st century museum as a participatory public place. In the Domain section of this chapter I describe the agency of kelp, our material methods and the specificities of developing a practice around a material with little cultural references.

The DoS Community

The community of the DoS was built through our interaction, dialogue and making in the residency studio at the V&A. Coming from different disciplinary backgrounds we contributed our own viewpoints, ideas, skills and expertise. Making became a form of discourse and a method of co-thinking. Different forms of engagement emerged:

1. Some long-term DoS collaborators contributed making, dialogue and reflection across all levels of complexity: material to system, sample to vision (See DoS Team section in this chapter and Appendix A, inside rear cover, A. fig. 340).
2. We also worked with specialist practitioners such as a tailor, a milliner and a marquetry craftsman to adapt some of their craft competences to suit the material kelp. These processes also involved dialogue and reflection but the engagements were more specific and outcome-oriented.
3. We engaged with the V&A staff, mainly of the Learning Department but also of the Research Department, Contemporary Department, Technical Services and the Furniture Department.
4. Workshops with specific groups at the museum, namely a class of secondary school children, families, a group of people living in a shelter, the Young Voices group of teenagers engaged in the V&A and a group of my students from the HFBK Hamburg in Germany represented a more formalised type of engagement.
5. Both myself and the learning department invited guests into the department, whom we thought might contribute to our thinking

and doing. Some were V&A staff or related to the museum context. Others were designers or artists giving lectures or running workshops in the museum's educational wing adjacent to the residency space, as well as prior V&A residents. I also invited anthropologists, biologists, an intellectual property (IP) lawyer, an art bookseller who holds a big collection of Victorian seaweed pressings, a seaweed supplier to the food industries, curators, historians and residency coordinators.

6. V&A visitors coming to the residency studio contributed to our work. Their diverse international backgrounds brought to the DoS a wide range of perspectives on our core subject of seaweed, on what we were doing and how we communicated what we did. In terms of communication, working with a natural material was highly conducive to creating dialogue with visitors. We processed seaweed without the use of toxic chemicals, heavy machinery or specialist tools, instead focussing our studio practice on manual techniques and simple hand tools. This created an »I could do this« atmosphere of potential creativity and, more importantly, worked well across language barriers. People could understand the making and engage with the materials and processes at hand.
7. And of course there was also an exchange with my RCA and V&A supervisors, who visited the DoS, commented and posed questions about my work as research, its methodology and contribution to new knowledge. To me, they appeared to be outside of the department, simultaneously offering deep insights regarding my aims, like satellites, enabling another perspective. I will describe the engagements and the outcomes they elicited in more detail in the 'Community' section of this chapter.

The DoS Practice

The outcomes produced by our practice consisted of material knowledge and material combinations, processual knowledge of how to work with seaweed, a repertoire of processing and finishing techniques, a network of interested people and visions of future scenarios, as well as a framework for collaborative and participative practice as research within a

museum context. Under the heading Practice I describe some of the object residency outcomes, the reasoning behind making them and the insights they offer. The things we made raised proprietary questions that I begin to address in this chapter and discuss further in Chapter 5.

4.2.1 THE DOMAIN

THE AGENCY OF SEAWEED: A MATERIAL AND METHOD

The scope of the Department of Seaweed was defined by a raw material — kelp — rather than a field of practice, process or an object typology. Raw materials are relational interfaces, essentially knots connecting nature with culture, knowing in humanities and science, micro and macro systems and scales, and a perceptible past with a material present and thinkable future.

»In every case, there seem to be two sides to materiality. On one side is the raw physicality of the world's 'material character'; on the other side is the socially and historically situated agency of human beings who, in appropriating this physicality for their purposes, are alleged to project upon it both design and meaning in the conversion of naturally given raw material into the finished forms of artefacts.«

(Ingold, 2013, p. 27)

Materials are not yet culture and not nature anymore, ambiguous, full of suggestive potential and conducive of knowing, emergent knowledge in flux.

»Take a stone: you can saw it, grind it, drill into it, or polish it – it will be a different thing each time. Then take tiny amounts of the same stone, or huge amounts, and it will turn into something else again. Then hold it up to the light — different again. There are a thousand different possibilities in one material alone.«

(Zumthor, 2006, p.25)

What architect Peter Zumthor describes here, is the richness of suggested potentialities materials convey. They entice us to imagine their past and future without singling out definite applications. The perceived future potentialities are as much shaped by the viewer's prior knowledge

and experience as by the sensorial and intellectual engagement with the material itself, as well as the given context and information.

Timothy Ingold describes materials as 'ineffable':

»They cannot be pinned down in terms of established concepts or categories. To describe any material is to pose a riddle, whose answer can be discovered only through observation and engagement with what is there. The riddle gives the material a voice and allows it to tell its own story: it is up to us, then, to listen, and from the clues it offers, to discover what is speaking.« (Ingold, T. 2013, p. 31)

Craftsmen acknowledge a material's agency and sometimes reinforce it, so that the artefacts resonate with the material's character and the appropriate methods and techniques used to transform it into an artefact, based on the vision of its maker. They become poetic objects giving the user an intimate insight into themselves, the dialogue with the maker and, by extension the cultural context of their inception, development and purpose. I consider the material's ability to reveal itself to be the 'voice' of the material, and the process of making a reflective dialogue between maker, process and matter. Even though the linguistic roots of voice and dialogue are slightly misleading in such an embodied encounter, 'voice' as speech is to me the most embodied language metaphor. Dialogue is made up of speaking and listening to one another with connotations of equality, directness and respect.

»Making, then, is a process of correspondence: not the imposition of preconceived form on raw material substance, but the drawing out or bringing forth of potentials immanent in a world of becoming. In the phenomenal world, every material is such a becoming, one path or trajectory through a maze of trajectories.« (Ingold, 2013, p. 31)

Ingold (2013) calls the rapport between maker and material a 'correspondence' and advocates »a way of thinking through making in which sentient practitioners and active materials continually answer to, or 'correspond' with one another in the generation of form.« (preface) In correspondence, the material's voice can be consciously protected and reinforced, or it can be deliberately concealed or unconsciously lost. 'Das Material arbeitet' is a German expression with which craftsmen

evaluate material choices and formal aesthetics and qualify their expertise. It translates directly as 'the material is working' but means that 'the material is alive, it behaves in a certain way, it responds'. A measure of good craftsmanship is the intimate knowledge of a material's character, the rapport between material and maker. Latour uses the word 'agency' to describe the potency of a material and thing to actively shape a situation.

The Japanese principle 'Wabi Sabi' acknowledges the character of materials to an even greater extent than a dialogue of equals: An object's quality is measured by how well it lets the material 'speak'. Described as »materiality pared down to essence, with the poetry intact« (Koren, n.d.), Wabi Sabi is achieved through temporality, humility, naturalness and imperfection. The Japanese artist Jiro Yoshihara, founder of the post-WWII Gutai movement investigating the direct relationship between body and matter (Barnes, R. 2001) goes even further in his Gutai Manifesto in 1956. He describes a process in which the artist is in service to the material:

Gutai art does not adulterate the material. In Gutai art the human spirit and the material go hand in hand, though they are usually in opposition to one another. The material does not enter the spirit. The spirit does not subjugate the material. If one leaves the material in its form of being and presents it solely as a material, then it begins to communicate, speaking with a powerful voice. Keeping the life of the material alive means to also bring the spirit to life. And to heighten the spirit means to raise the material to the level of the spirit.

Approach of Limited Interference

In the DoS we retained the material's voice through an approach of limited interference:

1. Most of the objects we made were the colour of seaweed, a colour that either fades or shifts from olive green to a rust-like brown over time.
2. We used the seaweed blade as a sheet material, thus keeping the linear structure, visible and tactile differences of the inner and outer section of the blades intact. The thing can still be read as a

blade of seaweed.

3. Where possible, we developed forms that incorporated the blade-width as a naturally repeating rhythm.
4. We let people experience kelp with all senses: the DoS smelled of seaweed, you could taste it, touch it wet and dry and of course see it but also hear its tensile strength when drumming on one of the kelp-sheets we stretched on frames.
5. We paired kelp with structural materials of similar strength. In the drying process the kelp deformed the structures. The deformations mapped the shrinkage of the drying kelp and thereby showed its strength and character, shrinking much more longitudinally.
6. We shaped the seaweed into ambiguous forms, many of which only suggested techniques and fields of application rather than specific object typologies. Thus, we provided provocations for enquiry rather than materialised answers.
7. Engagement through materials, processes and unfinished things can be a multi-sensorial, active and exploratory encounter, rich in connotations and multi-layered strands of information. Raw material is an active and activating matter.

What is the essence of seaweed and how does it activate and inform our engagement?

Cultural Reference Systems

Established materials for making are imbued with cultural references that sometimes date back thousands of years. Seaweed has such a reference system as a foodstuff, but is almost entirely lacking a reference system as a material for making because it has not been extensively explored as a material for making and the few historical instances of its use have not been translated into a contemporary practice.

Reference systems evolve over time through influences from all areas of human knowledge, experience and expertise. They differ from

one culture to another. Within a culture these references create hegemonic ways of how to deal with a material. The reason why I, as a European foreigner, thought of using kelp as a material for making when I came across it in Japan was because I was lacking the cultural reference system firmly positioning it as food, so I imagined other applications when I saw seaweed on the market. Cultural reference systems prescribe the material's contexts, procedures and applications deemed correct by society. They generate rules and rituals associated with a particular practice. They seem to suggest:

- how quality is measured in the raw material
- how to work with it
- what techniques, tools and processes should be used
- the rights and wrongs of working with it
- who should work with it
- what good craftsmanship means
- what objects to make from the material
- context and connotations of the objects
- how quality is measured in the object

This codified pathway from material to object creates a hierarchy between people who know and those who don't know. Through adherence to such cultural reference systems we exclude possibilities and we prioritise some voices over others: A comment on the quality of woodcraft carries more weight when it comes from a master carpenter than when it comes from a school pupil. The meaning of an object is highly sensitive to its context and is created in one's mind (Ashby, R., 1956) Or, as the anthropologist Mary Douglas (2000, 1st ed. 1966) famously stated with: »Dirt is matter out of place« (Douglas, M. 2000, 36) — garden soil is transformed into dirt as it is carried across the threshold of the house. Each context and application of a material requires specific material properties as well as functional and aesthetic considerations that, once realised, become an instance of the cultural reference system. For example, leather gloves require different leather properties than a saddle so the objects define two instances of 'leatherness' on the cultural reference system for leather. Which material properties are considered appropriate qualities depends on this cultural reference system, the object instance and the object's context, as well as the perspective of its user.

Combining a piece of seaweed with a piece of felt and another

with a piece of leather revealed to me just this:

When I severed the seaweed and sewed it to leather it felt smooth, deerskin-like, fine. The kelp stitched to felt made me feel repelled, I felt lanolin, fibre and grime. When faced with an uncommon material without an established reference system — like kelp — we try to apply the reference system of either the material it is combined with in an application or a comparable material. Criteria of comparison are its form, function, context and the usage of the unfamiliar thing. In combination with felt, oiliness and stickiness is associated with badly rinsed felt that still retains too much lanolin or soap. We pick up the oiliness above all other sensorial cues. Seaweed combined with leather elicits associations with supple deerskin. The analogy seaweed = leather triggers an appreciation of seaweed as a material of the same 'class'. As a consequence, the fine, translucent material properties of kelp are positioned as an asset. Analogue to leather, a degree of oiliness in kelp is not perceived as a negative aspect. Instead it is equated with being supple and interpreted in terms of good care and maintenance. Even without leather as an adjacent material a seaweed glove elicits deer-skin material references and as a thing suggests a material analogy, context and use. The backtalk (Schön, 1983) of material things is infused with their own materiality.



fig. 47: Seaweed stitched to felt

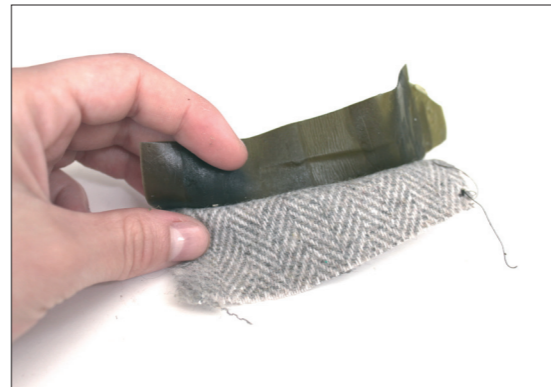


fig. 48: Seaweed stitched to tweed

Conceptual Analogies

The initial week-by-week schedule I set myself before the residency was defined by material analogies. Leather and textiles as an analogy for soft, pliable kelp. Urushi lacquer, veneer (A. fig. 138, 143) and marquetry (A. fig. 124–126) as an analogy for seaweed bonded to a backing material and as a surface coating (A. fig. 76/77). Paper and parchment as an analogy for thin, translucent seaweed, supported by a frame (A. fig. 99). I wanted each analogy to give rise to its own research trajectory, informed by the specific craft knowledge of a collaborator. The initial plan was to spend a month exclusively with one analogy before introducing the next one, but the reality of the residency developed its own flow of practice with interlaced trajectories and interconnected strands of inquiry, much richer than I had initially planned.

Material analogies offered a blueprint for making: The analogies suggested possible techniques, processes and technical equipment, as well as applications and contexts that could be adapted for use with seaweed. The work starts with a direct analogy, i.e. seaweed equals leather. This equation is obviously untrue, but opens a field of opportunity, a cloud of possible bodies of knowledge, processes, techniques and applications to tap into. When the falseness of the equation is investigated, some of the possible applications and contexts become meaningless, whereas others begin to show potential. For example, the insight that seaweed does not equal leather because it is translucent and not as strong as leather moves applications that require strong leather, such as saddle-making into the background — while applications requiring fine leather, such as gloves and other applications that might benefit from translucency, such as lampshades, come to the fore. Sometimes the unique character of kelp enabled and necessitated an entirely new formal language for a thing, for example when it became possible to morph from a laminate surface to a skin on frame structure (A. fig. 93–95). Here, two analogies needed to be questioned, amended and combined.

The analogies can be understood as the starting point for an associative thought exercise, a sample diagram of which you can find in Appendix A (A. fig. 334). It is a mental survey of cultural terrain, highlighting potential areas of interest to be explored with practitioners of other fields. Each point I thought of, I briefly considered in connection with seaweed instead of the analogue material, so if leather led me to

think of saddles, I considered seaweed saddles and, even though I discarded the idea of a seaweed saddle because of the seaweed's weakness in comparison to leather, I continued by thinking of bridles (seaweed bridles — what would be the reason and context for this?) and continued, perhaps with a technique employed when making saddles: embossing (embossed seaweed, could work, worth testing (A. figs. 70–72, 74), the treatments for saddles: wax (waxed seaweed — maybe to waterproof it?) or the processes of leather making: tanning (leather tanning = connecting protein molecules to link them into longer chains; short chains = hard and brittle material, long chains = flexible material. Seaweed is not made of protein but carbohydrates. Are there techniques associated with carbohydrate tanning? The tanning of plant-based materials? Is there such a field? Who might know? Call contact at Northampton University's tannery. Answer: Tannery does not have any knowledge about carbohydrate tanning. Who could know then? What other materials consist of carbohydrates? Paper, wood, dung, leaves. Who might be tanning any of them?

Each node opens potential lines of relation that trigger thoughts and inquiry on multiple trajectories. The relations, exemplified as lines between words in diagram A. fig. 334 associate two things with each other. Below are a few additional examples of the kind of associations between things in the form of keywords, grouped under relevant headings:

1. Lifecycle (temporal slider, back and forth): organism — material — object — leftover
2. Processes and uses, connecting the material/object with people and as such with accumulated knowledge and cultural techniques: Growing, collecting, harvesting, scientific procedures, transporting, material testing, crafting, surface finishes, uses, habits, repair, routines.
3. Material or object associations: Suggesting forms, functions, relations with other things via object families or systemic connections, either by morphological resemblance, or other attributes, context, habits, techniques and treatments.

4. Contexts: spacial — such as on the table or in the garden —, functional and systemic contexts and connections.
5. Micro-level: zooming in to fine details, molecule chains, biological processes, but also craft details, connectors, micro-features of the material or associated object.
6. Macro level: zooming out to view the thing in its wider context to see associated practices, objects, organisms, systemic interrelations, structures and patterns and a longer time-scale.
7. Associated fields of knowledge and competences. For leather/textiles these were: tailoring, textile design, shoemaking, leather craft, furriers, tanners, ancient hunting societies, millinery, tanning, weaving, pleating, spinning, felting, dyeing, stitching, sewing, embossing, coating, waxing, oiling, netting, knitting and crocheting. However, my thoughts also led to other professions dealing with skin, such as surgery but also skin-on-frame canoe making, canvas stretching, kite making, tents, tarpaulins, self-tightening skins, model aeroplanes, wooden construction kits, drums, Japanese shoji screens, embossing, letterpress, bookbinding, translucency. This already connected the inquiry to the next starting point, the analogy of thin and translucent seaweed to paper and parchment.

To decide which associations held potential and were worth investigating, I incorporated my own knowledge of the material attributes of seaweed in the equation: It grew six meters long and 30 cm wide (A. fig. 3–5), could be grown and harvested sustainably and locally, it was nutritious, antibacterial and anti-inflammatory, held moisture for a long time, could be treated to remain flexible or hardened, could be glued onto surfaces (A. fig. 77), stretched (A. fig. 9–18), glued onto other seaweed (A. fig. 7), dyed (A. fig. 110–114), painted on (A. fig. 188), moulded (A. fig. 132–133), woven (A. fig. 92), pressed (A. fig. 100).

Analogies with materials possessing similar properties led to identifying existing craft competence and suitable collaborators who could help to adapt the skills, processes and tools for use with seaweed. Each subsequent test, successes as well as failures, added information to

making with seaweed. So when leather-associated nodes suggested steps to try out by myself or in cooperation, the processes fed information to the other side of the equation, the seaweed.

Object Analogies

Object analogies pointed towards a possible formal language for things made from kelp and the V&A was an especially rich body of resonance for building an associative formal reference library. Stained glass windows (A. figs. 109, 119), tessellated glass objects, baroque chests, Japanese Shoji screens, Kimonos, glass vases, patterned wooden screens, skin on frame canoes, petticoat hoops, wicker chairs, bulbous ceramic forms, armoury and costumes inspired morphologic analogies that pointed towards possible forms, contexts and applications of things, but did not necessarily offer insights in terms of processual information. Glass and seaweed, for example, share their translucency and possibly depth of colour, but other material traits such as hardness, weight, brittleness etc. are so opposed that the techniques developed for one material fail when employed with the other. Therefore I did not collaborate with glaziers or glass-blowers but simply wandered through the galleries and collected object images and specifications as references on object, rather than material level.

Pairing of Similar and Opposing Materials

Pairing materials like those mentioned above with kelp, felt and leather, help to ascertain the material's qualities by 'testing' its properties in another material's cultural frame of reference. The conclusion from this test is — for a material without its own cultural reference system — that there are suitable and unsuitable material matches. The suitability is not only decided on a structural level but also based on the cultural reference system of the material the seaweed is paired with.

What can be learned from the pairing of dissimilar or opposing materials? By this I mean pairings of diametrically opposed material properties. I believe they can potentially widen the scope of possible applications. For example, by comparing seaweed and skin, the associations with a skeleton leads to investigating skin on frame canoes and the question what the bones would be made of if the skin was seaweed instead of animal hide. Wood, cane or bamboo? Bones, metal rods, wire, acrylic? At what scale could this be constructed? As architectural struc-

tures or on the scale of jewellery? (A. fig. 33–35, 37, 41–45) The difference to the direct material analogy is, that the paired material is not replaced by seaweed, but selected to accompany the seaweed and complement its material properties.

4.2.2 THE COMMUNITY: TIERS OF ENGAGEMENT

The key outcomes of a community of practice are knowing and knowledge. How this is arrived at can be illustrated by means of the DoS:

On a conceptual level, the DoS was a speculative department in which possible futures were sounded out by operating and communicating in the field of ‘pre-object’ and ‘pre-knowing’. As an immersive environment and a multi-sensorial associative space the DoS studio triggered strong associations in the visitors, who frequently shared their own memories and associations to seaweed or the processes we employed in working with it. At the same time, the materials and ideas, processes and setting, models, prototypes and structures we shared pointed towards a yet unrealised future scenario in which seaweed plays a major part as a material for design, with a similar status to current materials such as wood, plastic or metal.

Third Things

The things in the department were in various stages of becoming and offered only vague associations to known objects or contexts, to leave space for visitors to the DoS to imagine what might possibly be made from seaweed. To me, the things imagined by participants were ‘third things’, conjured up by combining the viewer’s own object repertoire, expertise and predisposition (1st thing) with a lens made from the information and inspiration from the things in the department (2nd things) and an extrapolation of the possibilities into an envisioned future to imagine what seaweed might become. Third things, in turn, are set within imagined ‘third contexts’, also created by the visitors’ imagination, drawing on numerous factors, such as their memories, past and current perception of reality as well as the future.

The outcome is an individual vision manifested in an idea for a thing or scenario. The ambiguity of not having a finished object encourages visitors to enter a research mode, sharing their questions in dialogue. In this way, co-imagining and enquiring create dialogue and, through

this, a feedback loop for the design and research undertaken in the DoS.

The visitors to the department, both invited guests and members of the public wandering in randomly during open days, helped us shift from active to reflective mode. We employed the approach Stop — Look — Listen and interspersed making with periods of shared reflection, to synchronise and share instinctive, emotional and intellectual discoveries.

As described in the introduction to this chapter, the DoS offered different forms of engagement, varying in intensity, duration, framing, form and outcome. In the following section I will describe these seven tiers of engagement.

1. The DoS team
2. Craft Collaborations and Specialists
3. V&A staff
4. Curated engagement, workshops, lectures
5. Invited guests
6. Museum visitors
7. PhD supervisors

1. The DoS team

The core team of the DoS consisted of a group of interns and myself. Namely: Marcis Ziemins (A. fig. 97), Latvian student at the Design Academy Eindhoven, who joined the DoS in Hamburg and assisted me in moving everything to London. He stayed on in the DoS until June and returned again for two weeks in August. Lenka Dobranska (A. fig. 200), a Slovakian graduate of Chelsea School of Fine Art joined the DoS in June and stayed until the End of September. Elvire Blanc Briard (A. fig. 209), a French student from Limoges with an background in ceramics and interest in Jewellery joined the DoS from mid June to the end of September. Ruyin Liu (Dudu), a Chinese friend and fellow student of Lenka, came into the Department in mid-August to support us until the Oki Naganode was set up. Miryam Pippich (A. fig. 205), a student of mine from Hamburg, joined the DoS from July to the end of September. Spyros Kizis (A. fig. 202), a Greek designer with a Scottish accent acquired at Glasgow School of Art joined the DoS from July to September.

2. Craft Collaborations and Specialists

Pairing of knowledge is most fruitful when it is explored by two practitioners from both sides of a material analogy, when each partner has his own field of expertise and domain. My initial material analogies

informed my choice of craft-practitioners to involve in the project: Moya Hoke, an industrial designer with a background in millinery, Raf Wiesniewsky, the marquetry artisan working for luxury cabinetmakers Linley, whose time spent with us was sponsored by the company, Gulsun Metin, a self-employed tailor and educator whom we paid a small fee to experiment together with us on seaweed.

Moya Hoke (A. fig.123)

For the first month, I invited the Austrian industrial designer and trained milliner, Moya Hoke, with whom I had collaborated previously during Vienna Design Week, to join us in the DoS. Together, we built structures inspired by the V&A David Bowie exhibition and the armoury on show in the V&A gallery devoted to silver. It soon became clear, that Moya was able to spend much more time working on the objects than I could. My role was split between running the studio, which involved a great deal of planning, from ordering the seaweed to devising workshops, to facilitating the day-to-day activities and speaking with visitors, meeting my supervisors, protocolling what was happening, contextualising it within the broader themes I was investigating and reflecting on its meaning. It seemed as though I was constantly zooming in and out, from the micro level of the molecule bridge in the seaweed to the macro level of the museum in society, from mundane tasks such as where to buy superglue that actually works to a systemic mapping of what we were doing.

I was role-hopping between being director of the DoS, designer in residence, researcher, maker, organiser, lecturer, educator, planner, team-leader, author and facilitator, flipping from intuitive hunches to articulated thoughts, from making to reflecting, to articulating and contextualising back to making. So whilst Moya made the wings and hats and built rattan structures and guitar string jewellery, Marcis made a giant mask, experimented with making a seaweed tunnel, made a seaweed tie, and advanced the methods for rattan constructions, I became more and more involved in shaping the ongoing engagement and facilitating the translation from action to reflection rather than making the objects. We discussed in weekly meetings what we had made and where we saw further potential (A. fig. 174 and from 241) and this exchange helped us to learn from each other's mistakes and successes — and ensured we were pulling in similar, if not the same direction

without doubling up our practice projects and lines of inquiry.

Whilst this is a common phenomenon as a studio is scaled up, it raised some challenging questions which became especially clear in the collaboration with Moya Hoke and that I will discuss further in Chapter 5: Who owns and who puts their name to the objects created?

Linley

I initiated a collaboration with the luxury cabinetmakers Linley, aimed at experimentation and developing kelp marquetry. The company agreed to sponsor the time of their marquetry specialist, Rafal Wiesniewsky (A. fig. 130) to co-develop the techniques necessary to produce a box covered in kelp-marquetry. Linley, as a company, the craftsman I was teamed up with and I were enthusiastic about the project. We were certain that seaweed could be developed into a viable material for marquetry use. Rafael came to the DoS twice and we conducted tests together, laser-cutting and glueing the seaweed to boards (A. fig. 124–126), vacuum-pressing it to cover three-dimensional forms (A. fig. 127–133), discussing challenges and opportunities regarding the material. We were able to create a number of promising marquetry samples and I subsequently visited Rafael in his workshop near Carlisle for a further two days of intensive testing. However, we were both increasingly pressed for time, with Raf producing labour-intensive pieces for upcoming exhibitions and trade fairs and me being drawn further into the day-to-day running of the DoS and the production of the Oki Naganode. It became clear that there was not enough time to develop a finished object for the 2013 London Design Festival at the end of my residency and the collaboration was further complicated by questions of the ownership of the IP generated in our collaboration. Who, if anyone, should own the processual knowledge created? I saw the project as a co-creative collaboration to help build a body of material development knowledge that could be added to the DoS knowledge commons I planned to establish. From Linley's perspective, the priority was to create a saleable end product for a high-price market segment and safeguard the knowledge associated with it to ensure a unique selling point. Whilst both viewpoints were understandable and probably negotiable, the lack of time on both sides and the need for prioritisation made us postpone our collaboration. The friction between the paradigms, namely of my community-, ethics- and sustainability-based approach with open source outcomes and that of

Linley's traditional view of innovation and design in the service of industry had slowed our collaborative effort down. It also offered valuable insights into the challenges associated with open innovation and knowledge commons. As stated above, the key question emerging was: Who owns the intellectual property and process-related knowledge?

Gulsum Metin

A third collaboration was with pattern cutter, textile technician and educator Gulsum Metin. I was eager to push the investigation of seaweed as a replacement for textiles, even though my preserving techniques still resulted in a material too reactive to humidity to be useful in everyday applications. Nevertheless haute couture dresses and costumes were thinkable and the fashion collection on display in the V&A inspired my visions of Ophelia-like floating dresses, based on Sir John Everett Millais' 1851–2 painting 'Ophelia', with shells and stones rolled into seaweed to give it the structure and texture of a tangled underwater forest. I had been looking for a collaborator who could add textile craft competence to our team and a friend suggested Gulsum Metin. We visited her workshop in East London and experimented together with her for two afternoons. She showed us how we could sew seaweed and tested methods for draping and ruching the material (A. fig. 173), methods that required a level of skill that we struggled to replicate. We ended up reverting back to simpler, but less impressive techniques. Gulsum was a master in her craft, incredibly knowledgeable and enthusiastic, as well as a good educator, but she was also very busy, making dresses for famous fashion designers and teaching technical courses at Central Saint Martins. Mastery is commonly described as requiring 10,000 hours of accumulated experience, and thus is prone to create a hierarchical situation unless both partners can offer useful competences to each other. With Gulsum, we brought only the material to the table while she held all the craft knowledge. We did not really expand what she already knew, as the seaweed behaved similarly to other types of fragile material she had sewn before, so we became the learners and she the teacher. She was used to being a facilitator for her students and a fabricator for fashion designers, so she did not view herself as a collaborator. Neither did she have a personal interest in any of the new knowledge, techniques or applications we were searching. She charged us a small fee for teaching us and possibly would have been the right person to

make the Millais-Ophelia-like dress based on our specifications and drawings. She interpreted our collaboration as that of an artisan helping a designer realise her ideas.

We only had time to take the first step with the samples we made and techniques we tested (A. fig. 173–177). However, the collaboration with Gulsum and the idea for the dress inspired some ideas for jewellery (A. fig. 33–34) and the covering of purses and cheap plastic jewellery (A. fig. 38, 39, 41) with seaweed. The intention behind these was to transpose the pieces from their original framing as discarded fashion items into the frame of beautiful wearable flotsam. I learned from working with Gulsum that a collaboration works best if both partners have an interest in cultivating the new idea. Alternatively there must be a budget, maybe by a third party, to cover the time and expenses involved in the project so that one partner can be paid as a fabricator if not all partners share a mutual interest in the outcomes of the process.

The question this raises for collaborations is: Who makes the objects and who benefits from them?

Other specialists who supported us at the DoS were Manja van de Worp (A. fig. 229), a Dutch engineer with Nous Engineers, who calculated the structural integrity requirements for the Oki Naganode, checked that our construction met them and gave us the green light for exhibiting it; Lance Mc Cormack, a British panel beater and founder of car restoring company Romance of Rust, who let us roll the long aluminum tubes into rings of various radiuses at his workshop (A. fig. 198), Japanese designer and curator Emiko Oki (A. fig. 174, 3rd from right), who helped us to communicate with the Japanese seaweed suppliers and order the seaweed, Czech photographer Petr Krejci (A. fig. 218, left), who came to the DoS for three days to take photographs of the studio, the people and the pieces, as well as Laetrishka Anthony (A. fig. 46, 54, 67), a model who came to the DoS as a visitor and agreed to model the wearable objects in the Sculpture Gallery at the V&A.

3. V&A staff

The following members of the V&A staff were involved with the DoS residency in 2013. They are listed below in alphabetical order.

- Marta Ajmar, Joint Head with Dr Sarah Teasley of the V&A/RCA Postgraduate Programme in History of Design
- Glen Adamson, Head of Research
- Harriet Curnow, Programme Manager Families
- Rupert Faulkner, Senior Curator Japanese ceramics, prints and contemporary crafts
- Morna Hinton, Learning Department
- Pippa Joiner, Assistant Programme Manager Schools
- Guy Julier, University of Brighton Principal Research Fellow in Contemporary Design
- Ruth Lloyd, Interpretation, Research and Residencies Department
- Matilda Pye, Programme Manager, Learning Department
- Martin Roth, Director of the V&A
- Jana Scholze, Curator of contemporary Furniture and Product Design
- Louise Shannon, Curator of Digital
- Christopher Wilk, Keeper, Furniture, Textiles & Fashion Department

The residency is run by the V&A Learning Department, who co-organise the residency logistics and administration with the residents. They plan structured engagements with visitors, such as open studio days, workshops, lectures and other events. Their main interest is to facilitate the resident's practice and communication with museum staff and make the residency accessible to a broad museum public. They were also interested in the role of the residency within the museum's institutional context and contributed their knowledge and skills related to planning, audience engagement, learning and museum infrastructure to the DoS community.

Based on their accumulated knowledge about the craft of engagement they helped organise and frame workshops within the V&A's established and tested formats. The learning team also acted as match-makers, facilitating introductions to relevant other museum staff, in my case to the textile department to look at some crinoline cages, to Rupert Faulkner, Senior Curator of the Asian Department, to discuss urushi lacquerware and other Asian craft. They also connected me with the technical services and workshop staff, who made the object holders

and display props for the V&A and allowed DoS residents access to and support with their workshop equipment. The workshop had boxes full of disused object holders from previous exhibitions (A. fig. 22) that we stretched seaweed onto and turned into individual sushi holders (A. fig. 147).

During my residency I established ties to the Conservation Department, whose staff enabled me to test the seaweed's colour degradation under their UV lamp, which simulates years of exposure within a few days. We experimented how protective treatments delayed the seaweed's transformation and found out that the treatments did not make much difference at all in the leather-type seaweed, as the UV light still penetrated them from their undersides.

My residency — as research — also connected with the research department, that recognised the potential feedback of information from the residency into research as holding largely untapped potential but had difficulties incorporating it into its running framework. I discussed material dialogue and craft competence with Glenn Adamson (Deputy Head of Research and Head of Graduate Studies at the V&A) and the characteristics of natural materials and the potential scope of residencies with Marta Ajmar (Head of V&A/RCA History of Design Postgraduate Programme. Joint Head with Dr Sarah Teasley of the V&A/RCA Postgraduate Programme in History of Design. Co-Director V&A Research Institute Pilot Project (VARI), supported by the Andrew W. Mellon Foundation). In the six months of the residency we attended Guy Julier's (University of Brighton Principal Research Fellow in Contemporary Design at the V&A and Professor of Design Culture) Design Culture Salons on 'Creating Publics' and 'Design as Activism' as well as a furniture conference organised by Christopher Wilks, to which designers Gareth Neal, Joris Laarman and I were invited as speakers together with curators and conservators from the museum. It continued as an impromptu after-conference party in the DoS during which organisers, staff and speakers continued to eagerly discuss the topics raised over some bottles of wine until the museum closed. These conferences, dialogues and events fuelled our thoughts and conversations in the DoS and we considered them to be our very own, rich educational programme that we discussed while making in the following days. The contemporary department was restructured during my residency and I held long conversations with its staff about how the museum could and should

engage with contemporary issues. I also invited the V&A's director Martin Roth, a fellow German, and was energised by his sincere interest in and enthusiasm for the DoS. We discussed the issues of collecting organic materials and how to enable practice-led research in the museum.

As research through practice develops into a mature discipline the residency space could become a temporal connective node between parts of the institution, the public and the researcher. The latter, as a liminal figure, may be able to ask questions that could not otherwise be posed from within the institution — be it because they are politically charged, speculative in nature or marginal and unconventional in terms of materials, processes, cultures and communities engaged.

4. Curated engagement, workshops, lectures

In May 2013, thirteen design students I taught at the University of Fine Arts (HFBK) in Hamburg, Germany, joined me for a week at the V&A residency studio. I introduced the students to the V&A, the residency space, seaweed and the tools and other materials available in the studio. I explained that there were three broad areas of activity they could explore: 1) Experimenting freely with seaweed, 2) Making the tall residency studio usable in a more vertical, three-dimensional manner and 3) Co-organising an evening event as part of the 'V&A Connects'¹ series — a V&A programme linking the museum and the creative industries — together with Guy Julier, V&A Principal Research Fellow in Contemporary Design, and myself. Within the three areas of activity, I encouraged the HFBK students to work freely and self-organised, like artists in residence within my residency.

The HFBK students discussed potential projects and activities, also with DoS team members, Latvian design student Marcis Ziemins (Eindhoven Academy) and Slovakian designer Lenka Dobranska, and split into three groups. The first group experimented with seaweed in combination with found objects and materials, stretching Japanese kelp over small object holders and wrapping kelp around foam structures (A. fig. 147). A few students created an octopus made of kelp glued to a rattan skeleton, inspired by a comment of mine likening the tall cube of the residency space to an aquarium.

¹ <http://www.vam.ac.uk/content/articles/v/v-and-a-connects/>

The second team designed and built an installation of tall, multipurpose wooden arches for the residency studio, using discarded wood scavenged from the V&A skips and found Venetian blinds (A. fig. 134–136). The arches functioned as drying and light storage racks. Due to their size, they also ensured that the space never felt empty and thus uninviting in the early stages of the residency. Their improvised appearance and the gradual addition of seaweed material samples and experimental objects helped turn the residency space into an environment that was visually the polar opposite of the clean, polished studios often associated with design (A. fig. 213).

The HFBK team helped me and Guy Julier to organise the evening event ‘ALT-Industry’ in the DoS. Our aim was to discuss design as a method for trans-disciplinary bridge building (A. fig. 144) with members of the V&A CreateVoice programme for 16–24-year-olds, students, professional designers, V&A Friday Late² visitors and V&A staff. To support brainstorming, we devised a conceptual game (A. fig. 145, 146) around the task of building designerly bridges between two words for instance politics and maths or healthcare and poetry. We also prepared a ‘seaweed buffet’ of sushi and other seaweed- and seafood-related dishes, displayed on a student-designed seaweed display and individual seaweed-covered decommissioned object holders (A. fig. 147), as well as Welsh laver-pies (A. fig. 137, 141), flash-fried kombu knots (A. fig. 139, 140, 142) and Japanese inspired ‘Kanten’ alginate jelly dessert cubes (A. fig. 138, 143), displayed on seaweed-veneered boards. We hung seaweed bunting all along the hallway leading towards the department (A. fig. 148).

The week with the HFBK ‘students in residence’ proved very productive on a number of levels. The activities and interaction of the students with the residency team and space, as well as the V&A — set in the context of Albertopolis and the London-based creative industries — mirrored my own experiences and practice as a V&A resident. They provided a useful feedback loop, helping me reflect on what happened in the DoS in the context of research. The students operated in a fluid, self-organised way, based on mutual trust, energised by wanting to make the most of their week at the V&A. They were very efficient and we received very positive feedback from the V&A Learning Department

2 <https://www.vam.ac.uk/info/friday-late>

and visitors to our ‘ALT Industry’ event. In my view, the event was quite challenging, tasking us with engaging a very diverse range of audiences. The bridge-building game proved too complex to engage everyone collectively, however, it provided a number of useful prompts for discussion. The seaweed-themed food was a success and complemented the studio look and feel. It also helped me illustrate different aspects of working with seaweed in my introductory talk to the event. As far as the actual practice during the HFBK student visit is concerned, we worked differently than within a professor-student hierarchy. Instead, whilst experimenting with seaweed, we acted, interacted and discussed work more like collaborators at eye level, with equal potential of making new discoveries.

In the context of workshops, we also occasionally tapped into other workshops taking place in the V&A Sackler Centre, for instance paper marbling, and had the opportunity to meet and interact with the workshop leaders and participants, as well as engaging them in experimental seaweed marbling (A. fig. 112, 114). As makers and researchers, V&A workshop participants were ‘primed’ for learning and exchanging skills and knowledge — and thus for engaging with the DoS. To maximise engagement opportunities with this type of audience, as well as other visitors, I established an ‘open door policy’ for the studio. As a consequence people did visit frequently, not just on official open days, attracted by the busy workshop look and atmosphere.

5. Invited guests

I also invited guests who I thought could offer interesting reflections and insights on the DoS practice.

Algæ Researchers / Biologists

Prof. Juliet Brodie

The leading researcher for algal research in the Department of Life Sciences at the Natural History Museum.

Prof. Kaori o’Connor, a senior researcher for Anthropology at UCL has extensively researched and written about culinary uses of seaweed and their importance to society. She told us about a Papua Neuguinean tribal dance in which the dancers wear fresh seaweed, as well as the symbiotic relationship of cockle shells with seaweed of the species porphyra. From her we heard about failed Scottish attempts at turning seaweed

into tweed during the second world war and the successful burning of seaweed to gain potash, a key ingredient in ceramic glazes. She sent us some images of MON, markings of Japanese Lords that would also be used to mark the seaweed that was sent to the emperor. Based on this, we began to work on our own DoS MON (A. fig. 276) and on pressing patterns into seaweed (A. fig. 70–72, 74). She also gave us practical advice on Welsh markets selling fresh laver for laverbread, a Welsh delicacy.

Prof. David John

Scientific Associate, Department of Life Sciences, Natural History Museum, currently involved in sweet water algæ research.

Dr. Brenda Parker, Department of Biochemical Engineering, University College London. At the time of the residency Dr. Parker worked for Innovation in Crops (InCrops), a network based at the University of East Anglia.

Craig Rose, Seaweed Health Foundation

The Seaweed Health Foundation is a non-for-profit organisation set up to promote the health and culinary benefits of seaweed products. Craig shared his knowledge of the rocky shore zonation (which types of seaweed grow where) and offered to bring some freshly collected Scottish seaweed.

Makers

Textile artists Emma D'Arcy, Karen Spurgin and Penny Walsh from AO-Textiles who ran a workshop in the V&A's Sackler-Centre tested indigo-dyeing and marbling kelp and took a piece away with them to embroider onto it.

Juliana Sissons

a knitting artist and former V&A resident, based in Brighton. She regularly teaches pattern cutting in the Sackler Centre. She visited the Department of Seaweed during LDF and we discussed the possibilities that arise from working with seaweed. Some of the pieces we made in the Department prior to knowing Juliana Sisson's work resonate strongly with the pieces she produced during her residency, which was inspired by armour and later exhibited in in the metalwork galleries alongside armour. Juliana explained that she was teaching two or more days a week when she was a resident at the V&A which made it difficult to produce a new body of work.

Mary Butcher OBE

is a basket weaver and former V&A resident. The RCA library holds a number of her very inspiring catalogues. Interesting, structurally experimental baskets, featuring mainly cane. However, Mary Butcher also explored incorporating seaweed. Showing her a mask Lenka made in the first three days of the residency, I asked Mary whether a similar complexity could be achieved as easily with traditional basketry techniques. She stated that it would be much more difficult and would require long experience. She told me that the V&A Residency used to involve much more teaching, which meant that it was difficult to utilise the time to develop one's own work. Despite her OBE for services to basket-making, Mary now hardly has time to make baskets as she is making a living by teaching.

The conversations with both former residents raised a potential weakness of a residency mainly attached to a learning department: The focus lies on the resident offering another 'output of' rather than additional 'input to' the museum. As a consequence the museum judges the success of its engagement with the resident on that output rather than using the input to contribute to the development of the museum.

Artists and Designers

Jürgen Bey, Head of Sandberg Institute at Rietveld Academy in Amsterdam

Clare Brass, Head of Sustain RCA

Prof. Daniel Charny, Professor in Kingston University

Tom Dixon, director of product brand Tom Dixon Design LTD

Gabi Klasmer, artist and senior tutor at the RCA

Peter Marigold, product designer mainly focussing on limited edition furniture pieces

Marin Sawa, researcher at Imperial College, designer working including micro-algae in reactive textiles and jewellery.

Sarah van Gameren of Glithero visited us with a group of MA students from the RCA

Rachel Wingfield & Mathias Gmach of design studio Loop PH

Politicians

Dr. Hill, State Secretary of Hamburg, Germany, visited the DoS on a state visit to London. He suggested a future collaboration for the 25th anniversary of the partnership of twinned cities Hamburg and Osaka. Stefano Weinberger, German Embassy, Cultural Attache

6. Museum visitors

Every other week, the V&A organised an open studio day for the residency studios, including the DoS. Opening the studio gave us practice in articulating what we were doing and the visitors' reactions enabled us to gauge the impact of our work — their input was an invaluable feedback loop for my research. Visitors' questions enabled us to see the processes in which we were deeply immersed from another perspective and their curiosity refreshed us: Through visitors' eyes our work became extraordinary again and we were briefly jostled back into a world where seaweed is not ubiquitous.

The input visitors gave us informed our choice of materials and methods. We bought the books of the artists they associated with our work. We researched visitors' beach memories and discussed with them their visions of what could be made from seaweed, also within the DoS team. When we were asked what material we were working with we never answered straight away but asked back: Please, take a guess before we tell you? Silicone, latex, plastic, coated fabric, something organic, like skin or a membrane, parchment, reptile skin, rubber or the hardened sap of some other plant were among the answers we received. The associations informed the aesthetics and analogies we worked towards.

In the DoS we created things that helped connect associations and memories of seaweed with the material's future potentiality. Since the material kelp does not have a culturally established reference system, the visitors' visions of future seaweed objects relied heavily on the information contained within the things in the DoS. Therefore, we aimed to make things that conveyed 'seaweedness' whilst being ambiguous enough in function and context to give free reign to speculation. Some of the Asian visitors to the DoS had immediate associations with the kitchen, which became clear when they, as a matter of course, broke off pieces of dry seaweed and ate them to sample their taste and quality, or stated that they were suddenly getting very hungry. To other Asian visitors the familiar material was disguised by its unexpected craft context and only revealed itself when we spelled out what it was, a typical conversation being: »What material is it?« »Seaweed. Algae. Kombu (or Haidai for Chinese visitors)« — look of disbelief — »Kombu? Really?«

European visitors' experience of seaweed was most often related to being in nature: smelling algae washed up on beaches or entangling one's legs while swimming. These sensual experiences were shared

with us as anecdotes and served as personal starting points for discourse and reminiscence as visitors began to imagine things made from seaweed.

Outside of the kitchen, seaweed has little provenance as a material for making. It is not that seaweed has never been used as such. Numerous manufacturing and craft processes rely on seaweed derivatives. To name but a few:

Agar Agar, the jelly-like substrate to grow bacterial cultures on and thus a key medium in any wet lab is made from seaweed. Similarly, it is being used as a resist in the textiles industry and as a thickener in paper marbling that makes the ink stay on the water's surface. The seaweed derivative alginate is used by dentists and modelmakers worldwide to make non-toxic body castings and potash, essential for making ceramic glazes used to be made by burning seaweed. In all of these applications, seaweed is rendered invisible in the process — exceptions being a few lesser known historical examples of ancient aboriginal craft such as a Tasmanian water carrier shown in the British Museum (fig. 30) and Native American and Aboriginal baskets (fig. 31). This means that visitors had no established repertoire of imagined outcomes for the processes they witnessed when they entered the DoS. To understand what we were making and how it related to their sphere of knowledge, visitors had to imagine where this was going by actively engaging with what they saw and constructing their own meaning in a process akin to Donald Schön's description of the process of design:

»Design worlds are constructed, as we have seen, in the course of a designer's seeing-moving-seeing. But designers also construct their design worlds through their transactions with the site, the available materials, the design task, and the prototypes they bring to the design situation. They do this through processes of appreciation, by which I mean both their active, sensory apprehension of the stuff in question and their construction of an order in that stuff which includes the naming and framing of things, qualities and relations.« (D. Schön, 1992, p. 22)

There was no right or wrong way to work with seaweed, no master craftsman with the answers, no contexts in which seaweed might be appropriate or inappropriate. To the contrary, visitors had only limited



fig. 49: Associative map of things created in the DoS. Colour-coded by processual similarities. Chronological from top to bottom. Naga kombu (turning yellow) on the left, Ma kombu (turning brown) on the right. All figure numbers in this diagram relate to Appendix B.

information of the properties of seaweed — seaweedness — or the possibilities of working with it. The things we made enabled the visitors to deduct material properties and made accessible all phases of the design process, from sketches to samples to processes to larger constructions. There was a sensorial and processual richness in the DoS that enabled visitors to engage on multiple levels through things, materials, processes and the interaction with the team. These things were intended as instruments for visioning and reflection, as materialised thoughts we all could correspond with and that would ignite a dialogue between us. As visitors engaged with the materials, tools, processes, sketches, models, samples and things in the studio, they began to associate and relate what they saw back to their own world. They enquired about the properties of the material, the reasons for using it, the environmental implications and, in turn, recommended artists to look up, such as American sculptor and printmaker Lee Bontecou, Russian Constructivist Sculpture. Visitors told us about traditional Danish seaweed roofing (fig. 32) and a contemporary re-interpretation (fig. 33), about the material qualities of Tasmanian bull kelp. They gave accounts of where to find suitable seaweed around the British Isles and revealed that major food brands were halving the salt content of their ready meals by adding seaweed which also enhances the flavour of their product — whilst asking seaweed suppliers to sign confidentiality agreements to avoid the bad press and reduced sales they believe would come about if people realised they were eating seaweed.

DoS visitors imagined concrete future applications for seaweed and we considered their potential and implications together: raincoats, roofing, wound dressing, craft material, architectural applications, insulation, packaging, vegan leather, marine veneer, fertilising flowerpots, textiles, jewellery, masks, puppetry, stage sets, costumes and replacements for everyday plastic items.

Every object we considered led in turn to contextual reflections on a meta-level. What would it take to make this? How would the material need to behave, or what would it need to be paired with? How would the things affect a local community, or address a global shortage of resources? How would it affect the marine eco-system? Who would have an interest in making these things, whom should we connect with to make it happen?

We did not have the answers to all the questions, but by jointly

considering seaweed things with visitors, team members or workshop participants, we were beginning to envision futures we had not thought of before. The input helped us reflect on our work and by imagining future objects we began to envision a future world.

The pairing or interweaving of individual visions suggests further trajectories of thought and process and is influencing the trajectory of a vision or, if not, clarifying the reasoning why something should not change. This impetus to justify and explain what I am doing and why — Why are we not making raincoats? Should we? Could we? Could someone else? — gives myself as a DoS insider a glimpse outside the system and helps me assess, shift and evolve my own vantage point. The dialogue partner, in turn, envisions a future with seaweed and can immediately ask the questions that arise in conjunction to the idea.

7. PhD supervisors

My PhD supervisors Jana Scholze (then V&A curator of Contemporary Furniture) and Hillary French (then Senior Tutor of Design Products at the Royal College of Art), as well as advisors Gareth Williams (RCA) and Louise Shannon (V&A) helped to trigger another kind of reflective mode when they visited me in the DoS. They asked me to explain what I was doing in relation to research and encouraged me to reflect my findings simultaneously in writing, as well as in dialogue and making. Our conversations helped me to take the time to zoom out and look at my practice through the lens of a researcher.

4.2.3. THE PRACTICE: OUTCOMES OF THE DoS RESIDENCY

Every design process has outcomes on multiple levels. By perceiving them all as important outcomes of in their own right, collaborative practices can consider which aspects to share with whom.

Outcome 1: Knowledge

The work with seaweed at the V&A gave me a better understanding of the potential of the marine material. I was able to connect theoretical expertise from a wide range of disciplines with process-based knowledge developed by the DoS team, contributors and visitors to the V&A studio. These biological, technical, processing and manufacturing insights

helped me and my contributors to develop the material further and work towards establishing a seaweed-specific craft methods.

Outcome 2: Infrastructure

Based on the insights I gained from the residency I intend to establish an infrastructure to enable a community of practice to engage in an ongoing process of practice-based speculation about a future scenario involving seaweed. This should include the community of individuals and organisations that contributed to the DoS at the V&A, as well as an information infrastructure suited to collating, archiving and disseminating the knowledge gained about kelp and related processes, applications, values and visions. In this way, the DoS would not be dependent on the physical context and infrastructure of the V&A and could continue to develop beyond the residency, as a case study for trans-disciplinary, practice-based research and collaboration. The infrastructure concepts generated in the V&A residency might thus also be transferable to other fields of inquiry.

Outcome 3: Things

Together with the DoS team and community of practice, I created a wide range of seaweed-based things. I am defining things as the outcomes of a human-material interaction, based on the Latour's actor-network theory involving 'collectives of humans and non-humans' (Latour, B. 1999). The things created in the DoS (fig. 52) are not objects in the traditional sense, in which most of them would be considered unfinished. The things are focussed on exploring material characteristics and potential techniques, suggesting and enabling speculation about future applications. They also illustrate how we interacted with the material, showing which processes and interventions would support and enhance the material qualities of seaweed and which would not. In addition, the things created in the DoS are representative of the collaborations they resulted from, embodying the knowledge and skills contributed by the parties involved, based on dialogue at eye level.

Outcome 4: Values and Visions

The fourth kind of outcome I believe I gained from the DoS residency at the V&A was an enhanced, collective — and therefore more diversely and extensively articulated — vision of a future in which seaweed plays

a role as a material for design, as well as the effects this would have on other disciplines and domains. As described above, I feel that open dialogue, also taking into account the ‘voice of the material’ played an important role in this, as well as encouraging diverse views and forms of expressing of those views. The diversity of outcomes of the DoS, including the vision expanded from a single perspective to a field of visions, also allowed me to reflect on the values underpinning them — my own, as well as those of my contributors. This is important to me because I believe that the participative co-creation of future scenarios and visions should be based on shared values. This was largely the case during the V&A residency, which was of great benefit, given the diverse range of ‘publics’ (Dewey, 1927) contributing to our work with seaweed, or ‘matter of concern’ (Ehn, 2008). It enabled us as a DoS community to categorise scenarios as desirable and undesirable, rather than merely probable and possible.

Three different kinds of things

In this section I would like to return to the third type of residency outcome – things – and highlight how they embody the considerations, interactions and explorations leading up to their making. My aim in this is to show some of the material insights we gained. More so however, how the degree to which the things are resolved affects the extent to which they encourage speculation. Based on the experiences of the DoS residency, I am advocating ambiguity rather than finish. I am also hoping to show how, in my view, the context in which the things are displayed affects how they are viewed — highlighting the benefits of displaying objects in the context in which they were made, and by extension those of showing process as well as products in a museum context. The examples are a series of hats between ‘hatness’ and ‘seaweedness’ and the large-scale Oki Naganode sculpture I created with the DoS team for the London Design Festival 2013.

To contextualise the examples, I believe it is helpful to categorise the types of things generated in the DoS. They can be grouped into three typologies:

- Probes, experiments and material samples (e.g. A. fig. 9–18)
- Things suggestive of areas of application and cultural artefacts, such as hats, collars, purses, wings, ties, models, bowls, tests (A. fig. 20–53)

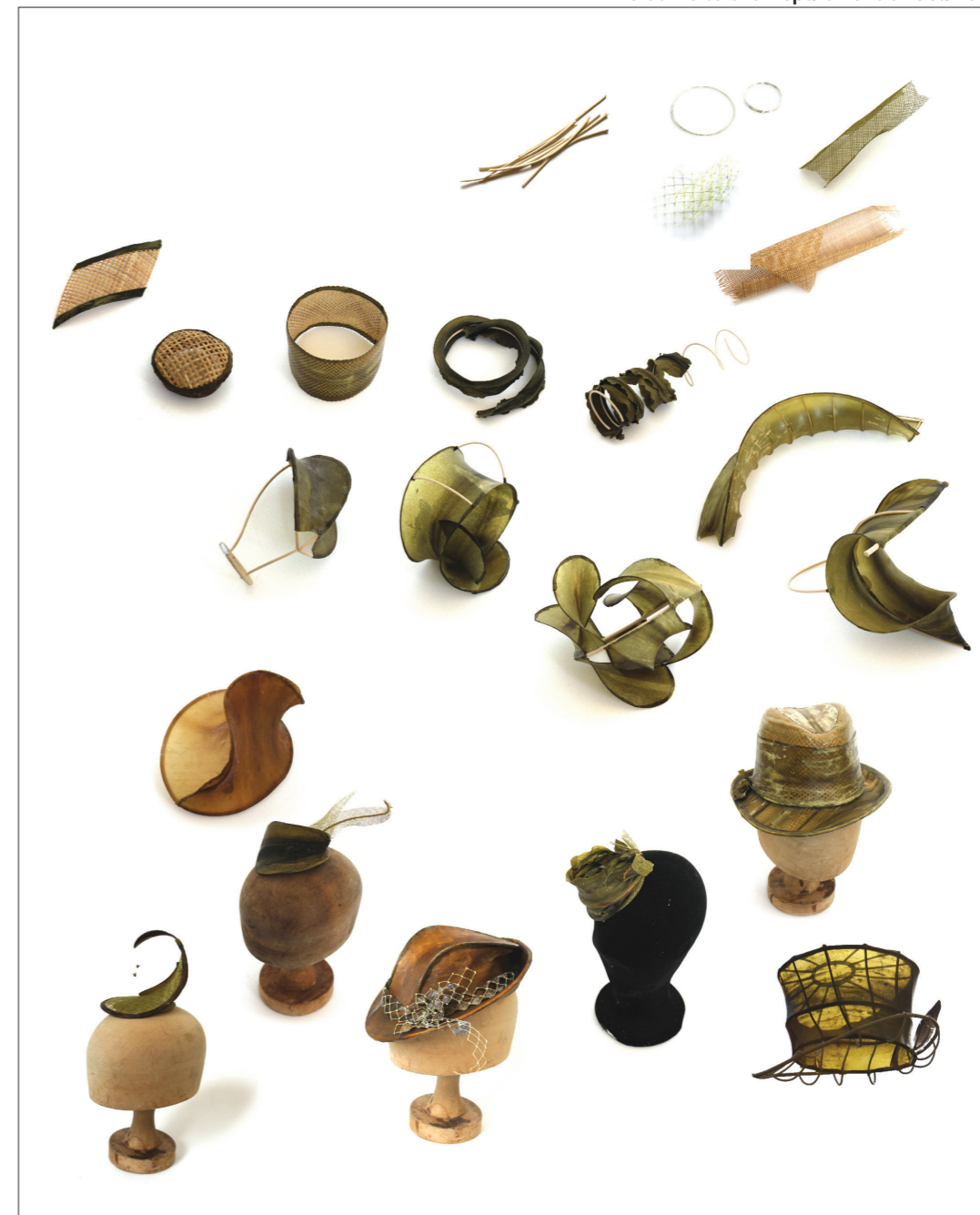


fig. 51: Probes, materials and samples towards making hats

- Oki Naganode, a large scale seaweed sculpture (A. fig. 235)

Probes, experiments and material samples

The probes, experiments and material samples we made in the DoS remained unfinished and sketch-like, in a state closer to material than object. They served two main purposes: Firstly, harnessing information on methods of making, object typologies, techniques and material combinations to fuel further processes of making and reflection. Secondly, helping us share the material qualities of kelp, its character and associated processes with contributors and visitors. The things’ unfinished am-

biguity, suggestive but non-applied, was deliberate: They provided answers without forcing us to finalise them as objects. As visioning lenses they accurately conveyed aspects of 'seaweedness' whilst leaving scope for speculation about future contexts of use and potential finalised objects within those contexts.

To give one example: The solution I use to preserve seaweed in a flexible state makes it hydrophil, contracting and expanding reactive to humidity. We actively explored this by stretching two types of seaweed over frames to make drums. One was 'forced' Ma kombu: farm-grown fast in a sheltered aquaculture bay, the other 'free range' Ma kombu: naturally grown in a kelp-forest exposed to currents and natural selection. The naturally grown Ma kombu felt much thicker and when both pieces became 'drums' their differing mate-



fig. 50: Two hats, the left delineating hatness, the right, seaweedness

rial properties also became audible: The forced kelp sounded like a sheet of plastic. The naturally grown kelp boomed like a leather drum skin and audibly reflected humidity changes through a change in tone and pitch. The naturally grown kelp was stronger and had more character. Suddenly the linguistic metaphor of the material's voice did not seem out of place any more.

From Seaweedness to Hatness

The second typology of DoS things was much closer to recognisable objects with a more defined function. Function suggests suitable materials, manufacturing methods, forms and aesthetics, as well as ways of using the object and contexts of use. Once the context is decided, the design process continues until an equilibrium between the interconnected factors is reached and they are in tune with one another, resulting in a 'finished' object. Changing one variable immediately influences the others.

In the DoS, together with Austrian designer-milliner Moya Hoke we investigated the equilibrium of 'hatness' and 'seaweedness', by creating an iterative series of things. In this, we were aware that simply recreating an object in another material would make it a pastiche and neither do justice to the object, nor to the seaweed we employed. Which aspects of seaweed and which hat-like qualities would create a balanced hybrid of the two?

The reference object into whose DNA we slipped the 'seaweed gene' was a Trilby-type felt hat. In the object-construct Trilby, wearability is the defining feature of its function (protect/embellish) and points towards an intended physical context (headwear). Its materiality is defined by felt-ness and defines the hat's making process and formal aspects. It also relates to the other part of the physical context, namely the environmental factors the hat protects the head from. The form of the Trilby is defined by hat-ness and felt-ness. We aimed, on an object level, to balance hatness — and with it a certain object- and context-recognisability — with seaweedness, to create boundary objects that could almost qualify as hats and others, that clearly were hats, but did not acknowledge the seaweed's specific traits. (A. fig. 55–66)

Even as finished objects the seaweed hats still had an element of flux to them that Ingold (2013) attributes to 'things'. They were still 'in

the throwing' (p. 94) and naturally transformed themselves throughout the following weeks and months, even without our intervention: During the drying process the tightening seaweed pulled the rattan millinery frame into another shape. Depending on which type of seaweed we used, the dark green either faded to a leathery brown or yellowish white. The brown objects then bloomed with a white residue — the fatty acids from inside the kelp — that we would sometimes attempt to remove or treat with varnish. These aspects, despite the reduced ambiguity of the hats, still generated feedback. Specifically, the ephemeral or permanent appearance of seaweed depending on how it is processed, highlighted by extension the human desire for, and curatorial requirement of permanence in objects.



fig. 52: *Oki Naganode* in the V&A, 2013.



fig. 53: *The faded Oki Naganode* at Artipelag Museum, Stockholm, Sweden, 2015

The Oki Naganode: not a seaweed floor

During the 2013 London Design Festival, I extended the reach of the Department of Seaweed from its studio in the Sackler Center into the Victoria and Albert Museum's galleries by means of a sculpture — the Oki Naganode. Initially I had thought about recreating sections of the V&A's wooden parquet flooring in seaweed veneer. I looked for possible locations and made some sketches and visualisations when I realised, that, to create a functional seaweed floor, I had to veneer the seaweed onto a wooden structure and apply coats of lacquer to strengthen the surface, resulting in a muted artefact in which the seaweed was so much in service to a function and a paradigm — the wooden floor — that it could not communicate its unique features: its flexibility, its strength, its translucency and its naturalness.

Furthermore, a wooden floor, albeit one from seaweed, was, as an object, a full stop, not a colon: It would give the material a function and context and not raise these as questions. It was too finished to encourage open-ended speculation. I worried that people would say: »Ah, a seaweed floor, interesting!« and not continue to think in multiple directions as to what seaweed could become. Seaweed parquet simply lacks associative power: it is on one hand too literal, already answering all questions as to what function it might fulfil, and on the other hand does not offer enough information about the seaweed's properties and possibilities — information a visitor needs about an unknown material to be able to conjure a visionary, third thing in this mind.

The backtalk (Schön, 1983) of the seaweed parquet idea revealed to me what the essence of the installation ought to be. To be rich in associations, the installation needed to do the opposite of the seaweed parquet: explicate the features and possibilities of working with seaweed while not being tied to one function and context. I adopted a process of 'material-led design' more akin to Gutai and Wabi Sabi principles, like a portrait painter trying to embody the essence of his sitter's character. I aimed to create with and for the seaweed: the rhythm of the blades was to define the shape, the drying process to create concave lines. Or, in a product design context, I worked in service to kelp, rather than just using it. Seaweed was not only my material and research method, but also my client, in the sense that I wanted to find the best possible way of showcasing its unique features. I employed, in Giuseppe Penone's (1997) words, »thought nestling up against matter« (p.83-109) and considered

every aspect of the task with the essence of seaweed in mind: the location of the installation, the material pairings, the colour-scheme, the lighting of the object, its rhythm and structure, its micro- and macro-aspects of form. I wanted to create a poetic lens.

From a range of possible locations, I chose a large hallway balustrade at the top of a staircase and in front of a clear, lead glass window measuring 6 x 4 meters. A plane tree's foliage modulated the light falling through the window behind the sculpture, giving it a fluttering, natural glow reminiscent of light breaking on a water surface. In daylight it shone through the translucent seaweed invoking associations of a floating creature. In the evenings, the sculpture would appear more solid, like an amphibian, evoking associations of a solid body that a few visitors even experienced as rather sinister.

Sometimes I had to 'impose' a feature on the material for structural reasons: the aluminium rings ensure the structural integrity and modular fit of the sculpture's parts and should not be deformed by the seaweed. A hidden inner structure absorbs some of the gravitational force. Most other aspects of the sculpture I decided in dialogue with the seaweed, including the name: Oki is the Japanese word for big, but can also be a Japanese first name and spelled differently stands for the open sea. Naganode combines the name of the seaweed 'Naga', which is also the place in Japan the seaweed came from, and the English word 'node' — knot. In combination, Oki Naganode translates into 'Big Seaweed-knot'. However, 'node' can also be read like a Japanese syllable, with an emphasis on the 'e', making the name ambiguous: Is Oki Naganode the name of a secret collaborator? Or is it the name of the sitter whose portrait we are looking at? — In some sense, both statements are true.

On a technical level, the Oki Naganode is a modular skin on frame structure with a Naga seaweed skin. The blades of this type of seaweed have a width of up to 12cm and are cut to 90cm lengths. These dimensions form the basic structural rhythm of the sculpture. Its colour is that of Naga seaweed: initially dark green, then fading to a yellowish-white within a few months as the chlorophyll degrades.

The frame is made of rattan modules connected with five standardised sizes of aluminium rings. The rattan forms a linear framework between the aluminium rings. Blades of seaweed are glued between the rattan skeleton, using their full width. The aluminium rings are joined to one another, to give the appearance of continuous rattan lines across

all modules.

The diameter of rattan is proportional to the size of the modules, ranging from 2mm to 5mm. The rattan diameter had to be thin enough to allow the drying seaweed to pull the framework into a concave, self-tightening form — and thick enough to prevent extreme deformation of the module. Larger modules have to be able to carry the weight of the attached smaller sections.

The pull of the drying seaweed created an organic overall appearance, what Ingold (2013) calls »sinuous forms — whether of the musical phrase or the flying noose — that are suspended in the current of on-going activity.« (p. 102) The Oki Naganode looks more grown than made, in a process of conceptual autopoiesis after months of making. A hidden inner structure carries some of its weight and makes the Oki Naganode appear to defy gravity. This intervention felt appropriate, like a scaffolding addressing the specific conditions of a space with much more gravity than the seaweed's natural environment.

The concept of seaweed as a material for making was so surprising that most visitors were not able to guess what the material the sculpture was made of. Even when reading that it was made from seaweed they sometimes still assumed that it only depicted seaweed, since visually, it had formal associations to something growing and the aesthetic resemblance to algae or corals. In my view, the Oki Naganode was a truthful depiction of the material's character and my dialogue with it. It was also an abstract artefact defying established object categories and functions. Nonetheless, the finish of the object and its associations to fine art instead of product design appeared to imbue it with an awe-inspiring authority as an artefact rather than making it conducive to speculation. Furthermore, its presence in the gallery, rather than in our studio stopped visitors from feeding back their impressions to us. Even if they did speculate, we rarely found out about it, disrupting this feedback loop into our practice.

The Oki Naganode proved that it is possible to make large structures from seaweed. In my view, it has become a poetic lense — an installation that was subsequently shown at Artipelag in Stockholm and will be exhibited at Tilburg Textile Museum in the Netherlands in the summer of 2017.

SUMMARY OF THE DoS RESIDENCY

I concluded that finished objects, even when conceived and crafted as poetic lenses, enriched with their own material character, make the viewer aspire to understand what they are, why they exist, what they mean and possibly unpick how they were made. All of these inquiries are valuable but temporally directed towards understanding the past rather than constructing a future. Furthermore, if there is no framework in place enabling viewers to communicate their reflections, their thoughts cannot feed back into the ongoing inquiry. The dialogues and reflections in the DoS studio seemed to project into the future because we shared unfinished, ambiguous things and processes. They were associatively rich, explicated the unique features of the material whilst not constraining the imagination by being too closely tied to specific functions. This 'scaffolding' triggered the speculation. The DoS nature as an active workshop with participants engaged in making created the opportunities for dialogue, the articulation and sharing of the visions and offered visitors a deeper engagement in the CoP. This turned the department into a multi-vocal environment in which we constantly translated the insights from making into language, igniting dialogues that sparked reflection which then fed back into making and formed new knowledge.

We bypassed established craft hierarchies by working with a yet uncontextualised material. Our presence, a flat hierarchy and a subjunctive mood in all discursive modalities — dialogical, gestural, verbal — (Ingold, 2013, p. 104) enabled participation in the Department of Seaweed. What does this mean for museums, such as the V&A, that are clearly hierarchical institutions, and at the same time aim to foster participation and involvement from a broad and inclusive range of publics?

I believe that as research through practice develops into a mature discipline, residency spaces like that of the DoS at the V&A could become temporal connective nodes between parts of the institution, the public and the researcher, who, as a liminal figure is able to ask questions that could not be posed from within the institution, be it because they are politically charged, speculative in nature or marginal and unconventional in terms of materials, processes, cultures and communities engaged.

5 CO-SPECULATION: FROM STUDIO TO METHOD

In this chapter, I will discuss key insights from the DoS residency at the V&A. I will then use the residency as a case study to outline a possible method for co-speculation by Communities of Practice (CoP) and a wider field of contributors in a museum residency context. In its development I have considered positions towards design from the fields of Critical Design (CD), Transition Design (TD) and Participatory Design (PD) and connected them with insights from participatory museum practice (Simon), dialogue (Bohm, Sennett), action and reflection (Schön, Simon, Glanville), infrastructuring (Karasti, Björgvinsson), materiality and making (Ingold, Sennett). My aim is to demonstrate how this method functions, to explain its underlying value-based principles, leading to the concluding chapter 6, in which I will give an outlook on its potential physical and virtual infrastructure components and dimensions. Firstly however, I will outline a number of key insights from the DoS, grouped under the following headings:

INSIGHTS

- 5.1 The Place
- 5.2 The People
- 5.3 Communication
- 5.4 Freedoms
- 5.5 Frictions
- 5.6 Commoning

I have not specifically listed Practice, since this has been covered in Chapter 4 and is also discussed as part of the Freedoms, Frictions and Outcomes sections below.

5.1 THE PLACE

How did the Victoria & Albert Museum as a place contribute to the success of the DoS residency? It did so because it is set in a dense cluster of museums and universities of South Kensington, London. It is a unique area of education and culture, centred around Exhibition Road, that

was developed specifically for this purpose following the Great Exhibition of 1851 held in the adjacent Hyde Park. Queen Victoria's Royal Consort Prince Albert had a leading role in this project, which led to the area's nickname 'Albertopolis'. The density and reputation of the institutions in Albertopolis attract a vast number of British and international scholars, students and visitors. Access to some of these diverse publics via the V&A proved a fertile source of feedback, through discussion and contributions to the activities of the DoS. Examples of this were the input on kelp species and their physiology I received from the phycologists of the Natural History Museum, cultural links relating to historic aboriginal use of seaweed from an anthropologist from University College London, as well as the many insights provided by V&A staff and visitors.

5.2 THE PEOPLE

Working with the DoS community of practice was an extremely enriching experience. I believe this was in large part due to the flat hierarchy of the DoS, embracing the diversity of backgrounds, knowledge, skills and perspectives the DoS team and our contributors brought to the department. To a large extent, it enabled us to converse, work and speculate at eye level. We were well looked after by the V&A learning department staff, who helped in organising public engagement activities, as well as supporting the logistics of running the DoS and liaising with relevant contacts in other museum departments. Other staff were also very supportive, up to the level of V&A director Martin Roth. What surprised me was that, apart from contributing seaweed-related activities to existing public engagement formats, we had little input into the museum as such. There was little contact with the V&A research department, which I had thought would be a natural match for a practice-based design research CoP, possibly even to the extent that the V&A research department could run or co-run the residency space with the learning department. However, following the residency, I was invited to contribute to the V&A Research Institute's (VARI) investigations into embodied cognition.

5.3 COMMUNICATION

I investigated the differences between communication taking place in a process- and practice-based residency scenario such as the DoS versus

that of a traditional, curated, object-based exhibition. I was interested in how individuals and groups in the fields of design, culture, the museum and its visitors interact, as well as the flows of information, feedback and decision-making processes between different tiers of related organisations and systems. On the following page are two of the diagrams I drew up to visualise my thoughts on the multi-tier, multi-vocal and multi-directional dialogues taking place within the DoS CoP, the residency in the context of the V&A, as well as with contributors and other publics.

Patterns of Communication

To enable me to understand which flows and exchanges of information take place in the DoS residency, as compared with other residencies or museum exhibitions, I drew up two diagrams (fig. 55) that I will explain below.

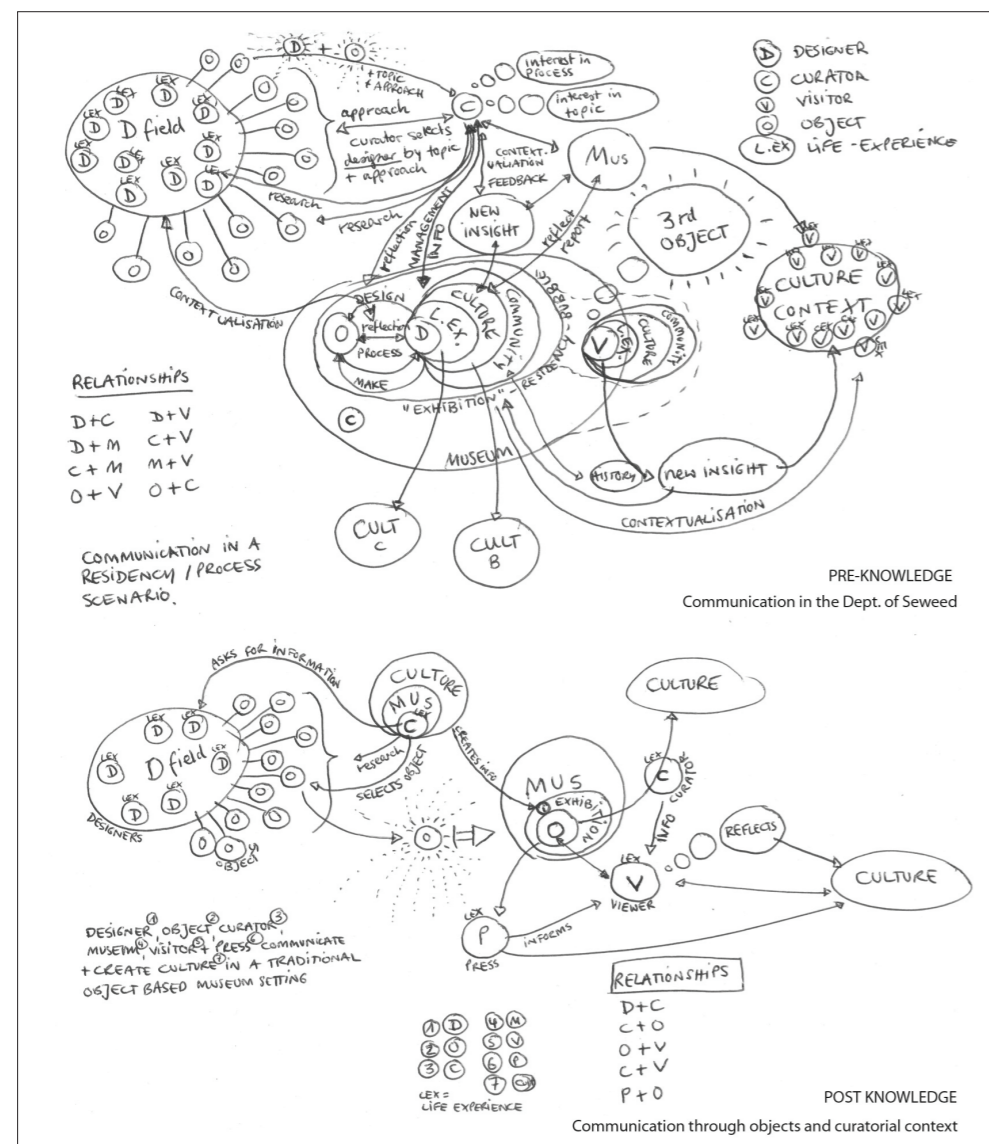


fig. 54: Patterns of communication diagram: Dos (above) vs. object based exhibition (below)

The fundamental difference between them is that the bottom diagram depicts a 'post-knowledge' scenario and the top, DoS-based diagram illustrates a 'pre-knowledge' scenario. The former is concerned with communication relating to a curated exhibition of objects and the latter with communication in the practice-based search for new insights.

The bottom diagram depicts the strands of communication in an exhibition of curated objects, the format of most of the exhibitions my Cowbenches have been shown in. A curator (or curatorial team) (C), often embedded within a specific museum (MUS) reviews the field of design and selects a specific object (O) from a specific designer (D). The object is displayed in the context of a specific exhibition in the museum, combined with other objects and accompanied by contextual material, often in written form, that is created in correspondence with the designer.

The designer's and the curator's knowledge and life experience (L.EX) are embedded within the objects and their curated museum context. The arrangement and the accompanying material and can be read and interpreted by the viewer (V) of the exhibition. The viewer also brings his/her life experience (L.EX) to the museum and reflects on what is on show in relation to his/her prior experiences. Both the press (P) and cultural context inform the viewer's interpretation of what is on show. The strands of communication are predominantly one-directional and hierarchical, from expert to learner.

The life experience of the viewer does shape his/her own interpretation of the exhibition, but is not influencing its format or impact for everyone else. The designer is not present in the museum and neither benefits from the viewers' feedback, nor is able to partake directly in the multiple dialogues that arise from the exhibition. Audiences are presented with a complete object in a complete exhibition setting, neither of which they can influence with their life-experience and input. The reflection triggered by the exhibition is in most cases not fed back to the museum. Methods such as visitor questionnaires provide feedback loops for the museum but are often centred around the viewer's general experience of /in the museum, rather than on collecting concrete input on how the museum — or in fact the designs on show — function or ought to function.

The patterns of communication in the DoS are fundamentally different, as depicted in the top diagram. Here, the curator (or curatorial team) (C) selects a designer (D) from a field of practice (D field), who

then brings his/her practice into the museum.

The designer researches the museum and applies for the residency, proposing a concept for the space and time in the museum. The curator researches the designer and, if the designer's application is accepted, both parties decide on an approach together. The curator liaises with the museum and helps the designer organise the residency. In the case of the DoS, the 'curator' is part of the Learning Department, acting as a facilitator rather than an author, in a similar role change to that discussed regarding Participatory Design in chapter 2. Right from the outset, learning and flows of information are multi-directional. Both parties transmit knowledge and learn about each other.

The designer then enters the museum as a resident, bringing processes, sketches, tools, materials, things, objects, life experience, a cultural context, a community — in short — his/her entire studio and self. All this temporarily resides in the residency space, contained and protected within the museum but not completely curated by the museum. This makes the residency a liminal space in which making, dialogue and reflection cross-fertilise and can be shared with a community.

Residents continue their dialogue with the curator and the museum community. Visitors to the residency understand its content as part of the museum and reflect upon what it means within the institution. Because what they see is not a finished piece of design, but processes and things in flux, the viewer is imagining what is being made in the DoS: a future object, that, in this diagram I call a 'third thing'. His/her life experience and the multi-sensorial experience of visiting the DoS inform this vision. In addition, the presence of working designers in the studio creates opportunities to voice the vision and initiate dialogue. Because the things being made in the DoS are still in flux, they are malleable. Consequently, input and influences entering the DoS can be directly translated into new processes and things, or raise questions for further investigations.

Every visitor and every dialogue may offer input to the DoS, inform and influence the resident. In turn, the resident informs and influences those around him, and by extension the wider cultural context that enters the studio as a community of practice and a viewing — and contributing — public. This also includes museum staff, thus potentially affecting the development of the museum itself.

5.4 FREEDOMS

The DoS became a simulation of a future scenario in which seaweed gained currency as a sustainable material for making. It became a test bed for speculative practice in a museum context. The residency provided freedom by suspending some of the rules of external systems, such as those of the market economy, or the V&A's internal rules and regulations for employees. The designer in residence can become something akin to a court jester, speaking from within the museum without having to abide by all of its rules and regulations or being bound to its hierarchies, object selection criteria or modes of communication.

Within the residency micro-system, the resident can establish a personal interpretation of the museum, aided by behind-the-scenes access to the expertise, collections and structure of the museum. Residents can also connect with the publics of the V&A: visitors, makers, academics, museum specialists and other guests. Towards external publics, the V&A setting adds credibility and weight to the resident's voice, though it is not the V&A's official voice.

The liminal position of the residency thus makes it an ideal place for near non-hierarchical CoP experimentation and speculation, for discourse and debate, for practice-led research and development, for trialling and enacting a proposed scenario. Speculation, in my case, was not articulated in the things we made but refers to the 3rd things people imagined and the dialogue and reflection they triggered. If understood and reflected on as practice-based research, the insights from a co-speculative design residency can offer an informed and constructive critique of the institution, liberating it through reflection from old paradigms like it liberates its residents from external constraints.

5.5 FRICTIONS

Nested systems, such as those of the DoS within the V&A, give rise to friction. Some examples of such structural friction we experienced in the DoS were on a practical, operational level, for instance with the security system that limited after-hours visitors to our department. Another were the ever present Health and Safety regulations that for instance prevented us from using the museum's laser cutter because there was no documentation on the fumes that cutting seaweed might

release. In terms of the considerations underpinning the DoS and processes taking place within it, we experienced the following types of friction:

Knowing — Sensing

Knowledge sharing — controlling, keeping and hiding

I — We: author vs facilitator

Frames and rules of museum – residency – industry

Will of the seaweed — Will of the maker

Micro — Macro viewpoints

Commercial considerations — ethical aims and aspirations

Industry — Craft — Art

Yielding — Holding the course

Input — Output

Humour and Performance — Professionalism

Action — Reflection

Hierarchy — Anarchy

Seaweedness — Objectness

Research — Design — Art — Craft

Rigour — Flow

The friction we experienced forced us to articulate our concerns and reflect on our intentions and processes. It made the strengths and weaknesses of the external systems apparent — as well as those of the DoS — and helped us position ourselves in articulating what kind of system we wanted to operate in. We reflected and discussed the internalised ‘truths’ we operated by, tentatively agreeing on how to proceed and what to share with whom. This revealed one essential issue I have to resolve for the DoS in its present state and all future iterations, namely the conflict of authorship, intellectual property rights and sharing. To some extent, this is an issue in all collectives, co-design and CoP activities. It raises the question of how much my own name should be associated with DoS and questions as to when to share what, when to hold on or let go? The answers will be different for every project, depending on the matter of concern and overall context. The important factor to maintain is that the overall enquiry, practice and workflow are enabling a constructive perpetual beta framework for speculation.

5.6 COMMONING

The DoS residency at the V&A raised a large number of questions, many — apart from the actual practice of making, reflecting and speculating — relating to authorship and intellectual property, accessibility and dissemination: When the whole DoS becomes the design, how do we maintain and protect it? Could the Department of Seaweed also exist within a commercial laboratory? If a member of the Department of Seaweed crafted a highly personalised mask from seaweed, made to their own design – should this object carry her name or mine, or be attributed to the DoS? Can I post pieces made by other members of the department on my website and if so, how should I credit them? Who keeps the objects when the department moves on? Are the team members who started as interns still interns? When shall I share what with whom under which conditions?

Having to resolve these questions was more than a thought exercise, for instance when visitors to the DoS photographed every last studio detail in a staccato of shutter clicks, or quick fired questions at us about formulas — and criticised us for not sharing enough information when we did not instantly hand them the recipe. Or when I collaborated with luxury cabinetmakers Linley but declined to sign away ownership of the IPR of the processes we developed.

I came to understand that there would have to be a legal framework that reflects the collective nature of the co-speculative and practice-based activities of the DoS, as well as their outcomes. This should clarify how individual contributions can be credited, whilst governing the overall knowledge as a commons for material development, similar to a Creative Commons licensing system. The idea of the commons has been described by the economist Elinor Oström as a shared system for managing and protecting a resource generated by a group (1990). It is relevant to the DoS framework since this knowledge is created outside the commercial realm. Some individuals or groups might only contribute to the DoS because of the fact that the DoS is a social rather than a commercial enterprise. Therefore, the commons framework should also protect the infrastructure, activities, processes, knowledge and other outcomes from exploitation in a traditional commercial manner.

Co-Speculation in Stages

With the DoS at the V&A, I have probed how museums engage with contemporary design processes that might not result in collectible objects, and with designers who look at the museum not only as a place to showcase work but to engage and form publics around issues. This shifts the museum's temporal frame towards the future and shifts the sharing of knowledge from 'the known' to 'communal discovery and knowing'. The museum becomes an infrastructural node for community forming transitional practice and a space for shared processes and dialogue. Based on the DoS residency, work with seaweed at the V&A and the key insights outlined above, I am proposing a method for co-speculation by communities of practice in a museum context — potentially transferrable to other fields of practice-based enquiry and speculation as well. I will outline the stages leading towards its development and illustrate the actual method with a sequence of diagrams, introducing its different levels of complexity. I will be using my inquiry into kelp — before and at the V&A — as a case study to explain the process.

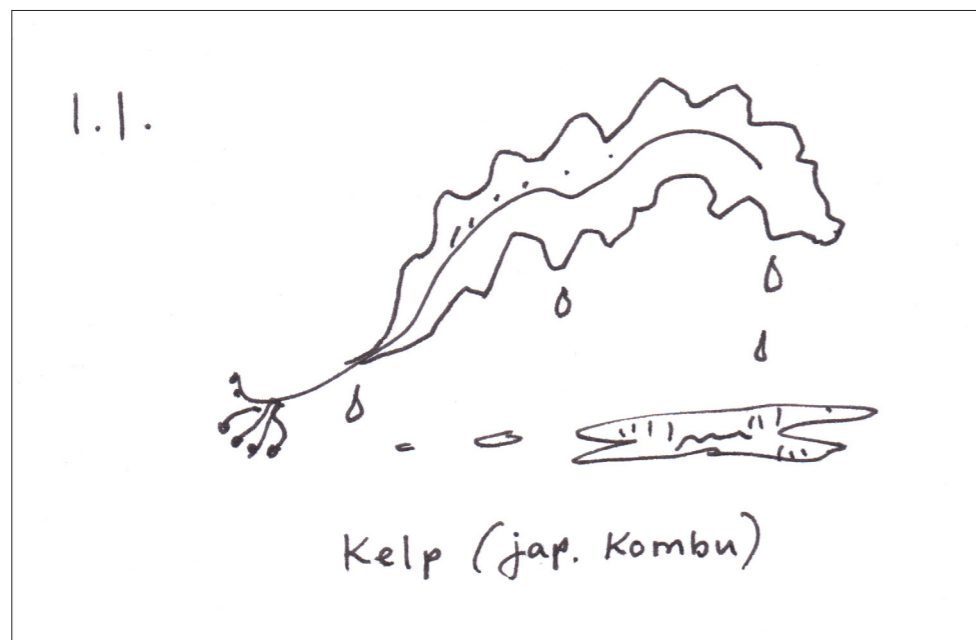


fig. 55: Stage 1.1: Identifying a matter of concern: Kelp

Stage 1.1: Kelp – Identifying a matter of concern

I identified my matter of concern when I first consciously encountered kelp during my S-AIR residency in Sapporo, Hokkaido, Japan in 2007. I investigated it in a multi-sensory way, i.e. by physically manipulating it, smelling it and eating it. In this way, I entered into a physical dialogue

with the material, trying to elicit its material voice. Coming to kelp with an experimental design background, shaped by my studies at the RCA and my interest in unusual natural materials, I primarily thought of its potential material qualities, its translucence, depth of colour and tensile strength. When I discussed this with my Japanese hosts, we engaged in dialogue about how the material was viewed, valued and used in Japanese culture. This helped me map the current cultural, mainly culinary context of kelp. Based on this I began to reflect and speculate about the potential of kelp beyond this context in a first reflective loop.

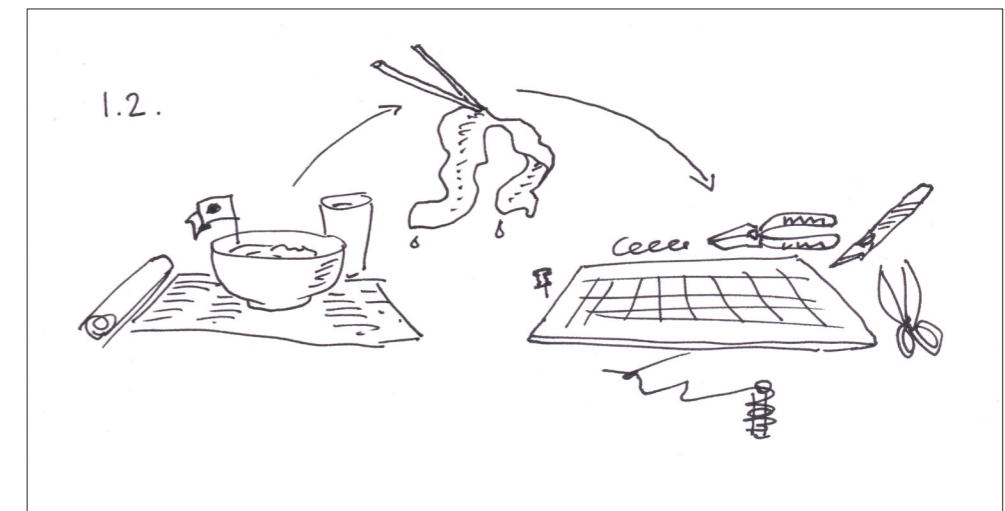


fig. 56: 1.2: Design material, not food – Moving matter out of context

Stage 1.2: Design material, not food – Moving matter out of context

Mary Douglas' (1966) idiom that dirt is simply »matter out of place« is an observation. However, I believe that this de-contextualising or reframing shift can be employed intentionally as a useful active strategy for practice-based research, especially where materials are concerned. Kelp is positioned on the threshold between nature and culture and once moved into a design context, it is completely open to interpretation. This opens up experimentation and design opportunities. It is also an opportunity for a second reflective loop.

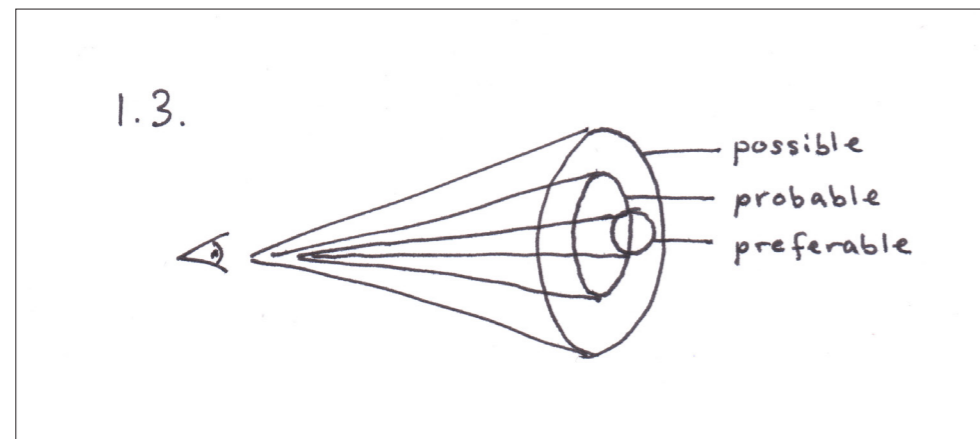


fig. 57: Stage 1.3: Individual research and practice-based speculation

Stage 1.3: Individual research- and practice-based speculation

Up until this stage of the process, I am predominantly studying and experimenting with the material as an individual designer author, interested in potential long-term sustainable and ethical uses of kelp. I am undertaking secondary research and am starting to envision future uses for kelp. This is illustrated by the 'Cone of Futures' devised by Joseph Voros (2001). On the cone, a future extends from its starting point along a time line, showing the scope of possible and probable futures, as seen from a single perspective. From this perspective a value-based judgement about what a preferable future consists of is also possible, visualised as a cone that in my view can intersect any of the base cones representing probable, possible, improbable and impossible futures. This, however, is a value judgement that is rendered meaningless and solipsistic if it only mirrors an individual viewpoint. Engaging with the material kelp in a physical, multi-sensory way as well, in practice-based research, generates additional sensory feedback feeds for my inquiry, both as an observer and as a maker (Glanville, 2003). This dual vision enables me to reflect on my actions and act on my reflections.

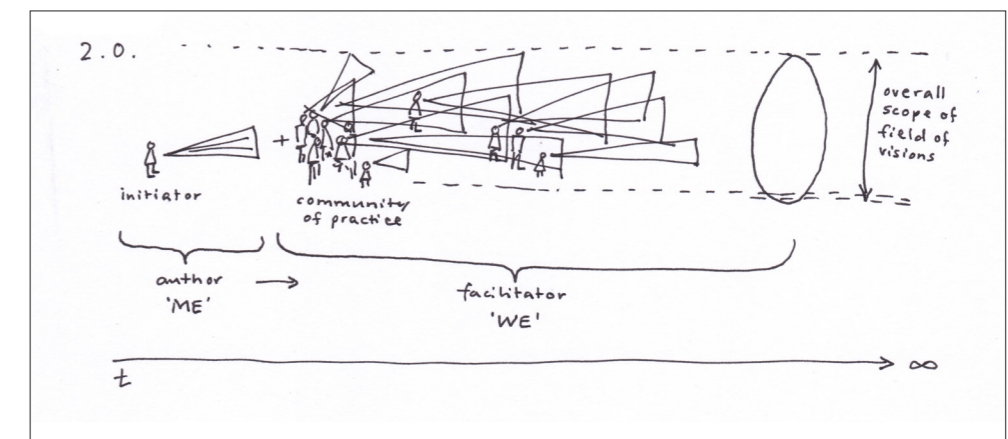


fig. 58: Stage 2.0: Field of Visions – Creating a community of practice

Stage 2.0: Field of Visions – Creating a community of practice

This is where the actual method for practice-based co-speculation takes shape. Any individual inquiry, however extensive, will always be shaped by the designer's own experiences, knowledge and background and have blind spots, even when we design in conversation with ourselves. (Glanville, 2003) Communities of practice (CoP), i.e. groups of individuals assembled from a range of different publics based on a shared matter of concern — such as kelp — help cancel out a large number of these blind spots, as described by Rittel's (1969) »symmetry of ignorance« concept in Chapter 3. By establishing a CoP, the designer's role shifts from author to facilitator. Grouping individuals from different publics (Dewey, 1927) around an inquiry enables Bohm dialogues (2013). Collective speculation complements the single vision of the initiating designer through a dense field of visions. The field has the potential to both sharpen the initial vision, as well as expanding it and changing its overall trajectory. However, in my view this diverse flux of visions can only take place if the CoP hierarchy is as flat as possible and people interact employing Sennett's »subjunctive voice«, encouraging individuals to contribute freely.

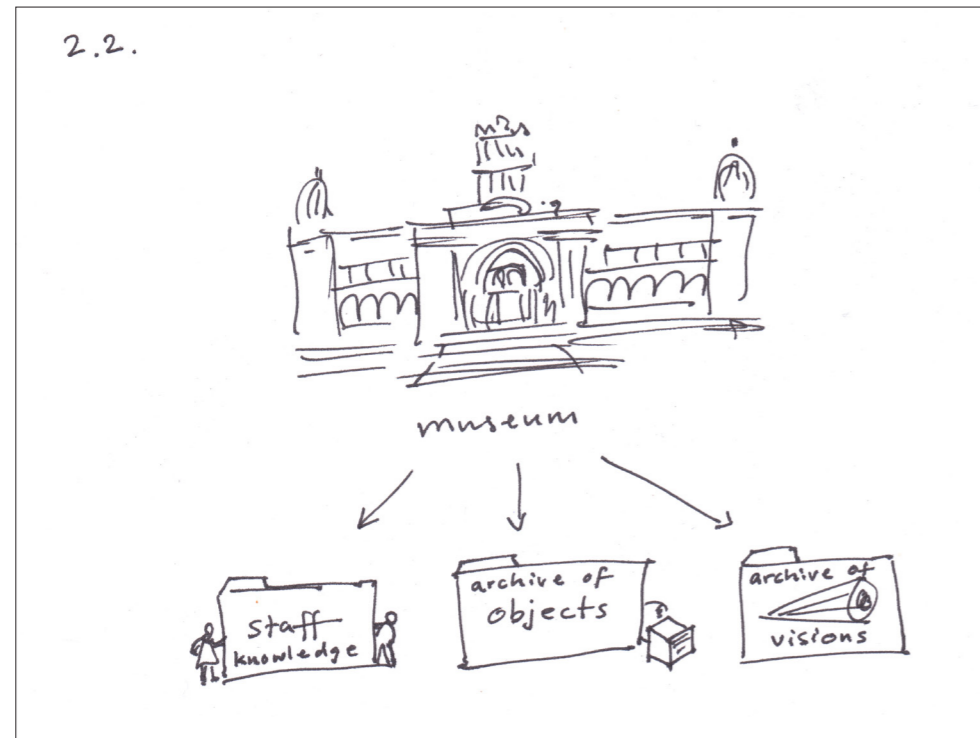


fig. 59: Stage 2.1: A network sharing a common value base

Stage 2.1: A network with common values

Communities of practice need a supporting framework — although they are infrastructures (Karasti et al., 2010) in themselves, as are the physical, cultural and information infrastructures they are set within. I will expand on these later. However, I believe the primary foundation CoP require, more than a shared matter of concern, is a base of shared values. These values, which can for instance be expressed in the form of manifestos or codes of conduct, define the stance of the CoP and give it criteria to refer back to and judge their speculations by. Values support group cohesion, help position it in a field or towards other communities — and create a sense of belonging and responsibility towards the group, its aims and activities. In addition, if these values are codified, the CoP can be expanded, added or multiplied without the need for the initiator or original CoP to be present or involved at all times.

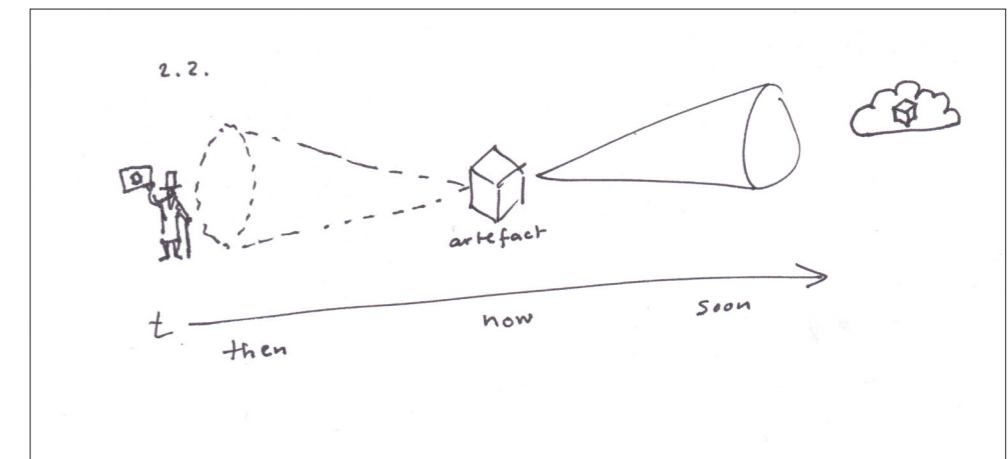


fig. 60: Stage 2.2: Museums as infrastructural nodes attract diverse publics to CoP

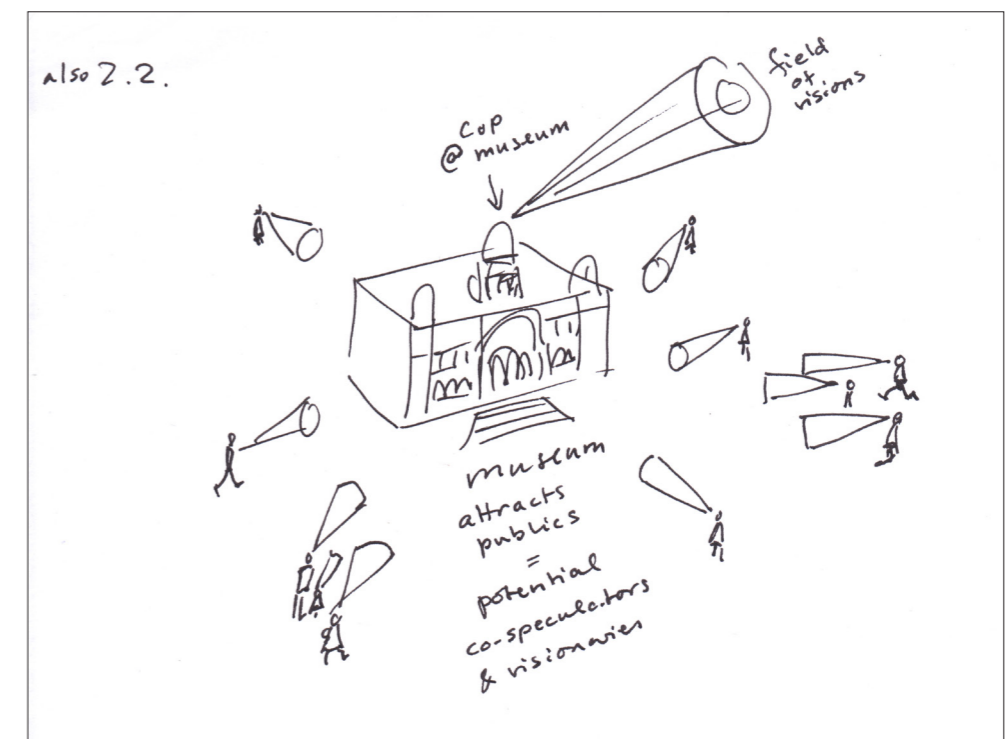


fig. 61: Stage 2.2: Different aspects of what museums have to offer CoP

Stage 2.2: Inside infrastructural nodes – CoP museum residence

As mentioned above, CoP also require a physical, cultural and information infrastructure. In this respect, museum residences are ideal locations for CoP, as are those in other institutions attracting diverse publics, for instance universities, research centres, vocational schools and community centres. Some critics, among them Cameron Tonkinwise, reject the use of museums for design practice or display thereof. Tonkinwise states that design loses its agency encased in the 'white walls' of the museum. I believe however, that this statement has little relevance in relation to practice-based design research in the museum

because in my opinion it is based on an outdated view of museums and their role. Museums like the V&A are established nodes in our cultural infrastructure, places that attract a wide and expanding range of publics primed for learning and knowledge transfer in a largely non-commercial environment. They offer a wide range of artefacts, displays, information and activities, increasingly interactive and co-created with museum publics, and are constantly — and actively — seeking to expand the quantity and diversity of their visitors. Even if we disregard everything apart from the function of the museum as an archive of artefacts, it is still a valuable CoP base. This is because its artefacts are acquired, archived, contextualised, interpreted, curated, displayed and preserved by another CoP, the expert museum staff. Exchange between these two types of CoP, between museum and design, staff and residents, is a potentially rich source of knowing and knowledge, theoretical and practical. Also, and importantly relating to CoP speculation in the museum, each collected museum artefact is an embodied expression of a vision. It represents a concept or a form of technical, cultural or intellectual functionality, contextualised within its time, environment, culture, an socio-economic infrastructure. Access to the museum as an archive of past futures enables contemporary CoP not only to engage in future-focussed speculation, based on reflection in action (Schön, 1983), but also draw on past speculation archived in museum collections.

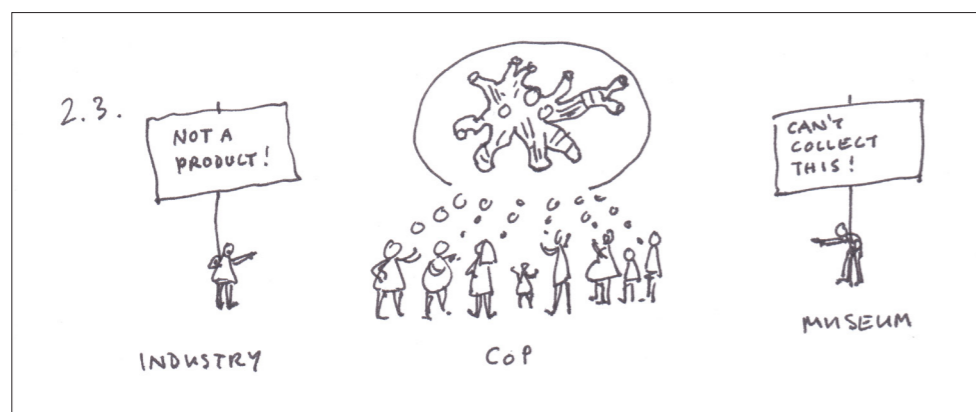


fig. 62: Stage 2.3: CoP challenging traditional paradigms

Stage 2.3: Freedoms and frictions – CoP, hierarchies and paradigms

CoP museum residents enjoy the freedom of working apart from consumer culture and the capitalist paradigm, as well as from the core institutional hierarchy of the museum. However, flat-hierarchy CoP activities may

also cause friction with the pyramidal hierarchies of the commercial realm outside of the museum and that of the museum itself. I see this as an advantage, something that CoP should actively consider or even seek out. It generate feedback they might not otherwise receive and encourages reflection on a systems level.

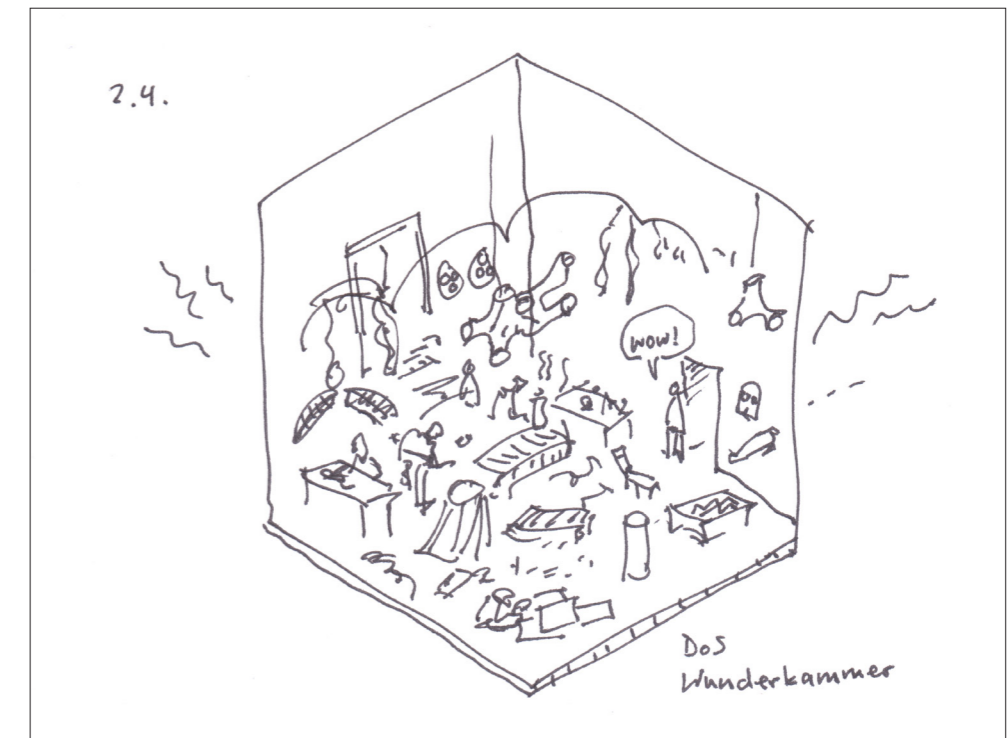


fig. 63: Stage 2.4: A multi-sensory, open access CoP residency studio environment

Stage 2.4: Made for making – Infrastructuring a sense of place

What makes a place enjoyable, productive and rewarding to work in, intriguing to visit and conducive to dialogue, reflection and communication? In my view, there are a number of factors that facilitate this sense of place, which I have tried to incorporate in the DoS residency space at the V&A. Multiple, multi-sensory and intellectual access points are essential, created by surrounding the CoP and the visitors to its workspace with material samples, prototypes, accessible tools and contextual items that can be seen, touched, smelled, tasted — and talked about with the DoS team. The things populating the studio space were displayed deliberately un-curated, reflecting the iterative dialogic approach the CoP adopted. Visitors were free to browse the DoS. In doing this they had the opportunity to make their own choices, declare their own interests and fascinations, make connections, and relate things to their own lives, cultures, experiences and skills. In this way, the museum

residency and interaction with visitors in the studio provided the opportunity to further sharpen the 'field of visions' (stage 2.0) of the CoP speculation.



fig. 64: Stage 2.5: Materials-based speculation towards a new craft

Stage 2.5: Same same but different – crafting a new craft for kelp

The Department of Seaweed is a CoP based on participatory making as much as it is on kelp. I feel strongly about this because I see the qualities of thinking through making as an important factor in co-speculation. Working with an as yet design-context-free material such as kelp provided the DoS team and myself with the unique opportunity of creating a new craft around kelp. We did this by means of a system of analogies and pairings, comparing kelp with leather, plastics, paper, stained glass and other established materials. Each of the latter is linked with an existing craft canon and context. In creating kelp marquetry for instance, we were able to draw on and adapt wood veneering techniques. This enabled us to transfer techniques to kelp and test them for usability, creating a toolkit of processing methods. Where material appearances were analogous but their qualities too dissimilar, we either experimented with transferring the formal language of artefacts to things made of kelp, or tried to combine the heterogeneous materials in combinations enhancing the qualities, function or usability of both. An example of this view of opposites as opportunities are the skin-on-frame structures we created from rattan and kelp, leading to the Oki Naganode sculpture (A. fig. 235).

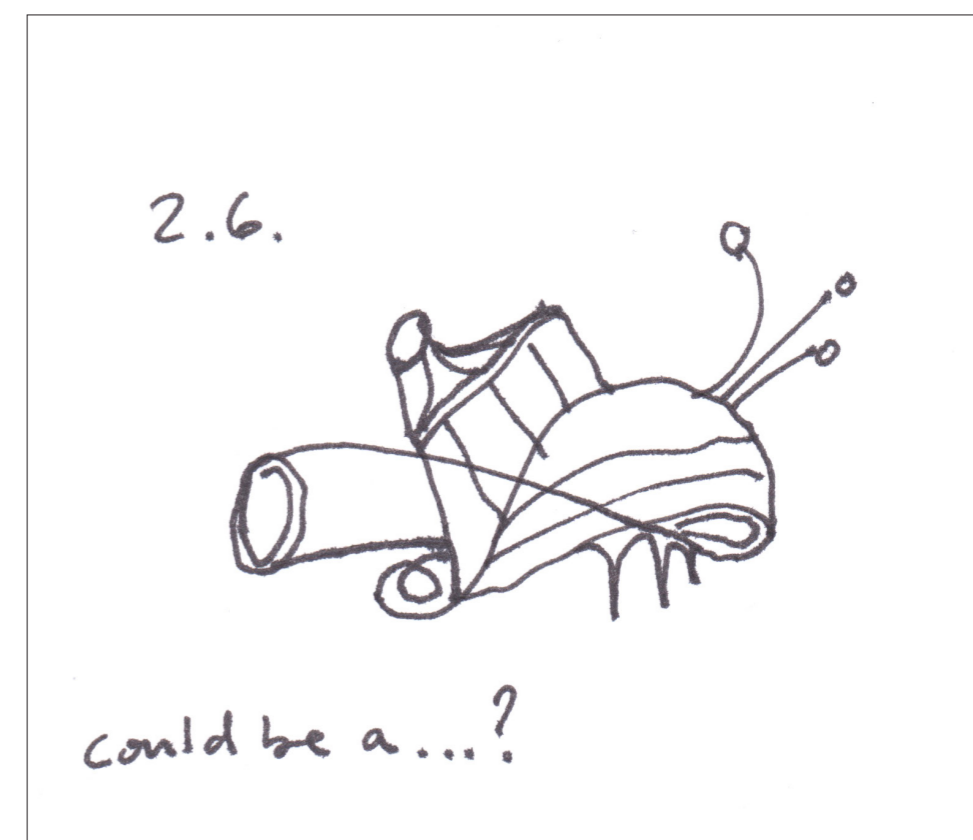


fig. 65: Stage 2.6: Unfinished objects= speculative things

Stage 2.6: Third things and materialised wanderings: Unfinished things for unlimited speculation

Because of their museum residency context, the physical outcomes of the co-speculative vision of the Department of Seaweed CoP need neither conform to industrial design requirements nor to those for museum collection acquisition. This means that the embodiments of our speculation do not have to become products or last forever. The majority of things that were made in the DoS were unfinished in the traditional sense. With the exception of the Oki Naganode sculpture, most things were material or processing experiments, worked up until they generated the information we required to gain new skills, techniques or inspiration. Others, like the seaweed hats described in Chapter 4, were created specifically to be hybrids, helping us ascertain the boundaries of object typologies. I see this ambiguity as an asset. The appearance of things being 'work in progress' reflects the ongoing nature of our speculative 'wanderings' (Ingold, 2013) towards an undefined time horizon. They also create opportunities for participation by museum visitors, intriguing them and often enticing them to speculate what might be made of seaweed in the future. I call these future embo-

diments of kelp ‘third things’ because they exist neither in the past or present, but only in the future envisioned by that individual. In this way, third things become important envisioning tools, activating speculative potential in visitors, which can then be contributed to the CoP knowledge base and vision.

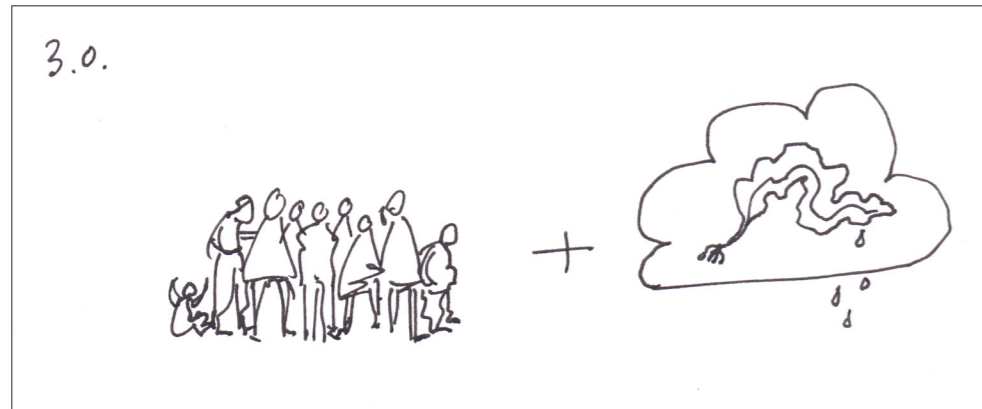


fig. 66: Stage 3.0: Beyond the V&A: physical CoP and cloud department

Stage 3.0: Networks, clouds, dynamics – The DoS beyond the V&A

In the preceding stages I have attempted to show how individual speculative design practice can evolve into a CoP-based process of co-speculation — aided by the opportunities offered by the museum infrastructure and its residency, a liminal system of freedoms and frictions between the paradigms and hierarchies of industrial, post-industrial design and the museum. The fact that residencies are conducted in limited timeframes raises the question what happens to CoP like the Department of Seaweed after its time at the V&A? I would like to answer this by returning to the idea of infrastructuring (Karasti et al., 2010). To expand on the physical DoS residency at the V&A, I intend to facilitate the continuation of the work at the V&A as a virtual instance, a ‘cloud department’ consisting of an online knowledge base, forum and exchange. This will enable contributors to stay active as a network and continue working with kelp in a decentralised manner, linked to their own fields of practice. They would feed back their findings into the virtual DoS until it manifests again physically at another museum, institution or in a community that shares seaweed as a matter of concern. This again could be extended to a physical multi-CoP network. In terms of community, I believe the DoS would be ideally suited to co-creating sustainable kelp-related aquaculture initiatives, enterprises and crafts to help regenerate coastal communities affected by depleted fish stocks.

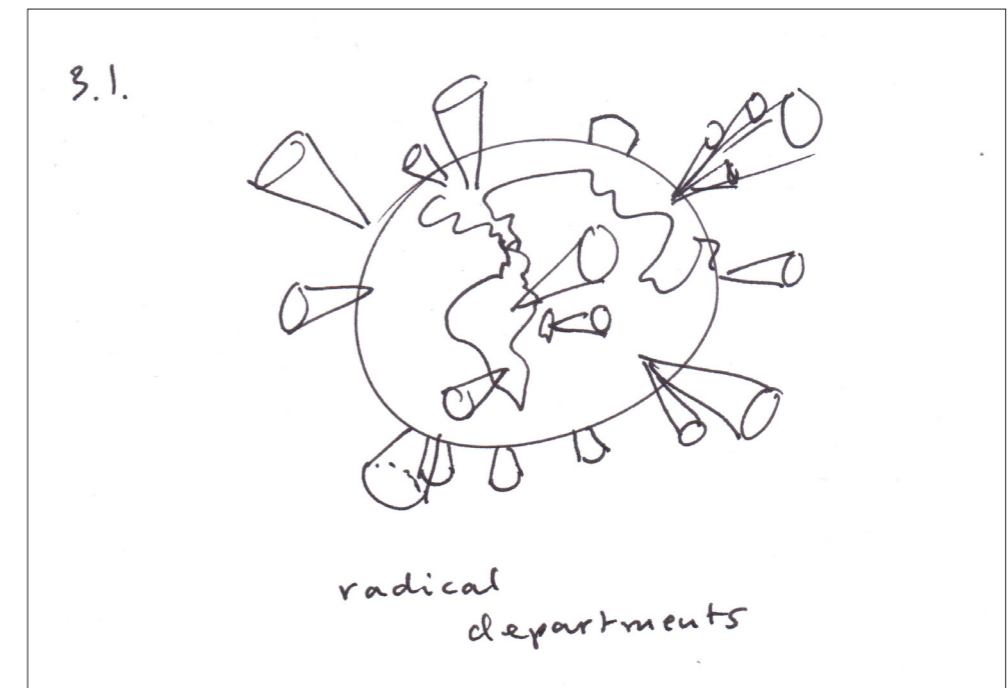


fig. 67: Stage 3.1: Dynamic, multi-local DoS addressing local concerns

Stage 3.1: Dynamic Departments

As outlined above, I do not see the Department of Seaweed or similar CoP as linked to a single institution. Instead, I view the temporal nature of residencies as an opportunity to create a new type of dynamic CoP. Based on the DoS at the V&A I call these ‘dynamic departments’: CoP that connect knowledge and networks from existing institutions and communities of culture and learning by temporarily docking onto them, as either physical or virtual instances of CoP. The overarching infrastructure of both types would remain the same, based on shared values. Aided by a digitally archived knowledge base both the CoP and hosting nodes, individuals and communities could create networks. They can co-speculate in a decentralised, multi-vocal and multi-local (Manzini, 2008) way. The CoP involved could assemble physically as needed, to address specific local concerns. Dynamic Department CoP could thus act as participatory activators for futuring and speculation. They could for instance focus on environmental community resilience, similar to the Transition Network (transitionnetwork.org), 3D aquaculture as undertaken by the Greenwave initiative (greenwave.org), or regeneration efforts similar to those initiated by the architectural practice Assemble (assemblestudio.co.uk). The community of practice I initiated in the form of the DoS at the V&A acts as a prototype for this type of Dynamic Department.



fig. 68: Stage 3.2: Creative Commons for material development

Stage 3.2: Towards a Creative Commons for material development

The shift from individual authorship to the facilitation and activation of collectives — from ‘me’ to ‘we’ — that is taking place in my model for practice-based co-speculation in a museum context raises the question how an infrastructure of people, processes, knowledge, things and visions should be attributed in terms of intellectual property, also how it can be protected from exploitation by parties beyond the CoP value base. As a solution, I am proposing a Creative Commons for Co-speculation, in the case of my residency relating to practice-based co-speculative material development. It should enshrine the following two main points: 1) The shared founding values of the CoP, such as prioritising sustainability and an ethical approach over profit maximisation. 2) The CoP code of conduct, in the case of the DoS the need to feed back all knowledge and information gained into the central ‘cloud department’ resource, available only to those individuals and groups who accept and sign up to its value base and code of conduct. The type of Creative Commons I am proposing would ensure there is enough freedom for CoP co-speculation and addressing futures whilst minimising friction with limiting factors, such as traditional, commercial intellectual property issues.

In the next and final chapter of this thesis I will summarise my practice-based research undertaken as part of this PhD studentship. I will sum up my proposed new co-speculative method, how it could contribute to the field of design, as well as museum practice. I will also outline how the Department of Seaweed — building on the V&A residency — might progress and expand into a co-speculative network.

6 SUMMARY AND OUTLOOK

The experiences in the Department of Seaweed at the V&A informed the proposed co-speculative method I have laid out in Chapter 5. Co-speculation is a generative method combining aspects of Critical Design and Transition Design theory with insights from participatory practice and realised via a diverse range of processes leading from research to the production of objects, installations and scenarios. It functions by initiating and facilitating a community of practice (CoP) based on a common goal, shared vision or task, underpinned by shared values. It can be characterised by its trans-disciplinary nature and flat hierarchy, enabling contributions from a wide range of disciplines and backgrounds. The co-speculative CoP may be initiated by a single person, in this case by me, a designer, whose role will gradually shift from author to facilitator as the activities of the CoP towards addressing a matter of concern evolve. This is mirrored by a shift in orders of design towards systems level, as described by Buchanan in Chapter 2 and a shift in temporal focus from short-term project time to long-term infrastructure time (Karasti, 2014).

Vital to the work of the CoP are reflection-in-action feedback loops that incorporate dialogue and planning as means of sharing information between CoP members and speculation, and reflection to re-assess the trajectory of the long-term common goal and how it might be reached. The materials used, here kelp, simultaneously constitute a method of inquiry and the subject of inquiry as an active and activating matter. Active, in the sense that the material's agency and properties delineate the trajectories of engagement and each iterative cycle of making feeds the projections with new information. Activating in the sense that raw materials, processes and unfinished or uncontextualised things are associatively rich and activate both an intellectual and physical engagement. The inquiry is not conceived before, but through working with the materials, becoming articulated through iterative cycles of making, reflection and sharing. The thought processes this triggers inform the making and vice versa.

The envisioning of future materials and objects made from kelp (vegan leather, textile, insulation, packaging, raincoats, roofing) and systemic speculations as a flat hierarchy group — such as kelp grown to

clean the ocean around a fish farm, fuelling the development of a local vegan shoe company — holds great potential because instead of a single perspective it creates a field of visions. When shared through dialogue these can then be mapped, edited and categorised as desirable and undesirable based on the group's shared value base, further informing the collective trajectory.

Practice-led inquiry and making are integral to co-speculation. Hands-on experiments, such as the physical work with seaweed in its development as a material for design and manufacture, complement theoretical research and envisioning. They offer opportunities for physical, multi-sensory engagement with a material, triggering responses only accessible via our senses and emotions. Each sensory engagement feeds into an enquiry like an individual communication channel. Analogies and pairings with other materials point towards potential contexts for use, applicable areas of knowledge and existing infrastructures that could be adapted for the new material. Making is a way of testing these potentialities and, in the process, to explicate the specificities of the material, often by analysing one's own tacit knowledge.

Unlike textual research, information stems from multiple channels and may well be conflicting or contradictory in content, depending on how we contextualise it intellectually and theoretically. One example are material pairings, such as kelp and tweed (fig. 51), which can be sewn together, which 'makes sense' — because kelp is in some respects analogue to fabric — and at the same time, based on touch, makes no sense at all, because one material feels oily and the other dry, one surface is hydrophil and the other slightly water-repellent. I see these conflicting experiences as desirable. Making and our responses to made things force us — and this could mean an individual just as well as a community of practice — to view and explore a given subject, such as seaweed, from many different perspectives. This leads us to question what we take for granted by reconstructing or reconfiguring our mental model of the situation and reflecting on our own role and position.

Seaweed proved a rich subject for co-speculation for a number of reasons. The main one is that it is a natural raw material with little established context as a design material — an exception being its historical use by aboriginal cultures. I believe that as yet un-contextualised materials such as seaweed, or those extracted from their original context for

use in design — such as the sheep and cow stomach linings I used to create lights in my pre-PhD work — are still open to interpretation. They have not yet been made into things, which are charged with cultural and functional meaning. This makes it easier to speculate about their potential and flattens the hierarchy within the CoP, since no master craftsman with years of experience can offer advice and establish rules on how to work with the material.

Creating artefacts showcasing or tapping into a material's potential enables the multi-sensorial as well as theoretical envisioning of futures. I call these object 'third objects', because they do not yet exist either prototyped or produced, but only in the minds of those speculating.

Co-speculative artefacts and third things in the Department of Seaweed were in many cases arrived at using analogies to other materials and practices. I compared seaweed with leather, parchment, paper, plastics, wood veneer and fabric. Each of these materials is connected with a rich cultural history of making and craft, processing and manufacturing methods, skills and technologies. By applying them to seaweed — for instance sewing (A. fig. 175), dyeing (A. fig. 110), laminating (A. fig. 51) and marquetry (A. fig. 76) — I could judge how similar or different seaweed is as a material. This experimental, practice-led process of association, contrast, adaptation and assimilation enabled me to create the beginnings of a new craft suitable for seaweed.

The correspondence with the material itself and allowing its agency to influence the process was essential. From the outset I tried to work in tune with the seaweed instead of trying to dominate it and force kelp into applications it is unsuited to. To do this, and applying my method of material analogies, I collaborated with a number of craftsmen from other fields, for instance carpentry (A. fig. 143) and marquetry (A. Fig. 130), marbling (A. fig. 112, 114) and fashion design (A. fig. 173, 175). What I found was that only the collaborations in which my partners shared the same approach of adapting their skills and knowledge to the qualities of the seaweed led to new discoveries and applications.

The objects created in the Department of Seaweed reflect this dialogue of maker and material, culminating in the 'Okii Naganode' sculpture (A. fig. 235–238), a large-scale modular skin-on-frame structure made of preserved leather-like Japanese Naga kelp (A. fig. 2, left sample) stretched over a rattan and aluminium skeleton (A. fig. 190, 194). It allows the seaweed to contract the shape whilst the stretched marine material

tensions and thereby strengthens the overall structure, giving it a unique geometry that could not be modelled in any other way.

The residency and physical, largely analog nature of the Department of Seaweed situated in the V&A contributed greatly to the creation of a scenography with a sense of place, multi-sensory experiences and a co-speculative atmosphere. I have proven that museum residencies can be ideal environments for practice-led research and co-speculation. They allow designers and communities of practice in residence to operate apart from the commercial and process-based constraints of design in the service of industry. Residents have access to the resources and audiences of the museum, convene communities of practice in an established place of cultural knowledge, learning and dissemination, and in turn enrich the culture and offerings of the hosting institution through their activities.

The active and interactive nature of co-speculation does more than adding to an existing museum programme. I believe that co-speculation, as conducted in the Department of Seaweed, can potentially change museums at a systemic level by enabling a diverse public in multi-directional dialogue and participation on eye level. Museum residencies can grow and link up individual ideas and concepts into CoP intent on collaborating to pursue the next steps.

Liberated from the industrial paradigm, co-speculative residency activities conducted simultaneously in the museum as a space, yet outside its organisational hierarchy, could create the paradigm friction and alternative visions needed to enable museums to adapt and evolve as institutions. By engaging with their residents in co-speculation at eye level — at systems level — museums could significantly expand their reach and the realm and methods of research undertaken and become less hierarchical, participatory institutions. Residencies could become semi-autonomous spaces that allow museums to reflect on themselves and experiment with new formats of engagement. Connected to museum departments that seek the knowledge generated, residencies offer insights and a research input through practice-led research that connects the museum's body of knowledge with its publics.

6.1 OUTLOOK

What are the next steps for the Department of Seaweed, beyond its inaugural V&A residency? In the years since I began this research project the interest in seaweed as a material has grown considerably and potential partners and collaborators contact me regularly with both their questions and expertise, interested in joining the DoS.

To lay a firm foundation for sharing knowledge in the Department of Seaweed, the core DoS team will compile guidance principles after this PhD, consisting of ethical standards and the core values participants should share, as well as a legal framework for sharing and crediting the intellectual property created by contributors to the department. It is a Creative Commons for material development — based on Elinor Oström's eight principles for managing a commons, as summarised by Ken Friedmann (2017):

Oström's eight Principles for Managing a Commons:

1. Define clear group boundaries.
2. Match rules governing use of common goods to local needs and conditions.
3. Ensure that those affected by the rules can participate in modifying the rules.
4. Make sure the rule-making rights of community members are respected by outside authorities.
5. Develop a system, carried out by community members, for monitoring members' behaviour.
6. Use graduated sanctions for rule violators.
7. Provide accessible, low-cost means for dispute resolution.
8. Build responsibility for governing the common resource in nested tiers from the lowest level up to the entire interconnected system.

The aim of this framework is protecting the discoveries of individuals and the community of practice, for instance from unethical and unsustainable exploitation.

This AHRC-funded collaborative practice-based PhD studentship between the RCA and V&A has fundamentally changed my outlook on my practice. It has given me the opportunity to reflect on what I do and position my practice closer to Transition Design with an activist

mindset. As a design practitioner, it encouraged me to think, research and speculate increasingly on a systems level.

What are the parameters of this system? In the process of researching this thesis I have come to understand that every design process results in multiple outcomes: knowledge, objects and a network as well as a sharpened vision and mission. This insight helps us define what we share under which conditions in a CoP and underpins the Creative Commons framework for material development we are setting out to develop. In the case of the DoS, objects benefit the individual and knowledge is treated as a common good that is expanded through individual and communal practice and research. All these activities are in turn connected by both analog and digital networks growing in parallel with the scope of the enquiry.

I am hoping that my experiences in the DoS and this practice-led research add to the methodological and theoretical repertoire available to practitioners and researchers and opens up further possibilities for practitioners to conduct their research or their participatory practice within the space of a museum residency.

As the DoS is growing into a larger CoP we welcome contributions from all disciplines and walks of life towards the constructive, value-based envisioning and enacting of preferable futures — not predetermined but based on iterative cycles of making, reflection and sharing.

GLOSSARY

Arts and Humanities Research Council (AHRC)

Funding body for research. See: <http://www.ahrc.ac.uk/>

Bohm Dialogue

A form of dialogue proposed by the American physicists David Bohm, in which all participants treat one another as equals and aim to fully and non-judgmentally experience every contributed position. See: Bohm, D. (1996). *On dialogue*. New York: Routledge.

Brown algae

»The Phaeophyceae or brown algae (singular: alga), are a large group of mostly marine multicellular algae, including many seaweeds located in colder Northern Hemisphere waters. They play an important role in marine environments, both as food and as habitat. Many brown algae, such as members of the order Fucales, commonly grow along rocky seashores. Some members of the class, such as kelp, are used as food for humans.« (Source: Wikipedia entry: https://en.wikipedia.org/wiki/Brown_algae, accessed: 2017/10/30)

Co-speculation

A method for the shared envisioning of potential and possible futures by a community of practice (CoP), as proposed by the author of this thesis.

Community of practice (CoP)

A group of people sharing profession or craft. The concept was proposed by cognitive anthropologist and educational theorist Etienne Wenger and Jean Lave in their 1991 book *Situated Learning* (Lave & Wenger 1991). See: Wenger, Etienne (1998). *Communities of Practice: Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.

Critical Design

Critical design takes a critical theory based approach to design. This kind of design uses design fiction and speculative design proposals to challenge assumptions, conceptions about the role of objects play in everyday life. Popularized by Anthony Dunne and Fiona Raby through their firm,

Dunne & Raby. (Source: Wikipedia entry: https://en.wikipedia.org/wiki/Critical_design, accessed: 2017/10/30)

Cybernetics

Cybernetics is a transdisciplinary^[1] approach for exploring regulatory systems — their structures, constraints, and possibilities. Norbert Wiener defined cybernetics in 1948 as »the scientific study of control and communication in the animal and the machine.« In the 21st century, the term is often used in a rather loose way to imply »control of any system using technology.« In other words, it is the scientific study of how humans, animals and machines control and communicate with each other. (Source: Wikipedia entry: <https://en.wikipedia.org/wiki/Cybernetics>, accessed: 2017/10/30)

Design, four orders of / Four orders of design

A hierarchical system established by Professor Richard Buchanan at Carnegie Mellon University, describing design disciplines and activities in increasing levels of complexity: 1st order: text and image; 2nd order: object; 3rd order: process, strategy, services, experience; 4th order: systems, organisation, culture. See: Richard Buchanan, 'Design Research and the New Learning,' *Design Issues* 17, no. 4 (Autumn 2001): 3–23.

Deutsche Werkstätten Hellerau (DWH)

Luxury furniture producer, interiors, architecture and yacht interior builders in Hellerau, near Dresden, Germany. See: <http://www.dwh.de/en/welcome/>

Dewey publics

The American philosopher John Dewey described a public as a group of individuals formed around addressing or responding to a particular issue, or matter of concern. See: Dewey, John. (1927). *The Public and its Problems*. New York: Holt.

Galleria Nilufar

Design and furniture gallery in Milan, Italy. Proprietor: Nina Yashar

Gutai Movement / Manifesto

Movement in Japanese art (1954) proposing that artistic/creative activity

should be in service, or rather subordinated to the will of the materials artists and designers work with.

Kelp

Term referring to brown algae seaweed species. See: Brown algae

Kelp Constructs

Geometric structures made of stretched and dried Japanese kelp, supported by legs made of fibreglass, metal or wood.

Kombu, or konbu

Japanese for kelp, referring to the brown algae species *Saccharina japonica*.

Kombu, Ma

Japanese for the brown algae species *Saccharina japonica*. See: Kombu

Kombu, Naga

Japanese for the brown algae species *Saccharina longissima*. See: Kombu

Laminaria digitata

Laminaria digitata is a large brown algae in the family Laminariaceae, also known by the common name Oarweed. It is found in the sublittoral zone of the northern Atlantic Ocean. (Source: Wikipedia entry: https://en.wikipedia.org/wiki/Laminaria_digitata, accessed: 2017/10/30)

Laminarium

Title of the final Research Fellowship exhibition at Stanley Picker Gallery, Kingston-upon-Thames.

Laminarium Bench

Bench consisting of wooden panels laminated with seaweed veneer. Created in collaboration with the Deutsche Werkstätten Hellerau (DWH).

Laminate

Sheets of material glued together in layers. Also the covering of a substrate with a surface material.

Laser cutting

Cutting material by means of a laser, focussed rays of high-intensity light.

Materialgerechtigkeit

German word (lit. material justice/justice to materials) representing working with materials in a way that uses them to best effect, making the most of the material properties and qualities.

Marquetry

Creating designs from elements cut from sheets of different kinds and colours of wood veneer. Traditionally, marquetry designs are cut by hand; however, most marquetry employs laser-cut veneer.

Museum Residency

The V&A describes its residency programme as follows: »Supporting contemporary artists, designers and makers has always been at the heart of the V&A's mission. Our Residency Programme enables creative practitioners to gain unique access to the Museum's collections, archives and curatorial expertise, providing them with a studio on-site, a bursary and a production budget to experiment, create a new body of work and engage with the public.« See: <https://www.vam.ac.uk/info/museum-residency-programme>

Oki Naganode

Sculpture, consisting of modular, skin-on-frame modules made of Japanese Naga seaweed, stretched over a rattan and aluminium structure. Designed as a final residency outcome of the Department of Seaweed residency at the V&A. Exhibited at the V&A during the London Design Festival 2013, subsequently at the Artipelag Art Museum in Stockholm, Sweden and the Textielmuseum Tilburg in the Netherlands.

Parquet flooring

Floor consisting of an arrangement, pattern or image made up of wooden pieces.

Participatory Design

Participatory design (originally co-operative design, now often co-design) is an approach to design attempting to actively involve all stake-

holders (e.g. employees, partners, customers, citizens, end users) in the design process to help ensure the result meets their needs and is usable. Participatory design is an approach which is focused on processes and procedures of design and is not a design style. The term is used in a variety of fields e.g. software design, urban design, architecture, landscape architecture, product design, sustainability, graphic design, planning, and even medicine as a way of creating environments that are more responsive and appropriate to their inhabitants' and users' cultural, emotional, spiritual and practical needs. It is one approach to place-making. (Source: Wikipedia entry: https://en.wikipedia.org/wiki/Participatory_design, accessed: 2017/10/30)

Participatory Museum, The

A book by museum director, former design consultant and blog author of Museum 2.0, Nina Simon, concerned with and advocating community participation in museum activities and the development of museum offerings and the institution itself. See: Nina Simon, *The Participatory Museum*, Museum 2.0, 2010

Penone, Giuseppe (*April 3 1947)

Italian artist working with natural materials, mostly wood.

Phycology

The scientific study of algae.

Reflection-in-action /Reflection-on-action

Concepts proposed in 1978 by Donald Schön and Chris Argyris, suggesting a generative creative process of interlinked cycles of action (here: making) and reflection. Reflection-in-action stands for a simultaneous process, in which the ongoing action is reflected upon and changed accordingly. In reflection-on-action the reflection happens after the action and informs the next cycle of making. See also: Reflective Practice

Reflective Practice

see Reflection-in-Action

Residency

See: Museum Residency

Royal College of Art

The Royal College of Art or RCA is a public research university in London, in the United Kingdom. It offers postgraduate degrees in art and design to students from over 60 countries; it is the only entirely postgraduate art and design university in the world. Alice Wignall (2012): In the 2017 QS World University Rankings by Subject, the RCA was placed first in the Art and Design subject area. (Source: Wikipedia entry: https://en.wikipedia.org/wiki/Royal_College_of_Art, accessed: 2017/10/30)

S-AIR, Sapporo

Sapporo Artist-in-residence programme in Sapporo, Hokkaido, Japan. I was artist in residence at S-AIR in 2007 and first discovered Japanese kelp, or kombu during my three-month residency. See: Kelp, Kombu, Konbu and: http://www.s-air.org/about_us.html#english

Saccharina latissima

Saccharina latissima is a brown algae (class Phaeophyceae), of the family Laminariaceae. It is known by the common name sugar kelp, and also sea belt and Devil's apron, due to its shape. It is found in the north east Atlantic Ocean and the Barents Sea south to Galicia in Spain. It is not found in the Bay of Biscay but is common round the coasts of the British Isles. The species is found at sheltered rocky seabeds. (Source: Wikipedia entry: https://en.wikipedia.org/wiki/Saccharina_latissima, accessed: 2017/10/30)

Situated Action theory / research

A theory proposing that the actions of individuals and how they communicate and relate to others are influenced by their current situation and the physical, social or cultural context they find themselves in. Action, communication, situation and context are seen as interlinked. See: Lucy Suchman, *Plans and Situated Actions: the problem of human-machine communication*, Cambridge University Press, 1987

Skin-on-frame construction

The creation of structures, stretching textiles or membranes across a lightweight skeletal structure. Examples are the construction of Inuit kayaks or glider planes.

Stanley Picker Gallery

Stanley Picker Gallery at Kingston University is one of the leading examples of a university gallery in the UK. Its public activities are dedicated to the research, commissioning and presentation of innovative new practice across the fields of art, design and architecture for general, academic and specialist audiences. (Source: <https://www.stanleypickergallery.org/about/>, accessed: 2017/10/30) The gallery awards research fellowships to artists, designers and other creative professionals.

Speculative Design

An emerging field of design, related to Critical Design, and proposed by designers Dunne and Raby in their book *Speculative Everything*. MIT Press promotes the book as follows: »Today designers often focus on making technology easy to use, sexy, and consumable. In *Speculative Everything*, Anthony Dunne and Fiona Raby propose a kind of design that is used as a tool to create not only things but ideas. For them, design is a means of speculating about how things could be — to imagine possible futures. This is not the usual sort of predicting or forecasting, spotting trends and extrapolating; these kinds of predictions have been proven wrong, again and again. Instead, Dunne and Raby pose ‘what if’ questions that are intended to open debate and discussion about the kind of future people want (and do not want).« (Source: <https://mitpress.mit.edu/books/speculative-everything>, accessed: 2017/10/30) See also: *Critical Design*

Subjunctive mood

A way of speaking about what may potentially occur in the future, not a statement of fact. Relevant to this thesis, also a concept by the American sociologist Richard Sennett, employing the openness of the subjunctive mood to facilitate dialogue and co-operation. See: Richard Sennett, *Together: The Rituals, Pleasures and Politics of Cooperation*, Penguin (7 Feb. 2013)

Stained glass

Coloured or painted glass, often used to create figurative or abstract designs in an architectural context. Examples include church windows, where stained and painted glass panels are combined using strips of lead and/or soldering.

Sustainability

The ability of biological systems to remain diverse and productive indefinitely. The term is often employed to describe the aim of equally successfully maintaining the earth's ecosystem and ensuring human survival. The term was first documented relating to forestry management by Hans Carl von Carlowitz in his 1713 book *Silvicultura oeconomica*. Today, sustainability is used to describe a wide range of sociological, economic and environmental developments. However, in the context of this thesis, it is employed at a much larger, eco-systemic scale. (Source: Wikipedia entries: <https://en.wikipedia.org/wiki/Sustainability> and <https://de.wikipedia.org/wiki/Nachhaltigkeit>, accessed: 2017/10/30)

Systems theory

The interdisciplinary study of systems. (Source: Wikipedia entry: https://en.wikipedia.org/wiki/Systems_theory, accessed: 2017/10/30)

Transition Design

Fundamental change at every level of our society is needed to address the issues confronting us in the 21st century. Climate change, loss of biodiversity, depletion of natural resources and the widening gap between rich and poor are just a few of the ‘wicked problems’ that require new approaches to problem solving.

Transition Design acknowledges that we are living in ‘transitional times’. It takes as its central premise the need for societal transitions to more sustainable futures and argues that design has a key role to play in these transitions. It applies an understanding of the interconnectedness of social, economic, political and natural systems to address problems at all levels of spatiotemporal scale in ways that improve quality of life. Transition Design advocates the reconception of entire lifestyles, with the aim of making them more place-based, convivial and participatory and harmonizing them with the natural environment. Transition Design focuses on the need for ‘cosmopolitan localism’, (Manzini 2009; Sachs 1999) a lifestyle that is place-based and regional, yet global in its awareness and exchange of information and technology.

The transition to sustainable futures calls for new ways of designing that are based upon a deep understanding of how to design for change and transition within complex systems (Irwin 2011). This knowledge and the new skill sets it will inform must be integrated from

areas such as science, philosophy, psychology, social science, anthropology and the humanities and will therefore challenge existing design paradigms. Transition Design is conceived as a new area for design education, practice and research and is presented here as a proposal and invitation for further discussion and debate among educators, practitioners and researchers.

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Veneer

Very thin sheets of wood, cut radially from tree trunks and used to cover the surfaces of furniture consisting of other materials.

Victoria & Albert Museum

»The V&A is the world's leading museum of art and design, housing a permanent collection of over 2.3 million objects that span over 5,000 years of human creativity. The Museum holds many of the UK's national collections and houses some of the greatest resources for the study of architecture, furniture, fashion, textiles, photography, sculpture, painting, jewellery, glass, ceramics, book arts, Asian art and design, theatre and performance.« (Source: <https://www.vam.ac.uk/info/about-us>, accessed: 2017/10/30)

Wabi Sabi

Japanese concept, or world view accepting transience, impermanence and imperfection. In relation to art, craft and design: valuing the qualities of materials, their essential impermanence and imperfection, as well as incomplete or unfinished things.

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Victoria and Albert Museum, Connect Events:

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Carnegie Mellon Framework for Transition Design:

<http://transitiondesign.net/articles/>. Pittsburgh: Carnegie Mellon University

Greenwave initiative: <http://greenwave.org/>

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The following discussion is an archived debate of the proposed deletion of the article below. **Please do not modify it**. Subsequent comments should be made on the appropriate discussion page (such as the article's talk page or in a deletion review). No further edits should be made to this page.

The result was **delete**. Sandstein 09:47, 27 November 2016 (UTC)

Transition design [edit]

Transition design (edit | talk | history | links | watch | logs | views) – (View log · Stats)

(Find sources: "Transition design" – news · newspapers · books · scholar · HighBeam · JSTOR · free images · free news sources · The Wikipedia Library · NYT · WP reference)

This jargon-filled over-wordy formulation of a rather common idea seems to be based on one person's views, without any evidence of general acceptance. **DGG** (talk) 05:57, 12 November 2016 (UTC)

Note: This debate has been included in the list of Environment-related deletion discussions. Shawn in Montreal (talk) 08:26, 12 November 2016 (UTC)

Note: This debate has been included in the list of Technology-related deletion discussions. Shawn in Montreal (talk) 08:26, 12 November 2016 (UTC)

- Delete** as largely uncited spam. **K.e.coffman** (talk) 03:04, 18 November 2016 (UTC)

Note: This debate has been included in the list of Science-related deletion discussions. **K.e.coffman** (talk) 03:04, 18 November 2016 (UTC)

Relisted to generate a more thorough discussion and clearer consensus.

Please add new comments below this notice. Thanks, **NORTH AMERICA**¹⁰⁰⁰ 04:12, 19 November 2016 (UTC)

Note: This debate has been included in the list of Science-related deletion discussions. **K.e.coffman** (talk) 04:20, 19 November 2016 (UTC)

- Weak keep.** The contents read like mushy nonsense to me, but then so do a lot of well-documented post-modern topics, and they *are* notable, so that's not a good criterion. As far as this one goes, it seems to involve at least a small group of a half-dozen to a dozen of academics, starting in 1999, and at least four universities. I don't see how the statement that it is "one person's views" can possibly hold. Personal value-judgements aside, it seems prudent to keep the article and to tag and hopefully improve it, rather than to delete it. — Garmall Wednesday 14:11, 19 November 2016 (UTC)

- Delete** - there is a fair amount online, but - reviewing the materials - everything seems to point back to this being a **neologism** pushed by one professor.--**Rpcloud** (talk) 14:11, 19 November 2016 (UTC)

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