

THE CONCEPT OF COLLAPSIBILITY | NEW INTERIOR DESIGN APPROACH

A DESIGN FRAMEWORK FOR UNDERSTANDING AND DESIGNING CHANGE AND IMPERMANENCE

DESIGN RESEARCH THROUGH PRACTICE

Lore Said



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APPENDICES

Appendix 1 : Msc Project, Origami Package (2010)

Human Hand Interaction within Everyday Consumer Product Design

MSc INDUSTRIAL PRODUCT DESIGN

General introduction

"[W]e must confess that it is in the human hand that we have the consummation of all perfection as an instrument." (Bell 1833:207)

During the day, hands are constantly utilized and instinctively involved in an extensive range of physical activities both indoors and outdoors (James et al 2008). Domestic activities are mainly associated with consumer products. Everyday objects and domestic packaging are more often well designed for secure and easy use by able-bodied users (The Research Institute for Consumer Affairs 2000 a). However, there are still a few problems with older people and with those who have hand disabilities or poor dexterity.

"Products need to reflect that we are diverse and therefore different in our needs" Sarah Langton

The research sheds light on inclusivity within the design field and several problematic issues associated with consumer product design in general and specifically, domestic packaging design.

Methodologies





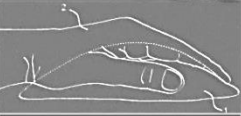
In this research a variety of methods were carefully chosen. These include desk based research, unstructured and semi-structured interviews, and three types of observations (personal observation, behavioral observation and objects observation).

Semiotic and visual analysis techniques were the most commonly used methodologies implemented in this study in order to question people's natural behaviors, reactions and relation with everyday consumer products. Case studies also shed lights on several amalgamations of indirectly related background studies that were the key motivation that influence the final packaging design philosophy such as 'Origami' (The Japanese of paper of paper folding) and 'Muqarnas' (The ancient Islamic architect). They both rely on mathematical and geometrical bases with repetitive units, and alter flat and curve surfaces to a three dimensional form. Bruce Mau "I am interested in the moment when two objects collide and generate a third one. The third object is where the interesting work is" (Alperovich 2007).

Conclusion

- * Interacting with consumer products and performing everyday tasks are not only the responsibility of the hands; there are several fundamental factors responsible for these issues such as the use of the vision, memory, cognitive matters, and mobility.
- * The palm of the hand needs to be supported like the arch in our feet.
- * The natural hand actions used throughout daily life have received little attention (James et al 2008). Most of the experiments, the observations and the analysis in this research show that hand performance and actions are mainly considered as being unnatural.
- * What makes packaging design more convincing is the combination of reasonable material, meaningful form, and durable function. This means promoting design affordance throughout simplicity, inclusivity, and self-explanatory form. The natural relaxed grip design can lessen the pressure and the stress on human hands and fingers. Consumer design as form lack affordance might mislead the user or suggest a capability that the product cannot afford (Margolin and Buchanan 1995: 166).
- * Design for all means equitable, adaptable, safe, informative and Self-explanatory usage and with minimum effort.
- * Product designer needs to balance between both intrinsic and extrinsic motivations (Margolin and Buchanan 1995: 168).
- * The most essential design issue, after packaging convenience, is the ability to open and the effectiveness of the closing mechanism.

Bell, C. (1833) The Hand, Lynette et al (2006) Human Hand Function, BT and I- Design Team (2010), The Department of Trade and Industry (DTI) Consumer Affairs Directorate (2002), Margolin, V., and Buchanan, R. (1995) The Idea Of Design, The Research Institute for Consumer Affairs (2000) Using Research to Identify Needs, James et al (2008) The Statistics of Natural Hand Movement

- * 'Origami' (the art of paper folding)
- * 'Muqarnas' (The ancient element of Islamic architect).
- * Hand skin wrinkles (Flexibility)
- * Supported hand arch

Figure 1: Human Hand Interaction Within Everyday Consumer Product Design (Said, 2010)

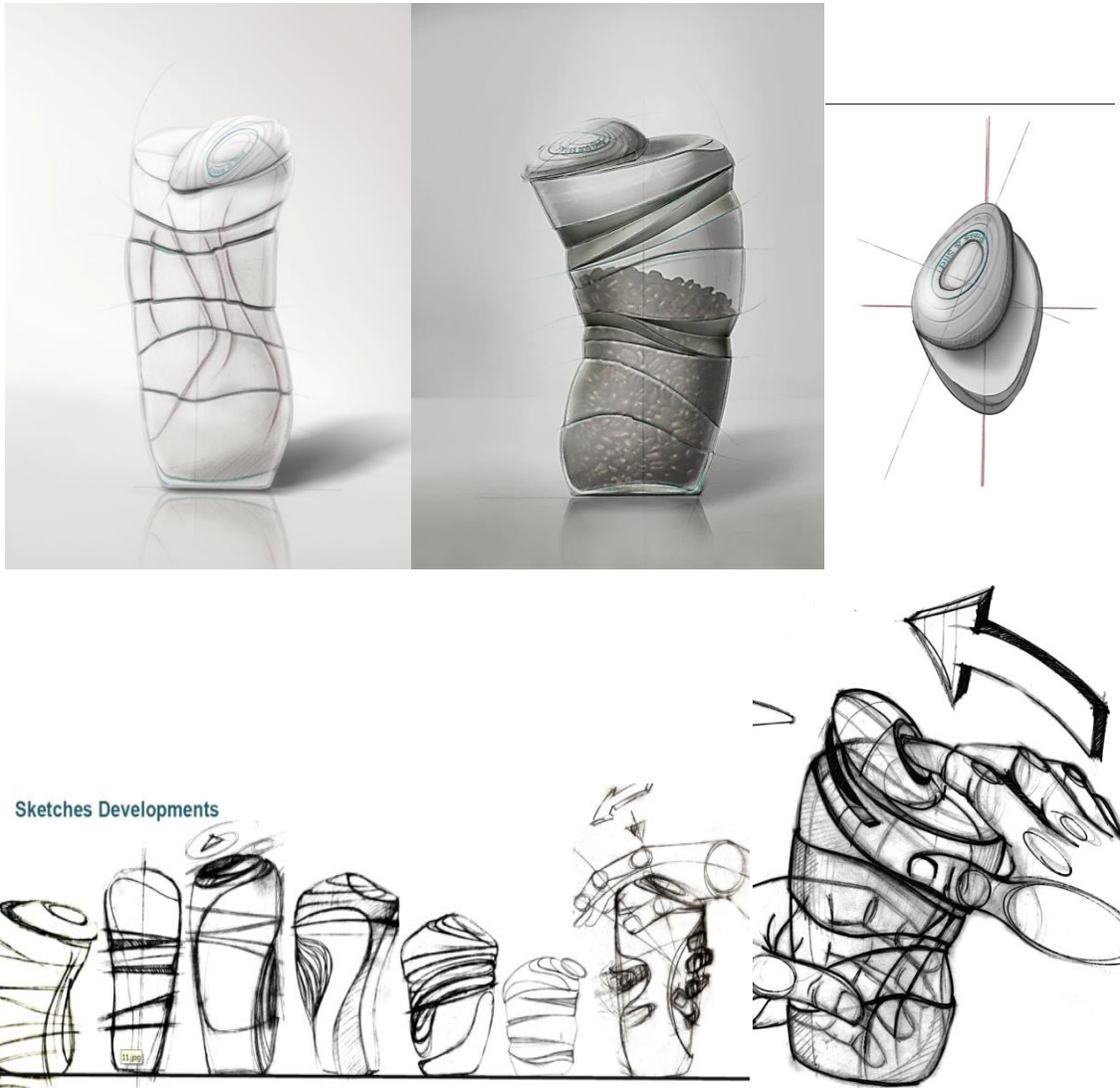


Figure 2: *Collapsible Origami Package* (Said, 2010)

Appendix 2 : Msc Project, Collapsible Cladding Structure (2010)



Figure 3: *Collapsible Cladding Structure* (Said, 2010)

Appendix 3 : Patrick Schumacher (2013) Interview Transcript

Schumacher, P. (2013) Interview Held on the 12th Of Feb 2013 by PhD researcher Lore Said.

Title: Collapsibility. Venue: Zaha Hadid Architects Studio London.

The conversation started without a defined question. We (me and Schumacher) were moving to a different room when Schumacher casually started to challenge the main topic of my research (i.e. collapsibility). This is by questioning whether the concept of collapsibility was used in my research as a metaphor rather than a constructive concept. An audio recording of this meeting is included in the CD enclosed with this thesis.

P- I'm kind of a sceptic if that term becomes a vague metaphor.

L- OK

P-... which could be when you slip in to the collapsible certainly no longer ...er... a clearly defined concept

L-OK

P-Right, because you have certain geometric principles and, em, I would say first of all it's the inverse of the first...principle of how you actually distribute metal out to create a body in space...

L- OK

P-... like...er... it's a pneumatic pressure...

L- OK

P-... of a balloon for instance or kind of lattice structure...

L-Yeah

P- ... like a molecule or bones the way they are kept. (Pause as Patrick talks to others...L & P moving/walking.)

P- Who is your supervisor?

L- Juliette MacDonald

P - Who?

L- Juliette MacDonald

P- Does she support the idea of the collapsible?

L- Yeah, I think it's more now about the practice, so I think that...

P- (you mean) how to imply...

P- (Patrick talks as walking up to the office then pause to talk to other people) (03:44)

L- Is that your office? No?!

P- Just a kind of a...library... (and laugh). OK, so ...er.. yeah, I mean that concept where you said this is a carpet, something, an object...

L-(nodding) Hmm...

P- or is it, I mean a wall-to-wall carpet is not an object, right? It's just a space for filing, background...

L -OK

P- ... but an area rug, you know what an area rug is?

L -Yeah

P-... could be seen as an object, right? Because this is interesting, degrees of objectness, objectness crystallisation. I don't see this how this connects to collapsed concepts, you see the different content and I would be very sceptical when you talk about psychological collapse because then we are, we're nearly in, we are, we are in a kind of vague metaphor for indeterminate talk. Then I wouldn't get what next you would say. It seems kind of...

L- Too open you mean?

P- ...too open and abstract, and there is only one, this engineer who has the book, *Collapsibles*.

L-And there are so many concepts that can be connected with collapsibility in, especially in engineering and design when you talk about space saving options and, eh, designs that deal with multifunctional, eh, furniture, or multiple...

P- Yeah

L- ...there is lots of...

P- Yeah, I mean the term compactness or miniaturisation might be more fitting for what you are talking about or it becomes ... or are you are thinking about folding up a bed and fitting it in to a cupboard, you know, these kind of.

L- Yeah, but...

P- You know pop up chairs, have you seen these?

L- Yeah

P- They come up out of the ground and this would be collapsible, you know, or collapsible folding chairs, is that something you would like to talk about?

L- Yeah, that's very interesting, yeah, basically I am trying to approach collapsibility far from space saving objects and more from...

P- Far from?

L- Yes, far from space saving objects I am trying to consider collapsibility as a reaction, so as a response and how this collapsible action that this object or that system I would call it, because that's what I am trying to say, would react differently when ... like I was talking to Tim Ingold, I don't know if you are familiar with his book? And he gave me an example about the spring and he said the spring is a collapsible object...

P- That's right.

L-...and ...er... he said that collapsing something is not always about releasing energy sometimes it's about, actually, about compacting energy and being able to re-use it and what I am more interested in is not something that you have...err... just to – I mean – reverse action, when you have a pressure, or apply some forces or loads on something to collapse but at the same time you are generating or probably not generating, probably producing also some power or some kind of force to re-bounce this energy back

P- It's only the spring you see. And you abstract some properties, you see, where would that lead? I mean, I think I do find the idea of ...err...pop up chairs, fold up beds, these kinds of things interesting ...

L- (nodding) Hmm...

P-...and you could be inventive with those, em, I could also imagine some kind of carpet which shifted and creates a pleat which you could use as a back to lean against or something, or you back cushions into the carpet, em, or bumps or something like this. Then you're in that..., and maybe they could also be inflated/deflated; these would be ideas you could bring into the concept of collapsible. More importantly, I would avoid something by hanging your project on to a word.

L - OK

P - It's more something – a series of features and properties no matter what names they have....

L-OK

(9:00)

P- ...which belong together, which have similar functions, which could live and work together in a space and we launched this thing called responsive environment, when you talk about furniture reacting, adjusting, adapting... that is something like, em, that relies also a bit also on sensors and actuators ... so this furniture has inbuilt touch sensors, or cameras or light sensors – might become, you know, a robotic environment... I'm not suggesting you don't go with the rules.

L- I mean, the project that I am working on recently is basically a very simple engineering model that I am trying to imply on a piece of... and this ... is kind of connected underneath, it's like the tissue, basically, based on tensegrity, so basically, if you have a fold.

P- So you have modelled it in 3D?

L -It's not ready, it's very conceptual, so I built it with kind of plastic folds and I built this sort of ... so I'm kind of suggesting when you press there this fold because it's connected...

P- Something else comes up -

L- ...will happen on that surface and that is kind of what I will suggest later is that those will be people. So, when people...

P- You mean – sounds interesting potentially, em, would you have the capabilities to... to, eh...model this properly and animate it?

L- Eh, I think...

P- With kinematics, dynamic modelling.

L- Yeah, I have now my friend who is an engineer who is helping me with the simulation part, I am doing the design part, the sketching and the dimensions, but what I am more...actually why I am here is because I thought that after reading this, I saw lots of potential in my project talking about virtual capacities and actual capacities and I find the carpet is one of them, one of those objects, and I just thought that talking to you would also direct me to the right people to contact in terms of who might be able to help if I want to manufacture a piece just to show to support my argument because I have kind of the conceptual frame ready and I think my theoretical base, which has been approved by my supervisors, they said it's well structured, but my, basically, the practice base bit which I am now starting with is em...(P: nodding) ...yeah, I don't expect you meet someone and you be very helpful, but I thought that if you found it interesting or exciting you would probably like to be part of it.

P- (laughing) It would be interesting to look at what...maybe in the abstract or something, but I mean what might be interesting for you to read ...I'm not sure if you are through with it.

L- I'm here...

P- OK, you've done this. For you... What comes to my mind is, what could be of interest...is these, eh, segments... (L: nodding, hmm) about... because your perception ... why I am saying is it's about what you see, you see lines here, there are no lines, right, (L: yeah) so the same would be, you see an object, for instance, this fold, does it become an object or is it just part of the background of the difference between what you see, black or white, eh, how do you decompose something, you know? (showing something) Are these two lines crossing or the two of these hooks meeting?

P- This kind of multiple reading, this could be a square between two lines or two 'Ks' an 'M' or a 'W'.

L- Are you talking about something like that? Because I created this to show how – I mean this – when I duplicate it, it become like a surface with slots in it. And the slots are basically here and there (pointing). So, they have slots here as well (P: interrupting), sorry, in between it becomes like flexible, so it, basically, kind of, what you...

P- So this is more about – eh – how you interpret the visual theme!?! So, I'm picking up your question: what is an object? Individual object? Or what is just a part of a larger object?

L- OK

P- And not an own object. And even, how do I identify, how do I count the parts? What do I count? (showing something) Look at this: how many parts are there?

L- OK

P- Is it three parts? Mainly two lines and a square? That's an interpretation of this. It's an interpretation.

L- OK (14:17)

P- Two 'K', Or this, so – eh – that's what I am talking about. And when you do this kind of pleats on in the floor, or you do other objects – you can – eh – I think there's an interesting abstract, eh, how do you decompose the scene you see. For instance, you have – eh – a floor pattern and this pops out to become a chair, right? (L: (nodding) hmm) So what face does it become...? The lower part has disappeared, you don't even have the outlines...

L- OK

P- ...then it starts to come out. Maybe it's still just a bump in the floor, it's not yet a separate object and when it's fully unfolded and you reckon it's a chair, then you might – eh – it might separate out as an object. So, it is – eh – it is a kind of subjective...interpretation...

L- Yeah

P- ...but ... which is guided by certain rules. The rules, for instance: what do we see as objects...and when we look at these principles: what is close together might be seen as one group although they're individual. If it is similar, it is even stronger to see these as a group and not this, even though it is as close. So, what do you consider to be a unit? What belongs together? What do you expect to function together?

L- Ahmm... (nodding) (15:44)

P- And the interesting aspect for me here is that this could be ambiguous, this could be virtual in a sense and multiple potentials that don't even rely on the fact that anything moves.

L- OK

P- Even just re-interpreting it and using in a new way you identify it as a unit in another action, you don't put it as part of a background, so I think this is, the difference between figure and ground is important and the question is: what becomes a unit of interaction? So, you have virtual units of interaction. These here, these things here are so obvious, right? This white chair in front of a black carpet. There is never a chance to not recognise that, right?

L- OK, yeah.

P- That if this is ??? out of a marble floor, then it's not so independent, right? And eh...

L- Can you measure this, though?

P- No, you can't. There is no measurement. It's eh, it's eh...

L- Like: independence of an object? Can you say this object is more independent than this? Like carpet is more independent than...

P- (interrupts) Yeah, you can... you can only compare the quality of assessment, not even measure. I don't think.

L- Subjective?

P- Not even subjective. It's a kind of inter-subjective quality. Most people agree. And if you explain, if you point them to a certain way of interpreting, they might follow you, although initially they might have interpreted differently. That's what I'm saying. If you have an area rug, which is even little of a shape, like this (pointing/showing something) or even this... it's a stronger form than this, in a room., and if it's a really rectangular area rug, which goes close to the edge of the room, here not. So, this one has a... this one has a stronger object quality.

L- OK

P- Also, because the convex, the curved outside and the convex form indicates objects.

L- OK

P- Right, the convexity and the closure?

L- That's very interesting.

P- That is something you recognise more as an object.

L- One of the observations during my analysis is that basically the carpet is ... Well, I was basing my analysis on the eh, Stewart Brand layering of building plans. So, he basically divides the buildings into these layers. And he said that if each one of these layers changes in different rate...and he put the carpet or with the stuff, but the stuff eh, kind of changing...is more quicker than the building or the interior element.

P- Yeah

(18:50)

L- And I would see the carpet is part of the interior elements, more than the stuff element. Because, eh you actually don't change it as quick...

P- Yeah. It has something to do with that, but, eh when you go into a room, you don't necessarily know the history of how much the things have changed, but it is another indicator. The loose objects, obviously, they move around and they can be replaced. The fixed and embedded objects are more permanent. But it's more a visual interpretation question. Because, you know, this eh, also something temporarily wanted becomes the focus of your intention and want to separate out. In architecture, it is again, in architecture you have no loose elements, anyway. So, everything is frozen and fixed.

L- Yeah

P- So, then, you really.... There are no easy criteria. Like this is heavy (Schumacher holds something) because I can't move it.

L- OK

P- But if you have lot of indoor furniture you don't have that criteria, but you still want to say: this is what you recognise as an individual object, or individual even part of a larger system, but it is still recognised as a part, which has a beginning and an end. Or something where you don't know where it begins, and which you than tend to, eh, not recognise as an individual object.

(20:23)

L- Do you think that the scale here is an issue?

P- Yeah! In the sense of... In the sense of, eh, conspicuity...separateness...I mean...It's not... It's not only an identification of individual objects but a unit of interaction – could also be groups of objects. For instance: if you put now a few years old sofa, two armchairs and a table...

L- Yeah

(20:56)

P- There's a degree at which it becomes a group, because they are close to each other, they are oriented to each other, they are similar to each other.

L- OK

P- If one, say, different colour and also looking – even at the same distance – looking this way (pointing out a direction), it is not part of the group.

L- OK

P- Yeah, and it's – it's, and if something slips off the carpet it's also not... So, there are different ways of – eh – and this leaves an important theoretical question of one of the chapters about that: how to identify units? Units of interaction. It matters, because when I'm coming in here (pointing) it's a unit because the three friends could sit together, they could use it together. If this is one unit and this is another, then two friends only and this one is not belonging to this. He might be something else. If this is a separate individual, you can sit down here and not disturb this. The public space, the arrangement of seating and so on – you're not going to join somebody else on a table, right? But if there's a small table touching and then the waiter comes and pulls it away five centimetres than you can seat somebody. There's exact the same distance, you can hear what they are saying but it's comfortable. It's more psychologically what belongs together, what can be used as a unit. And that is a perceptual game. That is what make me think when you said: “What is an object? What isn't an object? What is an element or a system? What belongs together? Where is one system beginning and stopping? Where is another system starting? Another group?” And the key frame is for me the unit of interaction, right?

(22:45)

L- Hmm (nodding)

P- What are the units? What are the unities? How do you count? Elements. Objects....

L- Actions

P- Within a group, how many parts? You know, how many parts does it have? Each of them two? Do these belong close to each other? Also: symmetries, relations, you know?

Eh [handling/disassembling something with clashing cups [with background noise] but they define a particular place, so this belongs closer together, right?

L- OK

P- So, like the cushion belonging into an armchair, right? The cushion is not so free, it's not – I mean – this is you know [with background noise of cups clashing] this is not something I expect. So, these are tight fitting here, this one is more free [loud noise] but here they are belonging[noise]. And these two kinds of belong together as a set. So, this becomes quite a, eh, and eh. And this, these two belong together. Why? There is both of glass, right?

L- Yeah

P- So you tend to see this more as a group, even if you put this here [pointing]. Similarity trumps proximity. This is a kind of thing we haven't spoken. This is the topic. Not so much. It doesn't matter how they go together. It's complex

(24:09)

L- Yeah

P- It's because there are guitars and bottles and this piece, this is the centre of the guitar and the top of a glass, so it becomes very ambiguous. Something which could be many things depending on how you look, interpret it. You see that? There's a guitar from here (pointing to image),

L- Yes. And that's why semiology. I am really struggling with ...

P- Not even semiology, this is, this is phenomenology. This is first of all identifying the object, the unit. Then interpreting it.

L- Yeah

(24:47)

P- Eh, all I, you can see labels and but here is also, here's a line down, because it's closer and here it's not about closeness but similarity. So, similarity trumps closeness eh, continuity of

curvature is important. So, this is always.... here's a figure and which one is the most likely interpretation? Which of these interpretations is the third one? This one!

L- Yeah

P- Here, this one, (pointing). And this is the principle of continuation, is the principle of closure, because...

L- I thought that this is more about movement, you know what I mean?

P- Yes

L- It's about motion, because here you can see a, two motions...

P- This is right, yeah. But more, the topic here is, look at this (showing), which part do you see?

L- Yeah

P- Which sub-object do you see? What is the unit of interaction? So, you think, ah, I take that line as an entity. Here, that line doesn't exist. Some other lines do. So, you can see here, there's nothing objectively given. It all depends on how you decompose the scene. From some other place I mean. How do you decompose that?

L- But always it's incorrect. This is the one that is...

P- Most likely...

L- Most likely. OK. So, the word 'most likely' is the word I'm looking for.

P- Yeah! 'Almost', you can say 'the privileged', 'usual', Let's say... There's a psychological law, according to them, that we have the tendency to see it this way.

L-OK. That's another word. OK. So, when you say and talk about semiology (in reference to the Schumacher book *The Autopoieses of Architecture*, Volume II,2012)and the need for considering this dimension when we design environment and spaces, you were talking about a new grammar, a new language.

P- Yeah

L - Would you associate this with this tendency? Because not many people would be able to interpret this kind of signs, isn't it?

(27:00)

P- Well, it's slightly different. I mean this is, this is for your precondition in order to know what the meaning of an element is. I need to first recognise it as an element which could have meaning, right? If I ... It's a precondition what these things are discussing under the dimension of phenomenology.

L- OK

P- Semiology, it has to do with perception. Which is an active creative act of recognising units and recognising units of interaction. And not necessarily know yet what they are used for or what they mean.

L- OK

P- All I know: 'Oh, there's an object there'. I have not seen it, but I can say there is an object which stops and starts here. That's the first. And then I can ask the question of meaning.

(28:02)

L- Which is affordance.

P- But if I don't even see the object, then I'll never reach the point of ask for the meaning. So... So, the first thing is the decomposition into units. And these units then might... The second questions are: What is the meaning? But the first question is: What are the units? And that's not given. That's always ambiguous in the environment.

L-... OK

P-

L- Yeah. For me, I'm starting with the word 'fold', so I'm starting with: What is fold? What is curvature? How you...

P- Yeah! Folding is interesting because you are immediately in a world of ambiguity! We don't know where a fold begins, where it stops.

L- Yeah, and eh...

P- And also whether you recognise... Would you recognise an individual fold? Or just if there are many, too many, it's just a rippled surface, then the individual fold is no longer identifiable, because you keep forgetting which one you wanted, you know...it's irrelevant...So at what point, I mean you're not interested in any individual fold. To see clear there is one. (29:16) Of course, you can find an algorithm how to count. Every turning eh, change of curvature you use as a segmentation device – mathematically. But that's not necessarily what your perception really would do.

L- Yeah. Talks about actually the inner fold and the outer fold. And he talks about how to basically separate, so he kind of says...

P- Whether a beginning or turning point. Maybe we had terms from up to down swing relative to ground surface or purely intern... (Someone is interrupting the conversation.)

L- Do you have another meeting now? Would you mind if we meet again? I'll come from Edinburgh; I am very much interested in...

P- I don't mind. It will be useful to see some of your sketches, what you are trying to do.

L- OK

P- Anyway, this topic I can see fascinating and contemporary design. You can also find examples of designers from Art Nouveau. Even I am discussing these things with Baroque and rococo. (30:40)

L- OK

P- You have a feeling of an object into the background and our own work. So, you can define design itself, show material and design and discuss them it in this sense.

(phone rings then Patrick goes to answer the phone)

(32:35)

P- I'm running out of time. I can see – I mean – there could be a project, em, and it could also be eh, so it could also have an interesting intellectual take, and tangible design, ideas which have a degree of, eh, functional, eh, competence. I mean, the purpose of these things for me is always to

create a real flexibility to build into the environment. Em, of course, through kinetic manipulation but even without – even though phenomenological reinterpretation.

L- Yeah, I would put collapsible, when you talk about connection, because I think having this...

P- (interrupting) Well, the word collapsible makes one think of “fold up” and making things disappear.

L- OK

P- “Reconfigurable” is a bit more open – I mean, collapsible is a kind of sub-set of reconfigurable, right?

L- Hmm

P- Should be obvious. A reconfiguration you can change, you can reconfigure a space. You can rearrange.

L- Or transform...

P- Transform, let's say transform. It's a more general concept than collapsibility, right?

L- OK, yeah.

P- I would suggest collapsing is one sub-set of transforming, namely making disappear.

What I find about transformability is the following: em – try to grasp what I am talking about is called parametric configuration: I have it at the very end again. You can find it in the index. At the very end they have a chapter about parametric configuration and also the phenomenological part. The idea is the following: that you can typically change a little bit – for instance, a separation is a movement, a very small movement or a little rotation which changes dramatically the configuration of the space. (35:07)

L- OK

P- So there is an economy of – So, if I say I moved this chair five metres over. What has happened? Nothing but the chair has moved five metres. Right? So, there is a kind of ...

But if I do something else – let's say I move, I'm rotating the chair by only three degrees, a much much smaller input. But now I change, I've broken the whole fifty metre long axis. I've opened

another diagonal space, so I totally changed the whole geometrical space by very little. No, I didn't do that. I only did that by changing the interpretation of the space. So, this means the space had latent configurations. The space was a little bit like this (showing/sketching something). A square with two lines. There's a small gap here to help me. No doubt this is in the space. Now if I shift this a little bit and I touch now here and then I separate here then suddenly I have two 'Ks'. The other reading becomes dominant.

L- OK, yeah.

(36:39)

P- With very little movement I'm doing a big change, because it's a new interpretation which is triggered. And the interpretation is very different. So, that's what I call this parametric reconfiguration. And this is also when an object is there or not there. Means: do I see it as an object or not? Might be very little which means to take place. Maybe the carpet is aligned to the edge, is not recognised a slight rotation or whatever or a secondary object, you know, it's a lot of alignments, symmetries, eh, continuities which you manipulate and re-establish. And that's what these drawings do. You know that things are multiple things at the same time. Just like this guitar that is at the same time this glass (showing a picture). There's a table and there's another shape. This is actually an armchair pushed against the table. So, there are many ways. This is in a painting. You can do more things there. But you can do something like this in real space as well. (37:57) There are sculptors – you know – give you an arch like this, but it is shifted like this (showing/sketching) so in the perspective from the point of view it still seems coherent but then when you look from here, when you change the perspective, suddenly there is... it is no longer at all.

L- Yeah

P- So that's collapsible. It disappears and something new appears. Nothing has changed. Only the position of the observer has changed. I call this the observer-parameter. And you don't even have to change anything physically. The purpose of this of course is that you have multi functionality.

L- Very interesting. So, you mean that seeing things, or visually.

P- Nothing really physically.

L - The actual ...

P- No. Only the movement of the observer or the lighting changes.

L- Hmm

P- You do that also with light and shadow. You have something on the wall with a Light is very little because it creates a big shadow if it's the same colour as the wall. Then you push the light onto then it disappears.

L- That's very interesting, because when I was doing the fold – just by changing the light over the fold it looked as if I was actually kind of folding them.

P- Yeah. Do you know these animations where you just change the lighting? And it looks as if the whole thing changes and moves?

L- Hmm

P- But nothing changed and moved. Only the light! Or the camera. This is part of the discourse that I call parametric configuration!

L-OK. (39:33) I think I haven't get there yet. Is it in the...

P- It's in the main chapter of the book. And there is a small chapter on parametric configuration where you can eh (searching for something in the book). Look, here (showing).

L- OK (40:15)

P- I worked on it but here.

L- Thank you. I don't want to take more of your time and I'm also...

P- Well, you can see where this goes. I mean ...

L- Would you recommend any people to talk to, like eh who worked with this, who might be able to help me with probably the functional (aspects)?

P- No, I don't know anybody who is... I can give references. I can give you something like Colin Rowe, eh, and also George Stiny. I mean, they will take you there, eh (searching for something) he worked on this psychological perception within architecture. Psychology, the psychology we were talking about perception. There are some references from architecture. Like Collin Rowe.

And George Stiny. He wrote a book called *Shape*. I mean, that's what I see there. You might have other things, but I find the – eh - your concept of collapsible – when you talk about collapsible so far – is for me not, eh, convincing. It is still not a clear enough concept and affect.

L- OK. Yeah, I think I have tried not to send to, eh, probably many abstracts before...

P- Ya, ya.

L- If you are willing to have time, so I will probably see you again?

P- Potentially

Appendix 4 : **Ingold, T. (2012) Interview Transcript**

Ingold, T. (2012) Interview Held on the 10th Of August 2012 by PhD researcher Lore Said. Title: *Collapsibility*. Venue: University of Aberdeen's Old Aberdeen (King's College).

An audio recording of this meeting is included in the CD enclosed with this thesis.

Ingold: We might tend to think that when something collapses, it's that all the force, all the energy goes out of it; but it could be the other way around. So, if you look at, for example, a spring, just an ordinary spring, like in a car suspension, and you pressed it down; then technically, that would also be a collapse. Wouldn't it?

Said: Yes.

Ingold: You have a spring, a spiral spring, and you pushed it down, but actually, all that energy... it means that there is a tremendous amount of potential energy in the spring that will shoot up if you take the pressure off, and in that case, the extended thing is the passive one, a spring that has sprung, that hasn't got any energy left in it, it's passive, while the one that is...

Said: Do you think that both of them are active (i.e. stretching and pressing the spring)?

Ingold: Well maybe both of them are active... it's just that it struck me that there is a kind of collapsing, which is like a balloon, I'm pricking a balloon. All the air goes out and the balloon is just a lifeless piece of rubber; but then, that is just one way around, but there is another way around where there is a kind of collapsing, which concentrates energy rather than releasing it like a spring; and maybe, I'm wondering whether in most practical cases, the following is true in both, that the sort of active and passive side of it followed and you cannot distinguish between them both.

Said: I guess what, probably, what we need, in this, the lifestyle, the current way of living, we need more options, and probably this means that more active situations!

Ingold: You are doing all this because you are working on product design, so the aim of it all is to ask, it's not simply to do some sort of abstract, rhetorical exercise of what might collapsing mean, which would be interesting in itself, but to enquire what role does... how can we make the

property... how can we make things that are able to collapse, how can we incorporate that into design so it is to help us with what we have to do. Something like that. So... so if... if then you were, let's say, for example, if you were a tent designer, then one of your priorities would be to produce something, which not only stands out well for the weather when it is erected and gives shelter and so on, but it has also to collapse into a very small pack so that you can carry it in your rucksack. That would be a very easy example and so, what you are suggesting is that there might be many other areas in life, in which we can do things like with the tent, which we can take in our rucksack and carry about. Perhaps, we don't make such heavy demands on the environment in terms of support and maintenance... so your point that we need more of a collapsible lifestyle, right?

Said: Yes, definitely. A sub-question of the research, focusing on this part that you mentioned is how to, probably, bring... I mean, because I'm using wrinkles, how can we wrinkle things; how can we add this collapsible quality to things (via wrinkling them) that don't have wrinkles, or need wrinkles, I suggested things like floor, walls, i.e. surfaces

Ingold: So as to make them more flexible?

Said: Not flexible, probably adaptable.

Ingold: Adaptable!

Said: The floor, the carpet, for example, is a collapsible thing, but after you put it on the floor it is not collapsible; but before, when you can roll it, it is; and even the wallpaper, so it's like we have collapsible materials (i.e. structure), but when we use them they become rigid again; so, how could we just have that balance between this two, passive and active status? Probably, use the quality of that material can offer and keep it collapsible somehow.

Ingold: I remember reading about tensegrity, have you come across it?

Said: No.

Ingold: It's the principle by which things hold together because counter-acting forces, of tension and rigidity; so, for example the yurt, the Mongolian yurt, would be a structure whose form is held

together by tensegrity, because of the mixture of strut and cord, which pull enough in each direction and that creates the coherence of the structure. It is actually the same with an ordinary tent. You put up a tent and you've got rigid poles and you've also got strings. The strings are flexible, you can roll them up, the poles are rigid, but the structure of the tent is held in place by the fact that the strings and the poles, the flexible and the rigid elements, are pulling against one another, so as to create a coherent structure, which technically you could probably lift off the ground and it would still hold. I remember reading an article in an American scientific magazine, years and years ago, explaining that there are all sort of structures, right up from the cell, in a body, right up to astronomical structures that are held together on this principle of mixing the rigid and the flexible elements.

Said: Probably you are kind of talking about, that, when the surface or the structure (design structure of a surface) can give flexible qualities to rigid things?

Ingold: Something like that, or vice versa, where it can give a rigid quality to a non-rigid thing. In lots of structure, even in nature, you can find many examples if you look around, you would find, if you looked to see how it is that things stay together and maintain their coherence. It's because there is a balance between the forces of tension and compression, so that the rigid element, which is compression and the flexible element, tension, and they balance each other. Probably the Forth Bridge works on that kind of principle too. You get that a mix of rigid and flexible elements and they hold each other in balance.

Said: Can you see this in a domestic environment? Can you think of any examples that work on those two opposites or that balance (i.e. tensegrity principle)? When there is uncertainty, there is certainty.

I read something to do with the fuzziness (fuzzy theory), where you have certain information that is rigid (exact), and then you have uncertainty about something else and you leave it flexible, and that it's called, I think in mathematics, fuzzy theory, if you draw a line, according to fuzziness, it is not very straight, it's not (gesture with the hand that indicate stables movement) it's (gesture with the hand that indicates fluctuating) with uncertainty.

Ingold: Ordinary, everyday environment, I just started thinking about washing lines, where you hang up your washing, and I don't know... traditionally in many British gardens, you would have a line, and it would be suspended between maybe a hook on the wall, and perhaps a convenient tree, and the line would go like this [curve] and the problem then is that at the bottom of the line your washing is too low, and it would be hitting the ground; so you take a long pole, a rigid pole, wooden usually, with a little notch at the top; and you put the pole on the ground, so halfway down the washing line, you put the pole in, you don't have to fix the pole to the ground, you just have it set, standing on the ground like here, and the notch in the way of the washing line keeps the thing in place, and it creates tension over that. The pole will lean as far as it can, and that stretches the line, so when you hang up washing it doesn't hit the ground. That's what makes it attractive, the principle of tensegrity that actually gravity, the force of gravity acting on that pole, makes the pole lean, and that leaning of the pole actually lifts the line, tenses the line, so that the washing, is lifted up, against the force of gravity.

Said: That's very interesting! That you're talking about all this; I'm having all these images of how it (an object) works against gravity. I have this example of the toothpaste tube as a collapsible structure, or the case of the sofa, which forms wrinkles when you sit on it, but when you are up (when the pressure and the weight goes it returns upwards to its shape gradually), I guess, it still has a reaction for a short time against gravity like the washing line. Washing line pole? Is that something old! Because I haven't seen anything similar around.

Ingold: Yes, nowadays, you don't see it very much. But in the past, when people lived in terraced houses, in the working-class areas, and each terrace would have a bit of garden just a strip, each house would have their own particular garden with fences dividing them, then when you hang out your washing the only way to do it was using a washing line.

Said: So, were they called washing "lines"?

Ingold: Oh, yes! They are still called washing lines. Even if you look at washing line design, there are all sort of curious structures, which are actually collapsible, things like... that there's a pole and poles touching off that you can put... you can drag out of the central pole and hang out.

Said: Yeah, they all have these hinges.

Ingold: It's a mixture of hinges and strings, so that's an example, and if you've got the washing line out, in the out position, that would be an example of tensegrity, that the whole structure itself is kept in place by the contrary forces of the rigid elements, usually metal, and the flexible element, which is the line itself. I'm sure you can think of various examples around the house.

Said: I'm wondering if I could ask you to draw a little diagram of an action of collapsible (visualising collapsible act); for example, if I say... the way I explain fuzziness, it's kind of a zigzag line, if I said, rigid you probably would draw something like a (stable) straight line, if I say collapsible action or collapsible performance, how would you visualise it, what is the first piece of visual language that comes to your mind? Specially that you work with lines (meaning you have done research that investigate lines), and I thought that probably having this (a piece of drawing) I don't know if you do mind!

Ingold: The first thing is... I think if you say... talk or use the word collapse, rather than collapsible, and talk to anybody just say: 'What's the first thing that comes to your mind?' They will probably think of people collapsing (gesture of motion downwards) because of an illness or a heart attack, or something like that. The image would be of a person literally falling to the ground, losing their strength to stand, so it's almost like something that was rigid and standing up...

Said: It's like a building collapsing.

Ingold: Yeah; like a building collapsing! It would be a bit like a snake charmer, I can imagine that there's a snake down there, and it falls, it relaxes. So, it's a... which means, I think, that probably when people talk about collapsing, not always, but often I think they'd think in terms of vertical dimension, which is...the thing standing up, so that they have some notion of uprightness and then collapsing would be the loss of that uprightness. You might argue that is a sort of very culturally loaded perception; you know that in the west there is long tradition of giving a moral evaluation to uprightness, the moral person is straight and stands up and people who sludge around [unintelligible] and don't stand up straight are not very good; but that is broadly specific to western culture; the Japanese are not interested in that at all.

Said: I'm from the Middle East and we don't have this either.

Ingold: You don't have that either; but it's very peculiar if here, we are brought up from the very beginning, so that would mean that just the resonance of this word collapse would probably be different depending on whether it's in a culture that places value on standing up straight or uprightness, verticality; but then, there are other sources notions of collapse such as mentioning something you might blow up, like my daughter's inflatable ring. She would like to play with it on a lake or at the seaside, but you have to blow it up, and then when you pack it up, you let all the air out and it collapses, and it has nothing to do with verticality.

Said: The way you relate verticality and collapse made me remember, when they talk about collapsing in politics. There're lots of ongoing arguments; in the news you might hear of governments collapsing (as both are used for negative connotations).

Ingold: All the time. Meaning, falling apart and losing coherence and direction, and it usually has got a negative connotation. When people talk about that something collapses, it means falling apart, it has lost direction, is not going anywhere; but it doesn't have to have a negative connotation...

Said: Yes, especially when you use as an adjective, as a collapsible it's actually got the ability to go back (positive connotation) to that repeatable action; so even if it goes from straight to... from a line to a point, this means that this point can go up again, so it's that ability to repeat actions; because something that collapses once, it's not a collapsible

Ingold: That's the crucial thing we are talking about when we talk about that spring example, again, in a way I'm thinking there are two possibilities, maybe a third somewhere in between, you squeeze the line down to a point and there is a tremendous compressed energy in that and it can bounce back again. The other kind would be the opposite, where, literally, when it collapses, it falls into nothing, and loses all its energy, and there is nothing left but inertia, and that would be two ways of what the relation between them is. If you take simply a point, I'm thinking of Kandinsky's work on lines and points, when he's talking about points, he sees them as a package of energy, you have a point and it's going to explode, all that tension and energy liberated; but you could say, that it is like a sink or a plughole, where everything just goes away.

Said: That's very interesting. I'm trying to draw something, a graphic that represents that idea and I'm finding myself drawing a point, and this point is moving so it's reminding me of the motion of a point, in Paul Klee?

Ingold: Oh, Paul Klee! Writes about moving a point, you move a point and you create a line.

Said: ...and moving a line creates a surface. It is movement and motion, and that what is collapsible is about; because when you were talking about the line that we can use the line in its static way, where line is all about movement! I think that leads to why we use static lines, probably if we think of lines in the sense of motion points as a movement, or possible movement, probably... etc. (this will lead to surface as motion).

Ingold: I had never thought about these things. It is really interesting. Someone wrote to me once, what would happen if the same kind of thing that you've done with lines but instead you did it with points, what would happen? And I said I wasn't quite sure; it did seem to be that it would be the same issue about the way in which trace can transform into traces and vice versa, with points could be marks on paper, like a full stop in writing, but they could also be bullets or ball bearing raindrops, anything could be points in the air, and then you have this interesting issue then of how one transforms into the other. Imagine for example, that it is raining, with big raindrops, very heavily, and you have a sandy beach. A raindrop, which is a point, falls on the beach, and it creates a little crater, which is also a point, and so all the energy in the raindrop dissipates on impact, but it leaves an imprint in the form of a crater, which it has no energy left because all the energy has dissipated.

Said: The energy has really changed its direction. Hasn't it?

Ingold: In a way, I suppose... imagine you shoot a bullet through a glass window and it makes a hole in the windowpane and there's a crack, and after that happens all the energy of the shot has dissipated and we have the damage to the window, so what was a moving point in that flying bullet has become the hole in the window and then the crack squirt going out from it takes the energy; they are the residues. Anyway, that takes us away from collapsible, because collapsible is not just about points.

Said: It is not. I find it very interesting because it reminds me of many things that I thought were far from collapsible. At one point, I was thinking how (divide action of collapsibility to points of sub-actions) to think of pre-action and post the reaction. Am I clear in this?

Ingold: Sort of. I'm thinking in the back of my mind about basketry, which is another really interesting area, where you are making a basket, and you're starting with rather flexible but springing material, willow, which you have to be mindful because it can spring back and hit you in the eye. It is elastic but it has a lot of spring in it and then you're making a basket and you have a lot of upright in it, and then you wind the willow around in and out, in and out as you go around, but the whole things holds together and has a rigid structure when you finish because of the springiness of the material, which is what makes willow fibres rub against one and other and creation a friction, and thus holding together. If willow didn't have that inherent springiness, then the basket would simply collapse, it wouldn't stand up. At the same time, that is not the structure is assembled out of the element, it's the willow structure, and when you are talking about wrinkles I somehow keep thinking of things like textiles and things made of assembled parts. Things in the household, which are assembled out of rigid elements, can be folded away.

Said: A (sliding) mobile phone (with a hand gesture)? When it is open and closed.

Ingold: Yes! Or A ladder, a common ladder; it is formed of the steps and the bit at the back that stops it from falling. That would be, technically, a collapsible structure, made completely out of rigid elements. It is collapsible because when it is not being used, you can fold it away, so as to not take up too much room. Imagine that all your bed sheets were inflexible, that would be huge.

Said: I'm looking at this in the opposite way.

Ingold: The human body, we have a rigid skeleton and then the soft stuff, soft tissues that are attached to it, and it is designed so that it wouldn't function without that rigid structure. There are other organic structures, invertebrate animals, which do not have a rigid structure attached to them.

said: So the shell is on the outside.

Ingold: Or they might not have one at all. Then you might not need any rigid thing, you might live your whole life, without that rigid element. I suppose that because we are ourselves, organisms that have these rigid and non-rigid elements, and we would collapse, we would collapse if it wasn't for that rigid structure, I suppose this means that we also have to interact, in order to interact with the world, with structures that have a similar sort of pattern to them in order to operate. I have not thought of that before but there is a possibility.

Said: The rigid, the skeleton and the soft and hard, remind me of so many things, like hair, the skin, things that constantly change their shape, their thickness depending on the way they are being used. We say the skin of the building, or the skin of the chair, but it is not the skin, because the skin has more than the texture, it is its whole structure(system), that we don't take into consideration when we say collapsible or skin material. It has the feel, but it doesn't really have the skin quality; probably, it has the texture and the skin patterns but, probably, talking about the tissues underneath that go vertically in the skin system, it is different, the way it attaches to the muscles, the way it attaches to the bones, all these kind of connections between those players. Probably the way you put it now, with the skeleton, can summarise this rigid/non-rigid balance.

Ingold: We were talking about human beings and the way they react in the environment, and, clearly, we have to think about the structure of the human body, in the same sort of terms as when we think about the structure of artefacts, because the human body is using these artefacts.

Said: Is there any book that talks about this balance between rigid and non-rigid and tension and compression?

Ingold: I think I read it up ages ago (Tim then went to look for it on his shelf).

Said: I found myself using this image, and now that you mentioned basketry I'm using this image on the first page of my research (Anders Krisár, Deform, 2011) and you just reminded me of it when you were talking about basketry. Every time my supervisor tells me that I have to explain why I'm using this picture from the very beginning, I always cannot answer that (probably) later, because I don't know yet; I just find it so strong, but I still probably need more reading to be able to persuade you that this is related to collapsible.

I would like to thank you very much for your time. I'm just worried how much time you have left for one quick question.

Ingold: Yes?

Said: (while the researcher was trying to find the image of Stewart Brand's building diagram, she was discussing random images that the researcher took for visual analysis purposes before moving to her main question) My question would be, this is Stewart Brand's vision of layers in architecture, and can we still think of this as a valid (method) with all the layers that we have added, this was in 1994...

Ingold: I have to tell you about a guy called Mike, who you really need to talk to. He is in product design and based at Strathclyde University, he did a PhD with us, in Anthropology as well as being a lecturer in the Department of Engineering and Design, and his work is specifically on surfaces, and he is starting off from this very issue of why it is that we tend to assume what Brand calls the service element, things like electric wiring, pipes and so on, are always invisible, so that they are underneath the structure, or embedded inside it, so that we don't actually see it, so his point is that because those pathways, along which materials and energies are conducted, are invisible, people are not able to follow the path of their activities in the environment, which leads to environmentally unsustainable ways of living. One could have more sustainable forms of product design if the pathways along which materials and energies move were placed on the outside, visible. That leads us to how to rethink the nature of surfaces, so that we don't think of surfaces as being superficial, to break that link between surface and superficiality so that, actually, the really important things that are going on are on the surface, and to overturn the assumption that what is on the surface that is just ... So, I get the impression that not many people are thinking along those lines, which I think we should be following. I certainly noticed that in Cultural Geography, and even Anthropology, there is little interesting, no one had paid any attention to surfaces; they had been interested in the floor, in what is going on the floor. All of the sudden a lot of people are getting excited about surfaces, and all people writing about smart textiles, they are saying, look, actually, we have this model of interaction, there is something going on where something sort of deep inside you and something inside me, and we are interacting by way of our outsides, that actually the place where all that is going on it is actually on the surface, so that would mean that

we might be looking in such a direction that, in the future, that leaves the relation between this green line and this blue one would be turned inside out, and that actually you couldn't be able to layer things up in quite that way because every layer would follow every other. I remember when (name of student) did a PhD in Architectural Design and her thesis was concentrated on the effects of CAD, computer assisted design, in Architecture, and I remember a bit where she was talking to an architect, who insisted on doing all his work with watercolours, and he didn't like CAD, and his argument was that with CAD it all works in terms of layers: you put a drawing on one layer and then you superimpose on another, then another and then another, and you can strip them back. The beautiful thing about watercolours is that you can put one wash of paint and then another wash of paint, but then all these layers, they are just like different shades of light on the surface of a lake.

Said: ...and they are horizontal and vertical

Ingold: What he was getting at was that with watercolours, you don't have layers, because all the colours merge into one and you can't tell which colour is behind it, and you can't disaggregate them. You should get in touch with Mike, because he would be really interested in what you are doing, and I think you will find lots and lots of common things to talk. He is based in the Department for Manufacture and Engineering Management, I think, at Strathclyde University. His email is, I think, either "M" or "mike", but I think it's "m". He's working on surfaces. He's very interested in sustainable product design, what is the relationship between sustainable product design and the way we think about surfaces, and the way we live, also about superstructure and infrastructure.

Said: When do you (i.e. we generally) actually stop calling things surfaces?

Ingold: Surfaces is a very problematic notion, because when you look very closely, it doesn't look like a surface anymore; it is like a forest. If you took a really close look at that carpet, it wouldn't look like a surface, but from a distance it is a surface. So, it is a very interesting and problematic thing, and there is no simple answer to what they are, which is why I think we need to think more about it. I should say that it is central to what you want to do as well. At least, if you want to think about collapsible, you need to think about surface as well. You couldn't separate out the two.

Said: This is one of the semiological analyses that I'm doing on wrinkles and collapsible, things like curtains and things we don't actually think of, like the wrinkles of the sofa (ideas), with the energy release, how we squeeze a bottle of washing liquid, to get out the liquid.

Ingold: There are all sort of ways in which we use collapsibility without thinking about it and compression is a very interesting one.

Said: The toothpaste tube is another example, although it is different in that you can see the result of your action, but in the case of the washing liquid, it returns to its original form.

Ingold: Everyone rolls down their toothpaste tube to squeeze out the last bit of toothpaste. No one has ever designed a toothpaste tube that has no need for rolling. Interesting! His address was actually "mike", I got it wrong.

Said: Thank you very much. I'm very grateful for your time.

Ingold: Not at all. I think we'll need to keep in touch because there's a group of people, who are working on surfaces and things like that, and I think there are some really close connections with what you are doing and their work. I will try to get you linked in, that would probably help.

Said: Thank you so much, and I would also like to send you (an update) of what I have done so far.

Ingold: Yes, that would be fine.

Appendix 5 : Research Visual Mind Map (2010)



Figure 4: Overview of the Research Visual Mind Map (2010)

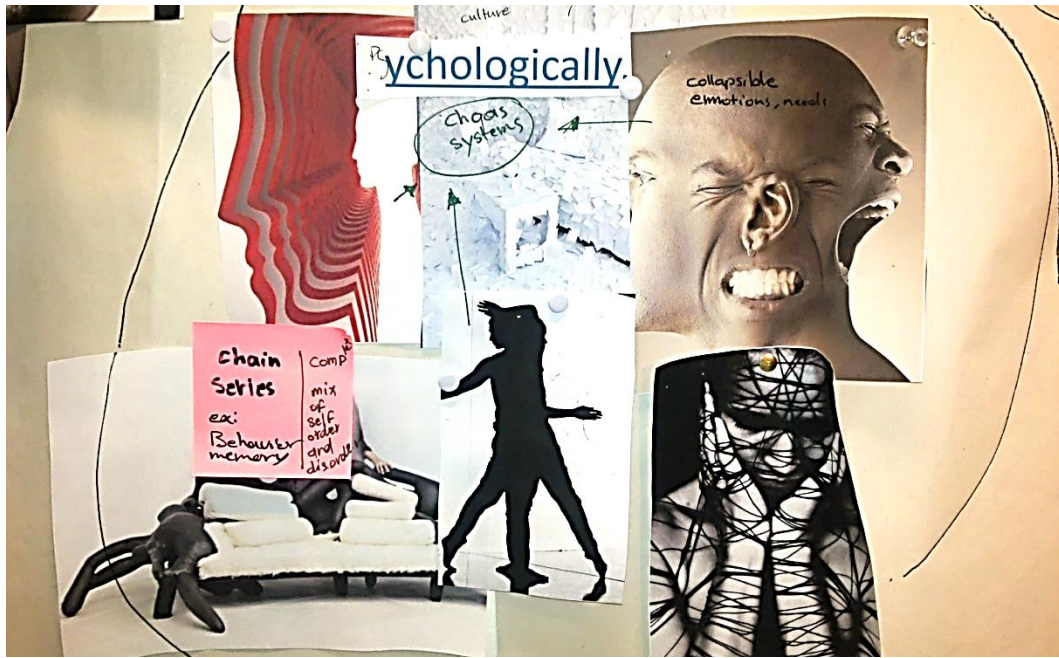


Figure 5: Theme 1, Humans Psychologically Collapsible (2010)



Figure 6: Theme 2: Are Human Systems Layers or Networks (2010)

Appendix 6 : MFA Workshop, The Everyday Collapsible Act (2012)

Workshop Title: “The Everyday Collapsible Act”

Contributors: Arno Verhoeven, Douglas Bryden, Lore Said, Product Design Ma/Mfa1

Date: 15-10- 2012 and 19-10-2012

Place: Edinburgh College of Art/School of Design

Project brief

Human are “collapsible” life forms? We collapse our identity, memory and objects every day; stretch, contract, inflate and fold to meet different needs (i.e. social, spatial and functional). Collapsible objects are repeatedly adjustable, expandable, shrinkable, foldable, inflatable, contractible, hinged, nest-able or roll-able objects. They are functional doubles with two opposite actions, one folded and passive, one (or more) unfolded and active, such as an umbrella or a newspaper. In everyday life, we can sometimes take the collapsible behaviours of an object for granted. For example, the tacit collapsible behaviour of a sofa wrinkling silently as a reaction of a body weight or a collapsible reaction of a toothpaste tube or a washing liquid package after applying pressure or squeezing it.

For the first part of this project, your task is to search for tacit collapsible behaviours wherever you like; streets, transport, home, people, nature etc. (see the above images for inspirations). You should pay attention to details and the meaning of ‘signs’ that indicate collapsible quality, such as folds and creases. Document your findings by taking (five pictures at least) a series of photographs, videos or making drawings etc. and explain why you think this or that is ‘collapsible’.

The second task is to analyse your findings and seek opportunities for implementing them into design non-collapsible objects or improving frustrating collapsible objects that don't work properly. Present your final outcome in storytelling presentations.

Project justifications

Enable students to identify, through research, questions, areas of poor consideration and weakness in existing objects.

Introduce students to the science of 'semiotic' signs and storytelling as a design tool in order to help them in their own work.

Draw the students' attention to collapsibility concept and its extensive types and mechanisms.

Introduce students to the use of video as an important analysis tool when they are searching topics that involve processes and motions.

Provide students with an insight into a PhD study.

Workshop programme:

Students will work in pairs

Monday October the 15th

10.00-10.15 - Introduction of the workshop outline, aims and activities

10.15-11.15 - Research presentation (The Everyday Tacit Collapsibility) by PhD Student Lore Said

11.15 -11.30- Questions and discussion

11.30-12-30 -Storytelling, semiotics (sign meaning) brainstorming workshop

Friday October the 19th

10.00-11.00 - Presenting the ideas and findings of the students (storytelling presentations)

11.00 -11.30 - Questions and discussions

11.30-1230 - Findings and design opportunities of the workshop

12.30-1.00 - Conclusion

Location to be confirmed

Appendix 7 : Workshop Consent Forms

- **The Original Form**

Research project title: *The Everyday Collapsible Act*

Research investigator: Lore Said

- I agree to participate in the workshop, *The Everyday Collapsible Act 2012*. Carried out by PhD Student Lore Said of the University of Edinburgh, to aid with her research on *The Concept of Collapsibility*.
- I have read the brief of the workshop and understand the aims of the project.
- I am aware of the topics to be discussed in a group.
- I am fully aware that I will remain anonymous throughout data reported and that I have the right to leave the workshop at any point.
- I am fully aware that data collected will be stored securely, safely and in accordance with the Data Collection Act (1998).
- I am fully aware that I am not obliged to answer any question, but that I do so of my own free will.
- I agree to have the focus group recorded (video and photography), so it can be transcribed after the workshop is held. I am aware that I have the right to change once it has been completed.
- I am aware that I can make any reasonable changes to this consent form.

Participant's Printed Name

Participant's Signature

Date



_____ **Lore Said** _____

_____ **6/09/2018** _____

Researcher's Printed Name and Signature

Date

Contact Information

This research has been reviewed and approved by the Edinburgh University Research Ethics Board. If you have any further questions or concerns about this study, please contact:

Name of researcher: Lore Said

You can also contact the student supervisor:

Name of first supervisor: Juliette Macdonald

If you have concerns about this consent form, you can contact the Ethics Committee, University of Edinburgh, ECA at eca.rkeo@ed.ac.uk.

- Participant A, Signed Consent Form Mr Richard Youel



THE UNIVERSITY of EDINBURGH
Edinburgh College of Art

Workshop Consent Form

Research project title: *the Everyday Collapsible Act*

Research investigator: Lore Said

- I agree to participate in the Workshop, *the Everyday Collapsible Act 2012*. Carried out by PhD Student Lore Said of the University of Edinburgh, to aid with her research on *The Concept of Collapsibility*.
- I have read the brief of the workshop and understand the aims of the project.
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- I am fully aware that I am not obliged to answer any question, but that I do so at my own free will.
- I agree to have the focus group recorded (video and photography), so it can be transcribed after the workshop is held. I am aware that I have the right to change once it has been completed.
- I am aware that I can make any reasonable changes to this consent form.

RICHARD YUVEL

Participants Printed Name

Participants Signature

14. 9. 18.

Date

Researcher's Signature

Lore Said

Researchers Printed Name and Signature

6/09/2018

Date

- Participant B, Signed Form Mr Thomas Hugin



THE UNIVERSITY of EDINBURGH
Edinburgh College of Art

Workshop Consent Form

Research project title: *the Everyday Collapsible Act*

Research investigator: Lore Said

- I agree to participate in the Workshop, *the Everyday Collapsible Act 2012*. Carried out by PhD Student Lore Said of the University of Edinburgh, to aid with her research on *The Concept of Collapsibility*.
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- I agree to have the focus group recorded (video and photography), so it can be transcribed after the workshop is held. I am aware that I have the right to change once it has been completed.
- I am aware that I can make any reasonable changes to this consent form.

THOMAS HÜGIN

Participants Printed Name


Participants Signature

7/8. 12018
Date


Lore Said
Researchers Printed Name and Signature

6/09/2018
Date

Appendix 8 : Per Mollerup Email Correspondences

Mollerup, P. [pmollerup@groupwise.swin.edu.au], 31 January 2011. Re: PhD Research, Lore Said. Email to Said, L. [lore-said@hotmail.com].

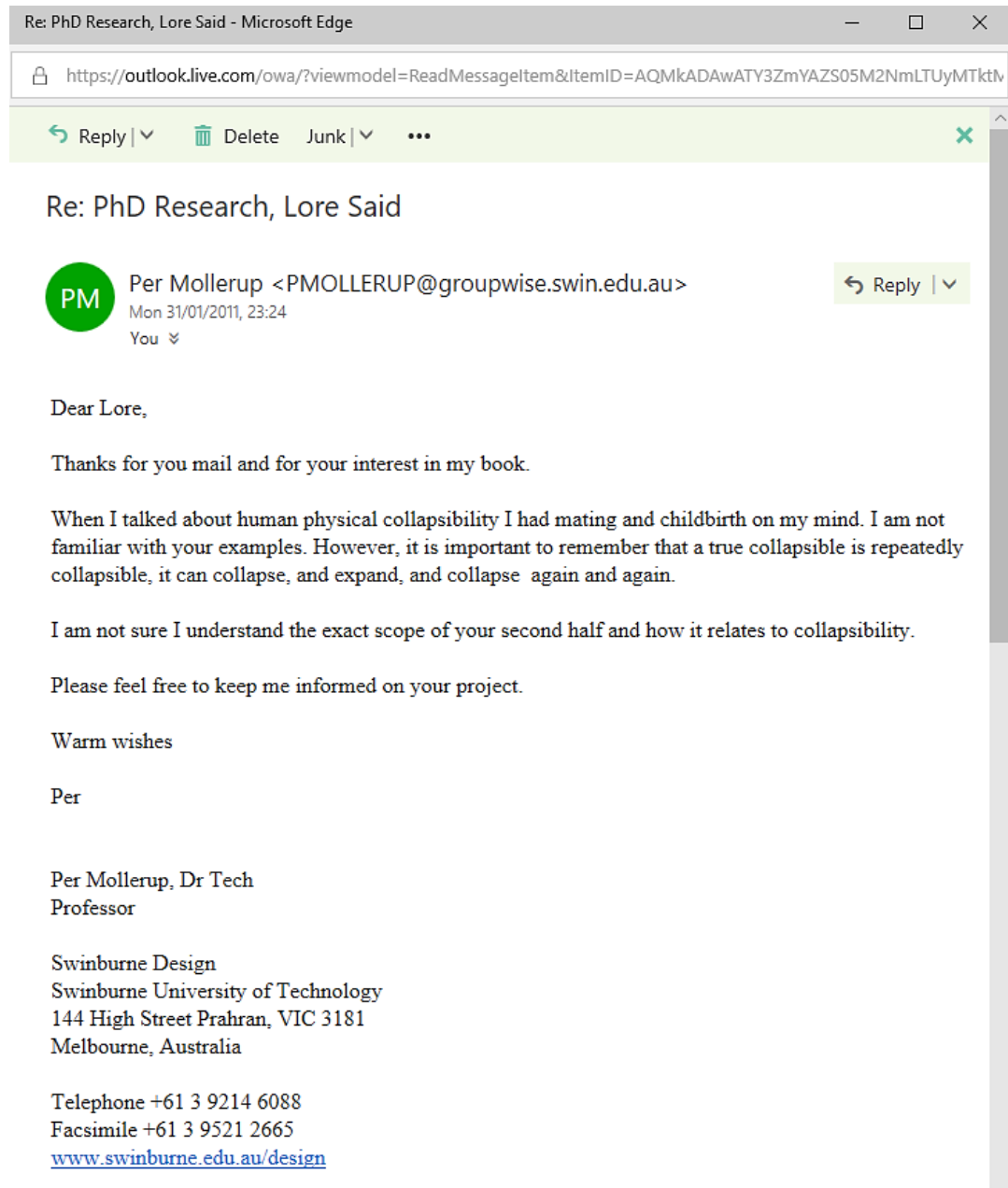


Figure 7: Mollerup Email Re 1 (2011)

Mollerup, P. [PMOLLERUP@groupwise.swin.edu.au], 22 October 2012. Re: Research on Collapsibility, Lore Said. Email to Said, L. [lore-said@hotmail.com].

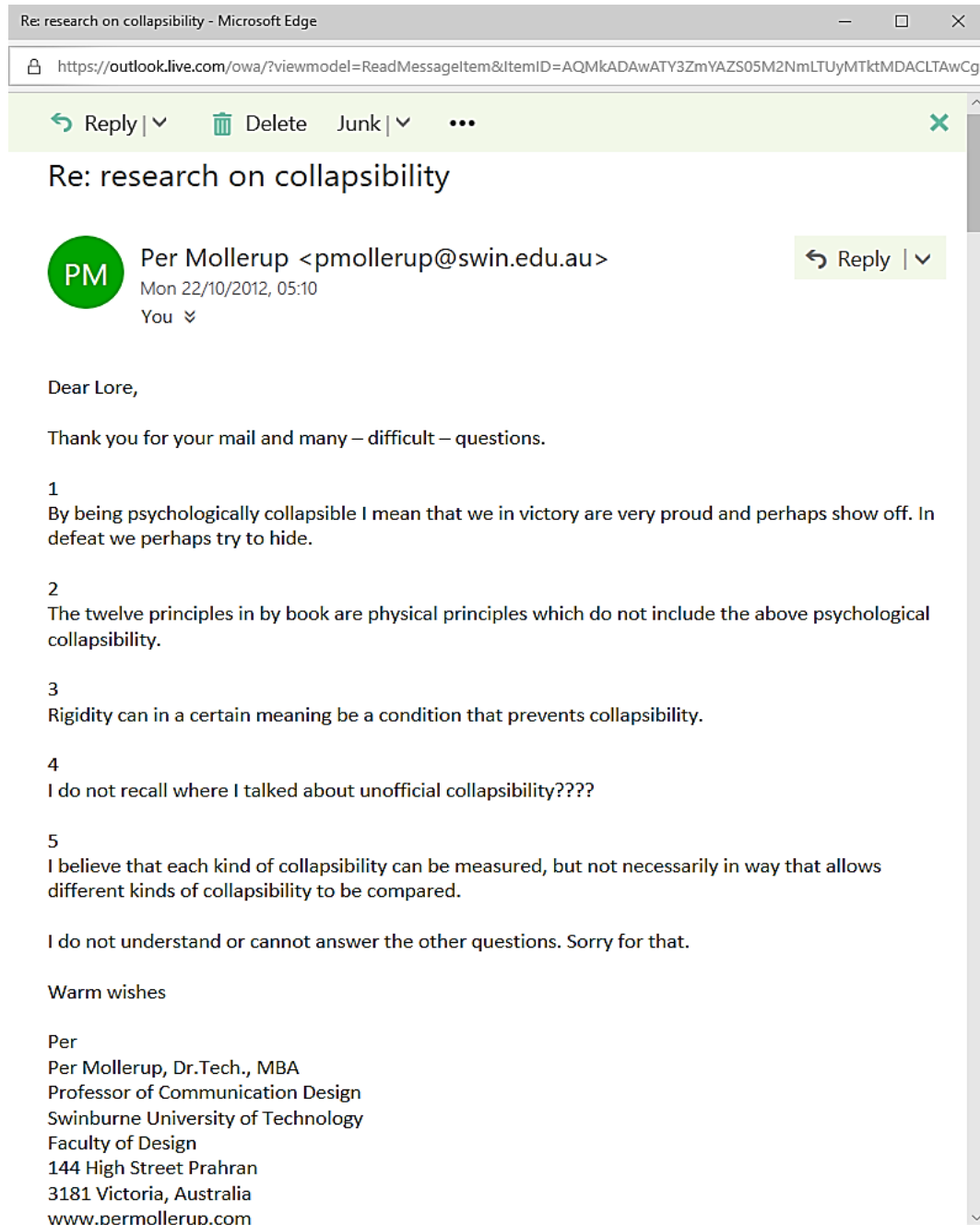


Figure 8: Mollerup Email Re 2 (2012)

Appendix 9 : The Original Images of Bedouin Tent Case Study



Figure 9: *Bedouin Boy in Wadi Rum* (Eviljohnius, 2005)



Figure 10: *Syrian Desert Tent Palmyra* (Traveldesignery, 2011)



Figure 11: *Bedouin Tent Palmyra Desert* (Traveldesignery, 2011)



Figure 12: *Bedouin* (Myphotopic, 2012) (Only the part marked in red used in the thesis)

Appendix 10 : Arabic Transcript and Translation of Two Interviews with Bedouins

• Arabic transcripts

سورية – دمشق 1-5-2015

الزميلة المحترمة لور سعيد

أتمنى أن تكوني بأحسن حال . وأشكر لك تفهمك لظروف بلدنا سلفاً ، علماً أن تأخري بإرسال المعلومات جاء نتيجة ضغط عمل خاص بي من ناحية . ومن ناحية أخرى بسبب صعوبة التنسيق مع أصحاب العلاقة كون البعض منهم يقيم في مناطق شبه متوترة ، وقد تم تأجيل زيارتي عدة مرات .

إحاطة عامة : قمت في الفترة الماضية بلقاء 4 أشخاص ولم أتمكن من الاستفادة إلا من شخصين فقط . وأنتظر الآن اللقاء بآخرين . لقد طرحت الأسئلة على الأشخاص باللهجة العامية وكانت الإجابات باللهجة العامية أيضاً وأحياناً البدوية . وقمت بعد تدوين الإجابات على الورق بتنسيقها و تفرغها بشكلها الحالي ، كما أرفق لك بعض المعلومات والرسوم التوضيحية التي أعدتها مسبقاً لمخطط بحث الماجستير الخاص بي وهي معلومات أولية لك مطلق الحرية باستخدامها أو الاستفادة منها . و أرسل لك ما حصلت عليه حتى الآن :

اللقاء الأول :

مع السيد **جاسم محمد العبلي** . مواليد ريف درعا 1943 وقد عاش الطفولة إلى عمر 14 سنة في تجمعات بدوية متنقلة ما بين بادية درعا و منطقة الجولان ثم انتقل إلى دمشق و حافظ على زيارته المنتظمة إلى بيئته و أقاربه حتى ما قبل أحداث سورية 2011 . مقيم حالياً في دمشق – مساكن برزة . و يميز السيد **جاسم العبلي** بين "الخيمة" و "بيت الشعر" حيث أن الأولى من الممكن أن تكون مصنوعة من أقمشة خاصة " شوادر" و تستخدم من قبل اللاجئين و من بسطاء المتنقلين على أطراف المدن ، بينما بيت الشعر هو حصراً من شعر الماعز أو وبر الجمال ويقطنه أبناء العشائر . ومعظمهم من ميسوري الحال و ممن يحافظون على تقاليدهم البدوية ويتفخرون بانتمائهم القبلي . و كلما ذكرت كلمة "خيمة" كان السيد جاسم يبدي امتعاضاً و يقول : نحن لم نقطن يوماً بالخيام و إنما ببيوت الشعر .

و فيما يلي الأسئلة التي طرحتها عليه و إجاباته عليها :

س1 - هل يتغير شكل الخيمة مع مرور الوقت ؟ يومياً ، شهرياً ، فصلياً ؟ ما هي هذه التحولات داخلياً وخارجياً و أسبابها وهل تؤثر حركة الأطفال والحيوانات أو الرمال العشوائية على شكل و بناء الخيمة ؟

ج1 - نعم يتغير شكل الخيمة بفعل الزمن وأحياناً بفعل الرياح والأمطار ، و التغيير الأهم هو في أواخر فصل الخريف متمثلاً بارتخاء "الشقوق"¹ . و سبب هذا الارتخاء هو تغير درجات الحرارة ونسبة الرطوبة . والرذاذ المتشكل صباحاً في الجو² . أما حركة الأطفال فتؤثر حين يتعلق الأطفال بالحبال بقصد اللعب . وبالنسبة للحيوانات فهي دائماً بعيدة عن أماكن السكن . وبما يخص الرياح والأمطار القوية فقد تؤدي إلى انقطاع أحد الحبال وقد يتطلب الأمر استدعاء العديد من الرجال للمساعدة في إعادة شد و تثبيت الخيمة قبل انهيارها بالكامل .

س2 - هل يتم تعديل الشكل الخارجي للخيمة بعد نصبه ؟ كم مرة في اليوم ، الشهر ، أو الفصل؟ ما هي الآليات المتبعة ؟

ج2 - لا يتم تعديل شكل الخيمة الخارجي فهي بالأساس مفصلة بقياسات تحدد العرض والطول والارتفاع و في حال رغب صاحب بيت الشعر بتوسيعه فهو يقوم بفك الخيطة التي تجمع بين "الشقوق" و "الرواق"³ وإضافة "شقوق" جديدة . ويمكن أن يكون التوسيع طويلاً أو عرضاً ويتطلب هذا التوسيع تغيير أماكن الأعمدة .

س3 - ما هي التغييرات التي تطرأ على الفراغ الداخلي بعد الاستخدام (الأرض، السجاد ، المفروشات ، الجدران ... الخ (ولماذا؟ ما هي العناصر الأكثر عرضة للتغيير ولماذا (الأوتاد - الأعمدة - الأرضيات - السقف .. الخ) ؟

ج3 - تتغير المفروشات عموماً كأي مفروشات أخرى بفعل الزمن . فقد تصاب البسط⁴ بالاهتراء و يعاد إصلاحها و خياطتها ، أما فرشاة و مساند الصوف فتتضرر و يتغير شكلها بفعل الاستخدام المتكرر ، والجدران تتأثر بارتخاء السقف أو الحبال ، فبيت الشعر - الخيمة - عموماً بحاجة شد مستمر . وبما يخص الأرضية فهي تتغير نحو الأفضل مع مرور الزمن و تزداد صلابة بفعل سير الأشخاص عليها و بتأثير أعمال التنظيف و رش المياه المتعاقب تصبح التربة مدكوكة و صلبة و نظيفة . . والعناصر الأكثر عرضة للتغيير هي أطراف الشقوق و أماكن اتصال الأعمدة بها . فهي بحاجة خياطة ، وتدعيم بوضع منسوجات إضافية تشكل سماكة و تعطي قوة لمناطق الاتصال تلك .

1 شقوق ج شق : هي طرحات شعر الماعز الممدودة التي تشكل السقف ، و هي مدات بعرض يقارب 70 سم توصل ببعضها ليكون عرض بيت الشعر بين 4 و 7 شقوق ، وتلفظ باللهجة البدوية SHGOUG بحيث يستبدل لفظ القاف بـ G .

2 يقصد بالرذاذ هنا الرطوبة الصباحية والضباب و ما يطلق عليه القرويون اسم " الندى " و تل أبو الندى هو بقعة جغرافية في الجولان السوري تشهد ظاهرة شبيهة بتشكيل الغيوم و تسبح غمامات الضباب هذه على سطح الأرض .

3الرواق : ويلفظ بدويًا ROUAG هو النسيج الذي يشكل الجدار الخلفي للخيمة و يكون متصلاً بالخيطة اليدوية مع الشقوق التي تشكل السقف .

4 بسط : ج بساط .

س4 - ما هي الروتينات المتبعة يومياً للحفاظ على الهيئة الداخلية للخيمة (تنسيق و تعديل العناصر الداخلية من أرضيات و ستائر وغيرها ؟ كم مرة في اليوم يتم إعادة تنسيق الفراغ الداخلي ؟

ج4 - تقوم ربة البيت بأعمال التنظيف و الترتيب بشكل يومي حيث يتم إخراج البسط والأغطية و نشرها على الحبال للتشميس و إزالة أي أثر للرطوبة ، ثم إعادتها للداخل و يتم ذلك بحسب الحاجة⁵ كما تقوم بإصلاح الخيافات المفكوكة و غيرها من أعمال الصيانة . أما تنظيف الأرضية - الأرض الأساسية وليس البساط - فيكون بمكنسة القش و يرش الماء أثناء التنظيف و تفتح جوانب البيت للتهوية وتجفيف أي أثر للرطوبة .

س5 - يتماها الداخل والخارج في الخيمة البدوية بحكم عدة عوامل أهمها علاقة البدو مع بيئتهم المحيطة والجوار كيف أثر ذلك على تحديد المساحات ، الملكيات و توزيع العناصر بين داخلي وخارجي ؟

ج5 - لا توجد محددات لحرم بيت الشعر "الخيمة" أما توزيع المفروشات بالخارج فهو غير موجود لأن بيت الشعر يصبح بنفسه " خارج " عند فتح الرواق و يبقى الأشخاص تحت ظل الشقوق .

اللقاء الثاني :

مع السيد **توفيق محمد موسى** . مواليد الرقة 1972 وقد عاش الطفولة والشباب في مدينة الثورة / محافظة الرقة ولأسرة توفيق أقرباء⁶ يقطنون بيوت الشعر في ريف الرقة يزورونهم باستمرار بالعطلة والأعياد و أحياناً كانت تستمر زيارتهم لأشهر . تقع هذه التجمعات قرب بعض القرى التي تعمل بالزراعة و تربية الأغنام . يعمل توفيق الآن بمجال الرسوم المتحركة و هو خريج كلية الفنون الجميلة بدمشق / قسم النحت - يحمل درجة ماجستير و يقوم بالتدريس في كلية الفنون . و أنا على موعد قريب مع والده لأخذ تفاصيل أخرى حول الخيمة كما يراها و هو من تولد ثلاثينيات القرن الماضي .

و فيما يلي الأسئلة التي طرحتها على توفيق و إجاباته عليها :

س1 - هل يتغير شكل الخيمة مع مرور الوقت ؟ يومياً ، شهرياً ، فصلياً ؟ ما هي هذه التحولات داخلياً وخارجياً و أسبابها وهل تؤثر حركة الأطفال والحيوانات أو الرمال العشوائية على شكل و بناء الخيمة ؟

ج1 - بالطبع يتغير شكل الخيمة مع مرور الوقت وهذا التغير يتبع للظروف الجوية (أمطار - رياح - رطوبة) وإجمالاً فهذه التغييرات محصورة بارتقاء " الشقوق " والحبال ، وهذا التغير قد يكون بشكل متدرج بحيث تحتاج الخيمة للشد و التقوية كل ما تعرضت للرياح أو الأمطار . أما في حال كان الشد بالحبال متيناً والظروف الجوية هادئة فالتغير يكون غير ملحوظ و قد لا يطرأ أي تغيير على الخيمة لعدة أيام . و تؤثر حركة الأطفال على الخيمة بفعل اللعب والتعلق بالحبال

⁵أي كلما كانت المواد بحاجة أشعة الشمس و ذلك بسبب الرطوبة غالباً .

⁶أقرباؤهم الجد والجدة و عموم الأعمام والأخوال . وهم من منطقة (معدان) بريف الرقة الغربي .

أو الاختباء ببعض الزوايا . ولكن الأهل و باستمرار يمنعون الأطفال من التعلق بالحبال و غيرها من الأعمال التي تؤثر على استقرار الخيمة . أما الحيوانات فهي دائماً بعيدة عن الخيمة وتخصص للأغنام مساحات محاطة بالشبك المعدني . وبما يخص الرمال المحمولة بالرياح فهي جارحة و مؤذية للأشخاص وليس للخيمة ، وعند هبوب الرياح القوية يتم إغلاق الخيمة بالكامل وترخية الحبال من أجل إكساب الخيمة مرونة في مواجهة الرياح من أجل تجنب انقطاع الحبال الذي قد يؤدي إلى انهيار الخيمة .

س2 - هل يتم تعديل الشكل الخارجي للخيمة بعد نصبه ؟ كم مرة في اليوم ، الشهر ، أو الفصل ؟ ما هي الآليات المتبعة ؟

ج2 - في فصل الصيف تبدل شقوق شعر الماعز السوداء بنسيج قطني أبيض يسمى "القياطي"⁷ من أجل تخفيف حرارة الصيف . وتعاد لتنصب الشقوق السوداء شتاءً . أما الشكل الخارجي للخيمة فلا يتم تعديله ، لأن الخيمة تفصل بأبعاد ثابتة كبيرة أو متوسطة أو صغيرة . ولا يمكن إضافة مساحات أخرى إلى الخيمة إلا في حال رغبة أصحابها بتوسعتها طولاً أو عرضاً ، وهذه العملية تتطلب إعادة تفصيل و خياطة "الشقوق"⁸ من جديد .

س3 - ما هي التغيرات التي تطرأ على الفراغ الداخلي بعد الاستخدام (الأرض، السجاد ، المفروشات ، الجدران ... الخ) ولماذا ؟ ما هي العناصر الأكثر عرضة للتغيير ولماذا (الأوتاد - الأعمدة - الأرضيات - السقف .. الخ) ؟

ج3 - تتعرض بعض المنسوجات كالبسطة و القواطع الداخلية و أغطية الفرش للاهتراء بفعل الاستخدام ، أما الأكثر عرضة للاهتراء فهو سقف الخيمة "الشقوق" في المنطقة التي تعلو موقد نار القهوة وهذا الاهتراء يكون بسبب حرارة نار الموقد الصاعدة نحو السقف . و يتم تجديد الشق المهترئ أو استبدال الجزء التالف منه بقصه و خياطة قطعة أخرى بمكانه . و يجدر بالإشارة أن موقد الخيمة يكون فقط لتحضير القهوة . في حين أن أعمال الطبخ تتم بعيداً عن الخيمة . ما الأعمدة فلا تتأثر بفعل الزمن لخفة حمولاتها .

س4 - ما هي الروتينات المتبعة يومياً للحفاظ على الهيئة الداخلية للخيمة (تنسيق و تعديل العناصر الداخلية من أرضيات و ستائر وغيرها ؟ كم مرة في اليوم يتم إعادة تنسيق الفراغ الداخلي ؟

ج4 - الروتينات المتبعة هي أعمال شد الحبال ، وتفقد أماكن الخياطة و الوصلات بين الشقوق . وكذلك أعمال الترتيب والتنظيف و رش الماء بمحيط الخيمة و تنظيف موقد النار من الرماد وهذه الأعمال تتم بشكل يومي . وفي حالات الطقس الجيد يتم فتح "الرواق"⁹ وتشريع "البيت" لتجفيف الرطوبة وتشميس المفروشات . وغالباً ما يتم تشريع البيت بعد انتهاء

⁷القياطي : وتلفظ القاف G . وهذه اللفظة مشتقة من القبط - حر الصيف -

⁸الشقوق : تم شرحها سابقاً في الحاشية الأولى .

⁹الرواق : تم شرحه سابقاً وهو الجدار الخلفي للخيمة **ROUAG** وتسمى عملية فتح الرواق بـ " التشريع " .

المطر .وفي حالات الأمطار يتم حفر مجرى للماء حول الخيمة يمكن بمثابة مسار لتصريف المياه وإبعادها عن الخيمة .
وتسمى هذه العملية "التونية"¹⁰ .

س5 - يتماها الداخل والخارج في الخيمة البدوية بحكم عدة عوامل أهمها علاقة البدو مع بيئتهم المحيطة والجوار كيف
أثر ذلك على تحديد المساحات ، الملكيات و توزيع العناصر بين داخلي وخارجي ؟

ج5 - لا تحدد المساحات والملكيات بواسطة محددات . وإنما يتم تقديرها من قبل الآخرين تقديراً

10التونية : صاحب الخيمة يُؤني خيمته : أي يحفر حولها مجرى لتصريف مياه الأمطار .

- **Translations**

Syria –Damascus 1-5-2015

Honorable colleague Lore Said

I hope you are doing well. I thank you in advance for understanding the circumstances of our country, knowing that the delay in sending the information came as a result of my work pressure on the one hand. And on the other hand, because of the difficulty of coordination with Bedouins because some of them reside in areas that are semi-tense, all have been postponing my visit several times.

General briefing: I recently met four people and I only was able to benefit from two of them. I have now been asked to meet others. Questions have been asked to people in colloquial language, and answers have been spoken in colloquial dialects, sometimes nomadic dialects. I wrote the answers and then organised them as below. I also attached illustrations that I have prepared for my master research plan which is preliminary information you are free to use if you find useful. Here is what I have so far:

First interview:

With Mr. Jassem Mohammed Al-Abli. Born in the village of Daraa 1943 and lived to the age of 14 years in the Bedouin communities of the mobile between the Daraa and Golan Heights and then moved to Damascus and kept visiting his relatives until the events of Syria in 2011. Currently residing in Damascus - Barza housing. Mr. Jassim Al-Abli distinguishes between "Al-Khayma" and "house of hair". The first one can be made of special fabrics and used by refugees and ordinary travelers on the outskirts of cities, while the 'house of hair' is exclusively made of goat or camel hair and of the inhabitants descended from tribal roots. Most of them are well-off and maintain their Bedouin traditions and boast of their tribal affiliation. Whenever the word "tent" is mentioned, Mr. Jassem shows resentment and says: "We have never dwelled in tents, but in 'hair houses'."

The following are the questions I asked and his answers to them:

Q 1 – Do Bedouin tents change their configurations through time? Daily, monthly or quarterly? How do these changes manifest in the interior and exterior of a Bedouin tent? And do movements of children and animals or sand affect the configurations of the tent?

A1–Yes, the configuration of the tent changes by time and sometimes by wind and rain, and in particular in the late autumn after the "cracks"¹¹ relax. The reason for this relaxation is the change in temperature and humidity. Also, the dew formed in the morning. The movements of children affect, especially when they hang on the ropes while playing. Regarding animals, they are often far from dwellings. In the case of strong winds and rain, it may lead to cut one of the ropes. It may be necessary then to call several men to help re-tighten the tent before it falls completely.

Q2 – Does the structure of the tent get modified after installing? How many times: a day, month, or season? And what are the methods?

A2 – The exterior of the tent does not get modified. It is made with measurements of width, length and height that are predetermined. If the owner of the ‘hair house’ wishes to expand it, he will remove the sewing that joins the ‘cracks’ and the ‘gallery’ (corridor) to add new cracks. The expansion can be either of the length or width and this expansion requires a change in the position of the columns.

Q3 – What kind of changes occur in the interiors of the tents after use (floor, carpets, furnishings, walls, etc.) and what are the most changing architectural elements and why (wedges, poles, floors, ceiling, etc.)?

A3 – Furnishings generally change as any other furniture due to distress by time. Rugs are often worn, then repaired and sewed. Wool mattresses and cushions are compressed and changed by frequent use. Walls change when the ceiling or the ropes relax. Generally speaking, the ‘hair house’ needs constant adjustment. As for the floor, it changes for the better over time and the sand

¹¹Cracks: are the fabrics of the goat hair that form the ceiling. They are about 70 cm wide. They reach between the four and seven cracks.

becomes slightly firmer as people walk on it. Also, as a result of cleaning and spraying regularly with water, the sand becomes compact, firm and clean. The most vulnerable and changing architectural elements are the edges of the cracks where the columns are connected. They need stitching and reinforcement by placing additional textiles in order to thicken and give strength to those connecting areas.

Q4 – What are the daily routines to maintain the interiors of the tent? And how often through the day do interiors have to be rearranged?

A4 – The housewife works, cleans and arranges the interiors on a daily basis; the carpets and bed covers are spread outside on the ropes for sunning and getting rid of any moisture. They are all then returned to the interior when needed. If something in the interior of the tent needs repairs, she (the housewife) sews what has been unfastened and does other maintenance work. Cleaning the ground, not the not the carpet/rugs, is by straw broom (when it is firm) and sprinkling more water during cleaning. The sidewalls of the ‘hair house ’also open for ventilation and drying any traces of moisture.

Q 5 –The interior and the exterior of the Bedouin tents are fused because of several factors, including the relationship of Bedouins with their surrounding environment and their communities; how has this affected the classification of boundaries, ownerships and the distinctions of what is public and what is private?

A 5 – There are no determinants for the sanctuary of the ‘hair house’ and the distinction of public is not present because the ‘hair house’ when opened, it becomes ‘outside’; when opening the ‘gallery’, people live under shows of ‘cracks’.

Second interview:

With Mr. Tawfik Mohamed Moussa. Al-Raqqa 1972. Children and youth lived in the city of Al-Thawra/Al-Raqqa Governorate. Tawfik’s family has relatives that live in ‘hair houses’ in Al-Raqqa countryside and he visits them regularly during holidays and Eids and sometime lives there for months. This Bedouin community is located near villages that are engaged in agriculture and herding. Tawfik is now an animation designer and is a graduate from the Faculty of Fine Arts in

Damascus. He studied sculpture. He holds a Master's degree and teaches at the Faculty of Arts. I also planned an interview date with his father in order to gather more information about Bedouin tents and the way he perceives them because he was born in the thirties of the previous century. (Risheh implies that Tawfik's father might have a different view because he is from an older generation and lived in 'hair houses' for a long time.)

The following are the questions I asked Tawfik, and his answers:

Q 1 – Do Bedouin tents change their configurations through time? Daily, monthly or quarterly? How do these changes manifest in the interior and exterior of a Bedouin tent? And do movements of children and animals or sand affect the configurations of the tent?

A1 – Of course the tent changes its configuration over time. This change follows the weather conditions (rain, wind and humidity). In general, these changes are loosening of the 'cracks' and ropes. This change often happens gradually, so that the tent needs to be tightened and reinforced overtime when there is wind or rain. If the ropes are tight and the weather conditions are calm, the change is not very noticeable and there is perhaps no need for adjustments for several days. The movement of children affects the tent by playing and hanging ropes or hiding in some corners (stretching the fabrics). But the parents constantly remind children that hanging on the ropes and other actions affect the stability of the tent. The animals are always far from the tent and allocated to the sheep areas surrounded by metal mesh. Winds that carry sands are harmless to people, not to tents. When this wind blows, the tent is fully closed, and the ropes are relaxed so that the tent is more flexible with the wind. This is to avoid rope cut, which could cause the tent to fall down.

Q2 –Does the structure of the tent get modified after installing? How many times: a day, month, or season? And what are the methods?

A2– In the summer, the black goat hair cracks were replaced by a white cotton fabric called 'kyazi' for reducing the heat of summer. The black 'cracks' are reintroduced in winter. The configuration of the tent is not modified, because the tent is tailed with predetermined dimensions; large, medium or small. Unless the owners wish to expand its length or width, then this process requires undoing and renewing the 'cracks' again.

Q3 – What kind of changes occur in the interiors of the tents after use (floor, carpets, furnishings, walls, etc...) and what are the most changing architectural elements and why (wedges, poles, floors, ceiling, etc.)?

Some fabric that are used as rugs, ‘breakers’ (wall partitions), or mattress covers are worn out by use. The most prone to wear is the fabric of the ceiling, the ‘cracks’, especially the area above the coffee stove. This is due to the heat of the fireplace rising to the ceiling. The worn part is renewed, or the damaged part is cut, and another piece is sewn. It should be noted that the tent stove is only for preparing coffee. Cooking is often outside the tent. The poles do not change through time.

Q4 – What are the daily routines to maintain the interiors of the tent? And how often through the day, do interiors have to be rearranged?

A4 – The routines used are often tightening the ropes and inspecting stitching and jointing between cracks, as well as cleaning and spraying water on the sand (to keep it dense), also getting rid of the ashes in the coffee stove done is on a daily basis. In good weather conditions the ‘gallery’ and ‘house’ (the tent) are lifted open to dry any moisture and the soft furnishings put out for sun screening after rain season finishes. In the case of heavy rain, the owner drills a small channel to discharge the water far from the tent.

Q 5 –The interior and the exterior of the Bedouin tents are fused because of several factors, including the relationship of Bedouins with their surrounding environment and their communities; how has this affected the classification of boundaries, ownerships and the distinctions of what is public and what is private?

A5 – Spaces boundaries and ownerships are determined by fixed determinants, yet vaguely estimated and appreciated between people.

Appendix 11 : Design Themes Related to Sustainability in the Harrogate Flooring Conferences (2013)

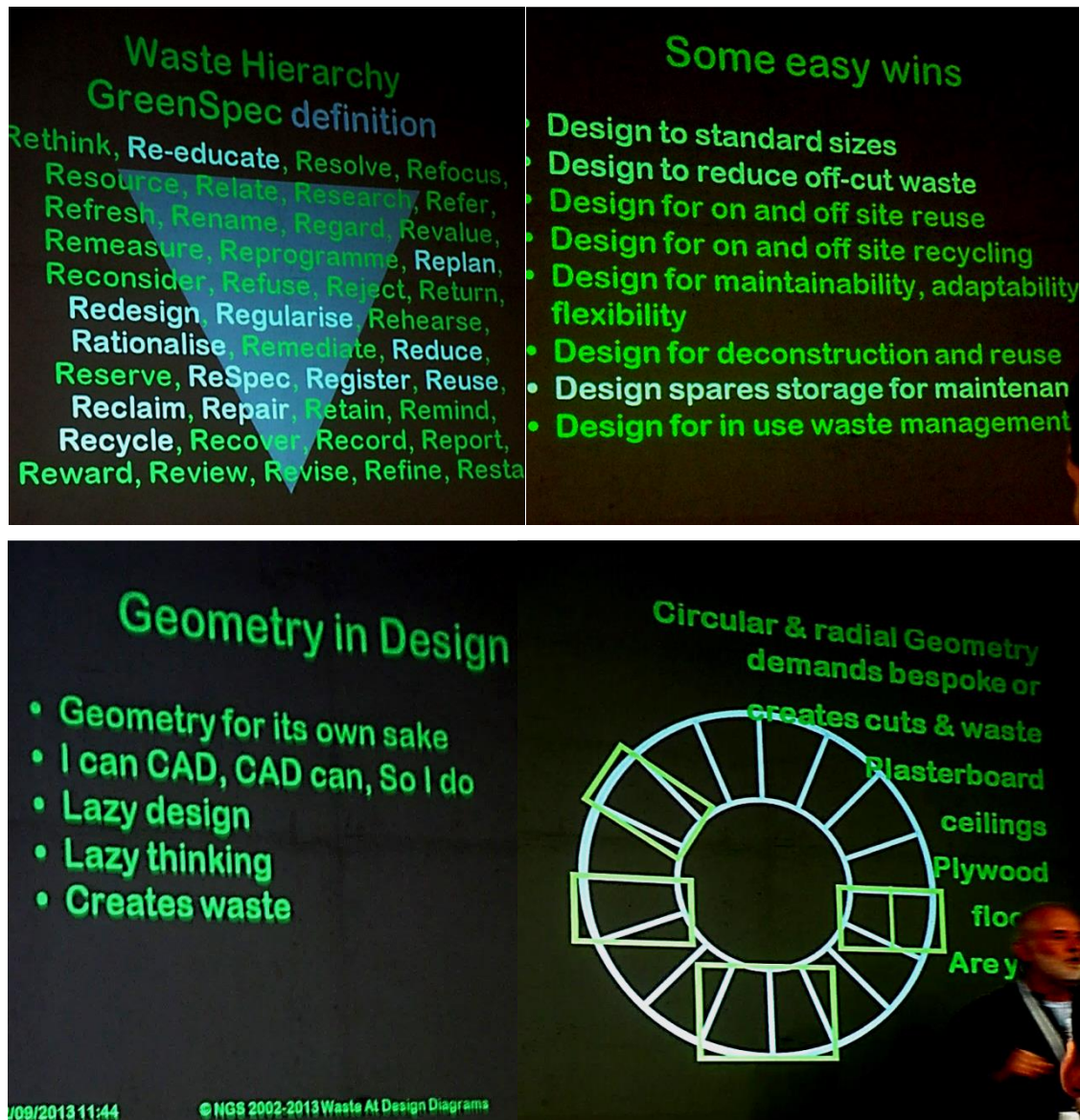


Figure 13: Presentation on the Green-Sustainability Theme by Architect Brian Murphy (Said, 2013)

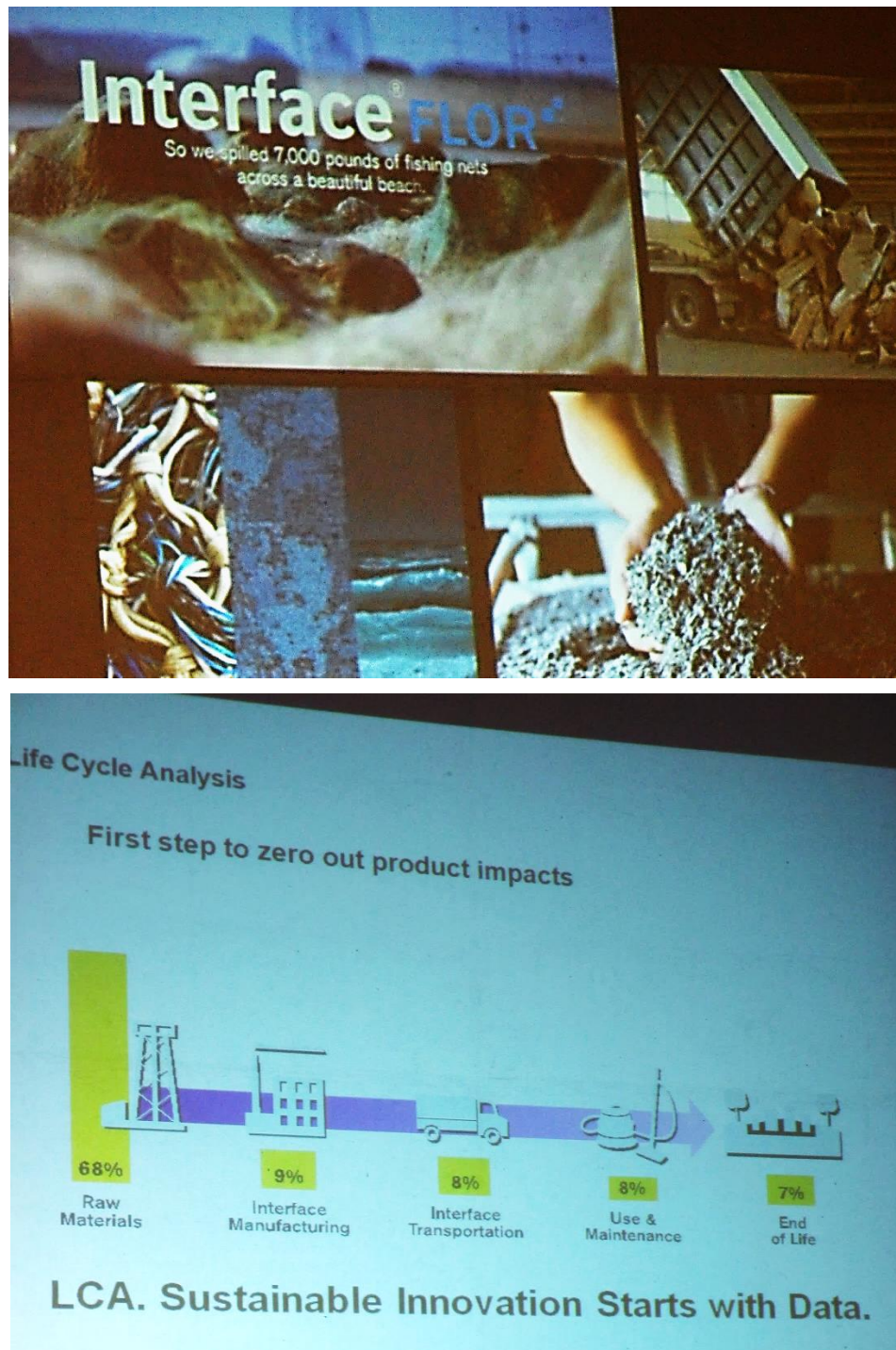


Figure 14: Presentation on the Green-Sustainability Theme by Interface Floor limited (Said, 2013)

Appendix 12 : Practical Design Themes Related to Maintenance in Harrogate Flooring Conferences (2013)



The floor surface is protected by application of a Forbo Monel film. This film absorbs wet dirt, and will be removed by the next cleaning action. With regular use of the Monel method, the original appearance of the floor is retained.

Regular cleaning

Just remove any dirt or stains regularly and routine floor cleaning is done in no time:

- Wipe with dust mop and dust cloth
- Remove spots with Forbo Monel and (damp) mop (50 ml/10 l water)

Periodical cleaning

One cleaning and maintenance product is all you need

- Wipe with dust mop and dust cloth
- Clean with Forbo Monel and mop (50 ml/10 l water)
- Apply Monel film using Forbo Monel solution and mop (250ml/5 l water)
- Allow floor to dry

Occasional maintenance

When your flooring stops looking 'as good as new' after long and intensive use, it can easily be restored to its original beauty:

- Scrub with Forbo Monel and scrub brush (50 ml/10 l water)
- Pick up dirty water with wiper and mop or water vac
- Rinse with clean water and mop
- Apply Monel film using Forbo Monel solution and mop (250ml/5 l water)
- Allow floor to dry

Frequently asked questions

- | | |
|--|--|
| How to remove stains? | Remove stains as soon as discovered, try out removal, on a sample piece or on a hidden place. Most stains are safely removable by dry towel or water, detergent, white spirit or spirits (in that order). Do NOT use alkaline products (ammonia, soda) or strong solvents such as acetone for stain removal. |
| Scuff marks? (rubber soles/heels) | Gently rub with a fine nylon pad moistened with Forbo Monel. |
| Poor surface appearance? | Thoroughly rinse floor. Re-apply Forbo Monel. |
| Slippery floor? | Clean thoroughly with warm water and Forbo Monel. |
| Scratches? | Remove any dirt from scratches and re-apply Forbo Monel. Use entrance mats to minimise risk. |



Figure 15: Product Brochure by Forbo Focuses on Maintenance Themes (Said, 2013)

Appendix 13 : Decorative Design Themes in the Harrogate Flooring Conferences (2013)

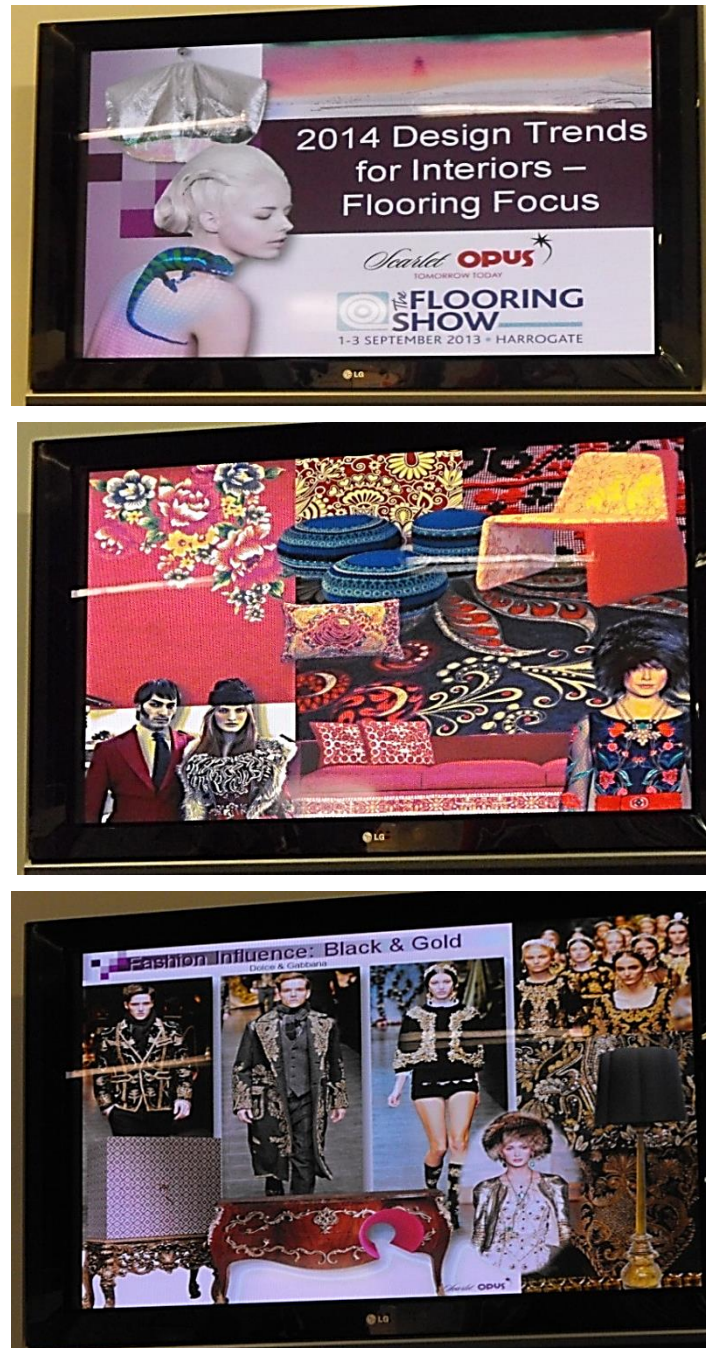


Figure 16: Presentation by Scarlet Opus Limited Focuses on Trends (Said, 2013)

Appendix 14 : Eco Lab Stand at Harrogate Flooring Show (2013)



Figure 17: Harrogate Flooring Show Eco Lab Stand (Said, 2013)

Appendix 15 : Robert Firth's Presentations at Harrogate Flooring Show (2013)



Figure 18: *Some Photographs of Robert Firth's Presentations at Harrogate Flooring Show (Said, 2013)*

Appendix 16 : Brief of Collaborative Project with Forbo

Collapsible Surface: New Vista for Flooring Design

Abstract

The concept of collapsibility can be understood to be part of a process of strategic adjustment, be it physical or cognitive. It is nature's own method to adapt, transform and evolve. In this sense, then, it can be seen as a tool for communicating and causing a change as much as responding to it. The principle of collapsibility is based on several interactive mechanisms, such as folding, nesting, squeezing, fanning, rolling, compacting or pressing (Mollerup, 2001).

Generally speaking, the concept of collapsibility is mainly associated with reconfiguration of masses and altering of dimensions. It might also suggest a negative connotation, as "collapse" can mean "falling apart, releasing energy and losing coherence and direction"(Ingold 2012, p.4); on the contrary, it could mean generating forces, similar to what might happen when collapsing a spring. The key potential that this concept provides during the process of a collapsing performance is the capacity to perform double, oppositional and responsive actions. For example, stretching and shrinking, folding and unfolding, squeezing and inflating, contracting and expanding.

Architectural surfaces are vulnerable turning points that are full of potential: they are not superficial; they represent the top layer, which is as worthy of attention as an inner depth (Lavin, 2011). This research suggests using the concept of collapsibility as a conceptual tool for thinking through surfacing design and reengineering the design scope of floor systems. It suggests activating the passive or the hidden capacities that a carpet, a tiled or a laminated floor might have.

Generally speaking, the floor, which occupies an area of considerable importance and accommodates complexities and activities, relatively communicates and responds the least with respect to the dynamic events happening on its surface. A carpet, for example, is not only a platform for events, but also a component with hidden collapsible capacity that can contribute better to the events happening on its surface. It also could be argued that hands' interactions and their communications with surfaces are more of concern and attention than those of feet.

I believe that by reconsidering the responsive and repetitive traits of the concept of collapsibility, a change and new way of thinking about feet interactions and flooring systems can be introduced. A collapsible flooring system that suggests resilient connections between components that not only respond to change but also allow potential change to happen and evolve.

In brief, it seems that by reading the overall signs of change in society, technology, industry, education, and design, it is time to modify the way we think, perceive, interact and manifest flooring surfaces as mere envelopes; as a matter of fact, they are spaces of encounters and responses, i.e. interconnections.


Appendix 17 : Email correspondence with Designer Marijke Griffioen at Forbo

RE: Thank you - Microsoft Edge

https://outlook.live.com/owa/?viewmodel=ReadMessageItem&ItemID=AQMkADAwATY3ZmYAZS05M2NmLTUyMTktMI

Reply | Delete | Junk | ...

RE: Thank you

 Griffioen, Marijke <Marijke.Griffioen@forbo.com> Reply | ...
 Wed 17/07/2013, 15:28
 You; Albertz, Peter (Peter.Albertz@forbo.com); +1 more

Dear Lore,

I am curious whether you have an idea how you would like to continue with your project and where we could help you further.

Some options crossed my mind:

Hybrid flooring products, various materials in one product combined.
 A contemporary solution for an open space that has various identities due to its different functionalities. Referring to multi functional open office areas that are quite popular and need different flooring solutions (formal, informal, leisure, working, meeting conference etc) Instead of an abrupt division between different materials/surfaces it could be interesting to make an in between products that helps to create a more natural material flow on the floor. We could help you with supplying Forbo flooring material. Or you could make a computer mock-up and we could help you with feedback.

One material with different textures. A product that connects to your Nomad tent. For example taking the tile as starting point, using a fixed dimension and a fixed colour, playing with different textures to create a space with different functionalities, Zooning.
 Also in this case we could help you being a sparring partner, giving some professional input.

Fiction Design Digital future scenarios of new flooring products.
 We could help you as a sparring partner, giving you some professional input or by formulating a project definition.

This is a reply from Peter:
 'We recently started to set out directions to set-up an "innovation lab".
 Therefore I quickly mentioned the possibility to contribute to our lab by a research into flooring experience and senses.
 As we first have to define what an "innovation lab" is and what it should contain, from innovation it is too early to define a clear project for you for to contribute'

Today I sent some samples of the Coral Grip collection to your address in case you don't receive them within the coming week please let us know.
 I won't be at the office till August the 9th.

Warm regards,

Marijke Griffioen
 Senior Designer Concepts

Forbo Flooring BV ; Industrieweg 12 ; NL-1506 JP Assendelft ; PO Box 13 ; NL-1500 AA Krommenie ; The Netherlands
 Phone: +31 75 6477622 ; Fax +31 75 6477711 ; e-mail marijke.griffioen@forbo.com
 Visit: www.forbo-flooring.com

Appendix 18 : First and Second Invitation Letters from Forbo

creating better environments



Embassy of the Kingdom of the Netherlands
38 Hyde Park Gate
London SW7 5DP
United Kingdom

Forbo Flooring BV
Industrieweg 12, NL-1586 JP Assendelft
PO Box 13, NL-1560 AA Krommenie
T+31 (75) 6477477

Marijke Griffioen
T +31758477622
M +31610242232

Page 1/1
04 June 2013

Dear Madam, Sir

This is to certify that the following person of Lore Said, passport nr 006149253, is invited by us on the 28th of June for a visit at our company to discuss her research project in order to see how we as a flooring company can support her project.

Should you need further information, please feel free to contact me on the following nr 0031610242232.

It will be highly appreciated if the requisite visa can be issued.

Yours sincerely

Marijke Griffioen
Senior designer

creating better environments



Lore Said
Flat 6/ 23 Stewart Terrace
Gorgie Road
Edinburgh
EH11 1UW

Forbo Flooring BV
Industrieweg 12, NL-1566 JP Assendelft
PO Box 13, NL-1560 AA Krommenie
T +31 75 6477477

Peter Albertz
T +31756477050
M +31624826325

29 July 2013

Hello Lore.

Herewith enclosed the invitation letter you need to apply for a visa to stay in the Netherlands.
We are looking forward to work with you soon.

Yours sincerely

Peter Albertz
Innovation Manager

creating better environments



Embassy of the Kingdom of the Netherlands
38 Hyde Park Gate
London SW7 5DP
United Kingdom

Forbo Flooring BV
Industrieweg 12, NL-1566 JP Assendelft
PO Box 13, NL-1560 AA Krommenie
T +31 75 6477477

Peter Albertz
T +31756477050
M +31624826325

29 July 2013

Dear Madam, Sir

This is to certify that the following person of Lore Said, passport nr 006149253 is invited by us to do an internship of tree months starting in the month of September 2013. There will be a compensation payment for about EUR340 per month based on full time internship, local traveling expenses from accommodation to Assendelft and vice versa will be compensated as well. This all on condition that Lore stays in the Netherlands.

Should you need further information, please feel free to contact me on the following nr +31624826325.

It will be highly appreciated if the requisite visa can be issued.

Yours sincerely

Peter Albertz
Innovation Manager

A handwritten signature in blue ink, appearing to read "Peter Albertz", with a long horizontal line extending to the right.

Appendix 19 : Carolien Laro, Spring Wood Collection of Stools (2012)



Figure 19: *Spring Wood Collection of Stools* (Laro,2012)

Appendix 20 : Dukta Duna Model Specifications



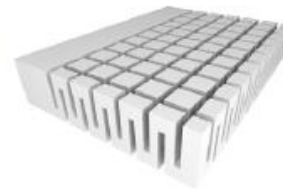
front & back side: massive lime wood

dukta
flexible wood

Schnitt Typ: **DUNA** Incision type

DUNA ist eine Besonderheit unter den dukta-Schnitt Typen, da er nur mit Massivholz hergestellt werden kann. Die sich kreuzenden Schnitte führen dazu, dass sich das Holz «3-dimensional» verformen lässt. Das rasterartige Schnittbild zeigt Quadrate und ist auf beiden Seiten identisch. Herstellung und Anwendung sind ausgesprochen anspruchsvoll.

The incision type DUNA is different to the other incisions, as it is only stable enough with massive wood. Through the double-sided incision grid it can be bent and twisted «3-dimensional». Manufacturing and applying DUNA is very delicate.



massive lime wood

Technische Daten: Technical Data

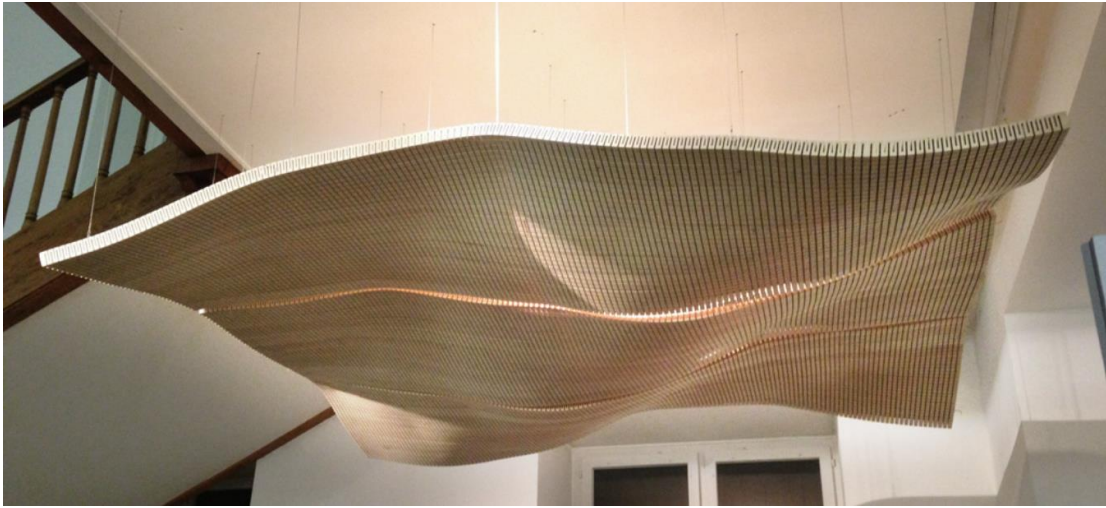
| | |
|---|--|
| Werkstoffe: Material | Massivholz (Linden, Pappel, etc.) massive wood (lime wood, poplar, etc.) |
| Standard Schnitt: Standard incision | 3 mm Nut / 3 mm Steg Cut / Bar |
| Min. Biegeradius: Min. bending radius | Ca. 300 mm |
| Offene Fläche: Open area: | Ca. 15% |
| Standard Platten Masse: Standard dimensions | Je nach Holzart depending on the wood type |
| Oberfläche: Surface | roh, geölt raw, oiled |

Änderungen und Irrtümer vorbehalten | errors and omissions excepted

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Figure 20: *Duna Wood Structure* (Dukta,2017)

Appendix 21 : Dukta Flexible Wood Company



dukta[™]
flexible wood



Figure 21: *Examples of Interior Elements Built Using Duna Wood Structure (Dukta, 2017)*

Appendix 22 : Products Used for Material Experiments



Figure 22: Silicone, Latex and PU-Foam (Said, 2014)

Appendix 23 : Observation Analysis of Everyday Interactions with Floors/Grounds

In this analysis, I observe floors/ground I interact with on a daily basis. My aim is to expand my understanding of the ergonomic relation between floor and feet. My observations show that:

- Interaction with man-made surfaces such ceramic tiles, cement, wood or carpets are limited to minimal or passive interactions (see examples in Figure 23). There is hardly any physical feedback.

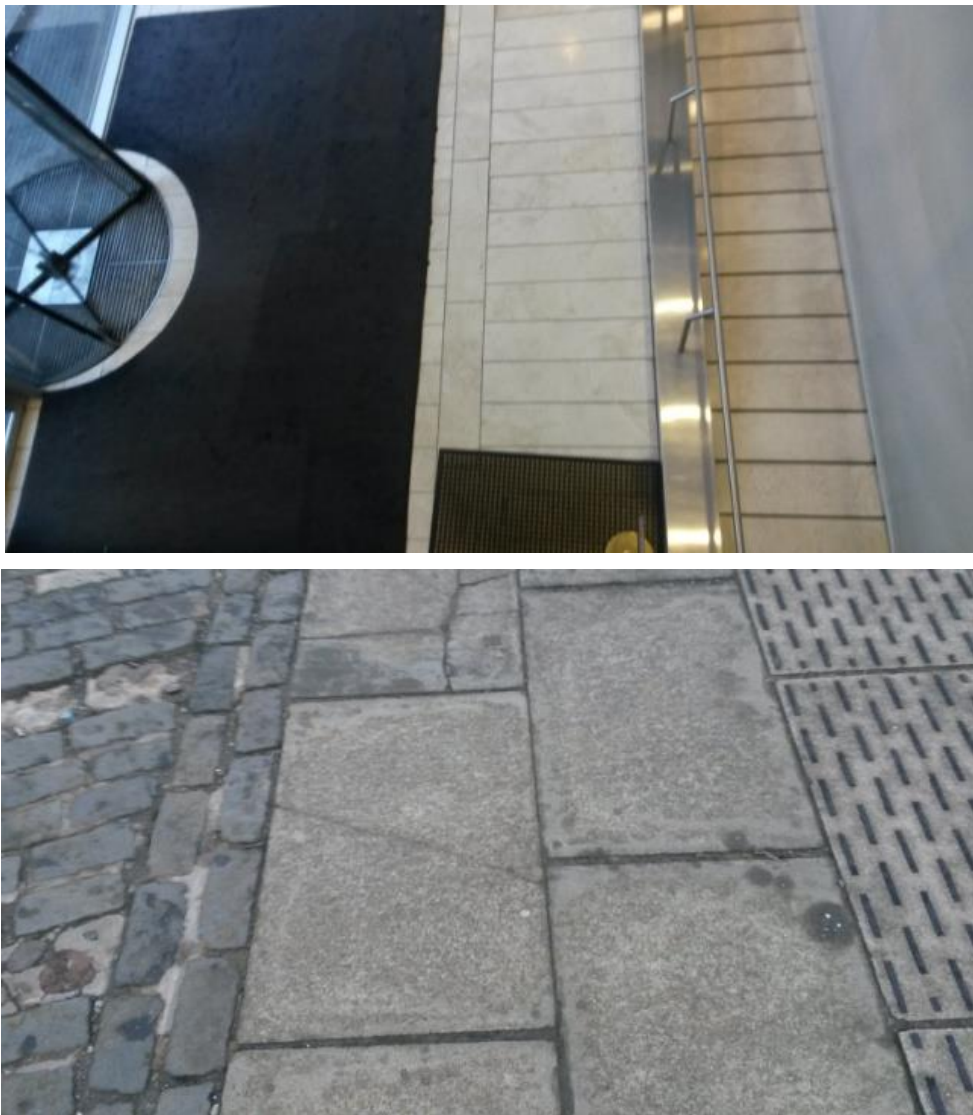


Figure 23: *Man-Made Floor Surfaces* (Said, 2014)

- Interaction with natural surfaces such as grass, sand or wood flakes (see examples in Figure 24) provides active interactions. There is an immediate sense of feedback. These surfaces changes configurations in response to the pressure force of feet; the grass bends, the soils compress, the sands shift etc... These adjustments often are combined with sounds.



Figure 24: *Natural Ground Surfaces* (Said, 2014)

- Nevertheless, in some irregular cases man-made flooring surfaces do not behave as intended. Examples in Figure 25 show that a flat wooden floor has bent (see yellow dotted mark) and cement pavement tiles rocking movements as I stand on them.



Figure 25: Irregular Cases of Faulty Floor: Bended Woods and Rocking Tiles (Said, 2014)

Interacting with natural surfaces prompts a variety of feet interactions and body movements. Such interactions between feet and floor, it could be argued, have been given little attention when manufacturing or designing floors. It could be argued that the shape of the foot is not designed to walk on flat and even surfaces. Podiatrist Phillip Vasyli (2012) stated in an interview with Dr. Andrew Weil at the College of Medicine, University of Arizona, that human feet are designed to walk on soft, natural surfaces. He argues that the footprints made by human feet could be seen as a resourceful ergonomic device, informing natural human interaction with various surfaces. This device, he says, however, has been eliminated. He argues that, since the Industrial Revolution humans have been replacing natural surfaces with hard ones, which have negatively affected the shape of human feet over time. Today nearly 70% of people

have flat foot arches (Vasyli, 2012). Interacting with solid and flat ground forces, the feet have to compromise their shape in order to fit (Vasyli, 2012). This is to say, that the ergonomic aspect of floor design and its interaction with feet has been given little attention. In line with this, Ingold talks about the superiority of hands over feet (Ingold 2011, p.37).

Such deformations often occur due to natural forces. Materials often expand or shrink according to temperature and humidity. The ground and materials expand and contract, which may lead to breaking and cracks when expanding. The tiles rock because of the gaps created beneath them. Cracks and 'damaged' pavement are also often caused by expanding ice when water fills small gaps in winter. These gaps introduce a degree of freedom that allows noticeable rocking motion. The wooden floor expands because of humidity causing a fold on the surface. The floor gives way slightly when walking because of the gap created under the fold and squeaks because of the tight frictions.

When interacting with these faulty cases, floors seem to respond to feet and provide a sense of feedback. On the one hand, such incidents, it could be argued, can be seen as a failure of the design of the floor structure to accommodate various forces. In his book *Structures, Or, Why Things Don't Fall Down*, James Edward Gordon explains how action and reaction are equal even when we cannot see it (2003). For example, when walking on various rigid floors, the ground's reaction to our body weight is equal to the force applied, even when it cannot be seen.

This notion highlights an ergonomic design potential related to a foot's interaction with floors. That is to say that shape and curvatures of human feet suggest different designs of floors other than flat and rigid. In other words, human feet, it could be argued, are not designed to walk on flat rigid surfaces. The body is exposed daily to transient forces of body-foot-ground, due to the impact of the foot with the ground (Whittle, 1999, p.264). This explains why footwear technologies push towards designing shoes with various foam densities, absorption and flexibility.

Appendix 24 : Hypothetical Model

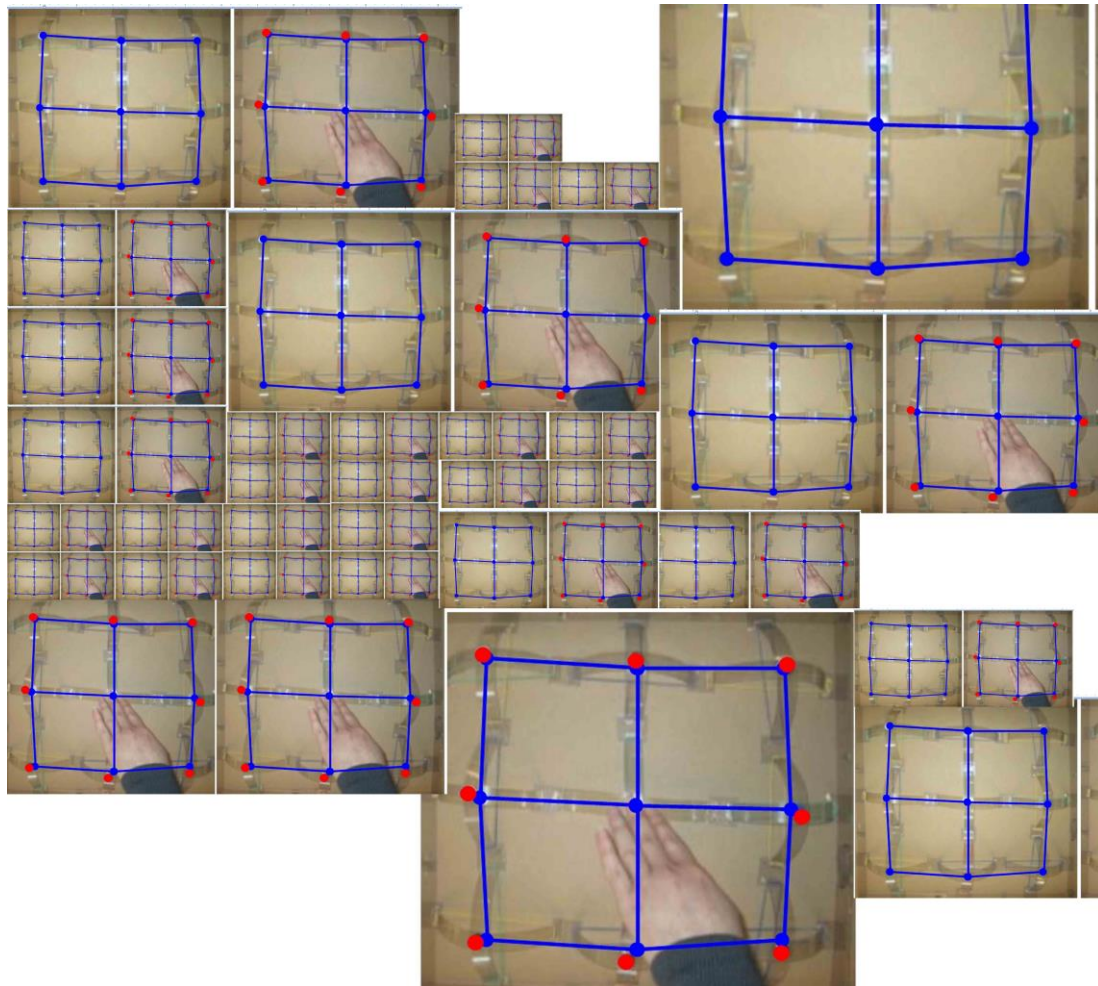


Figure 26: *An Extended Representational Model of Collapsible System of Folds and Forces (Said, 2016)*

Appendix 25 : Fictional Collapsible Spaces

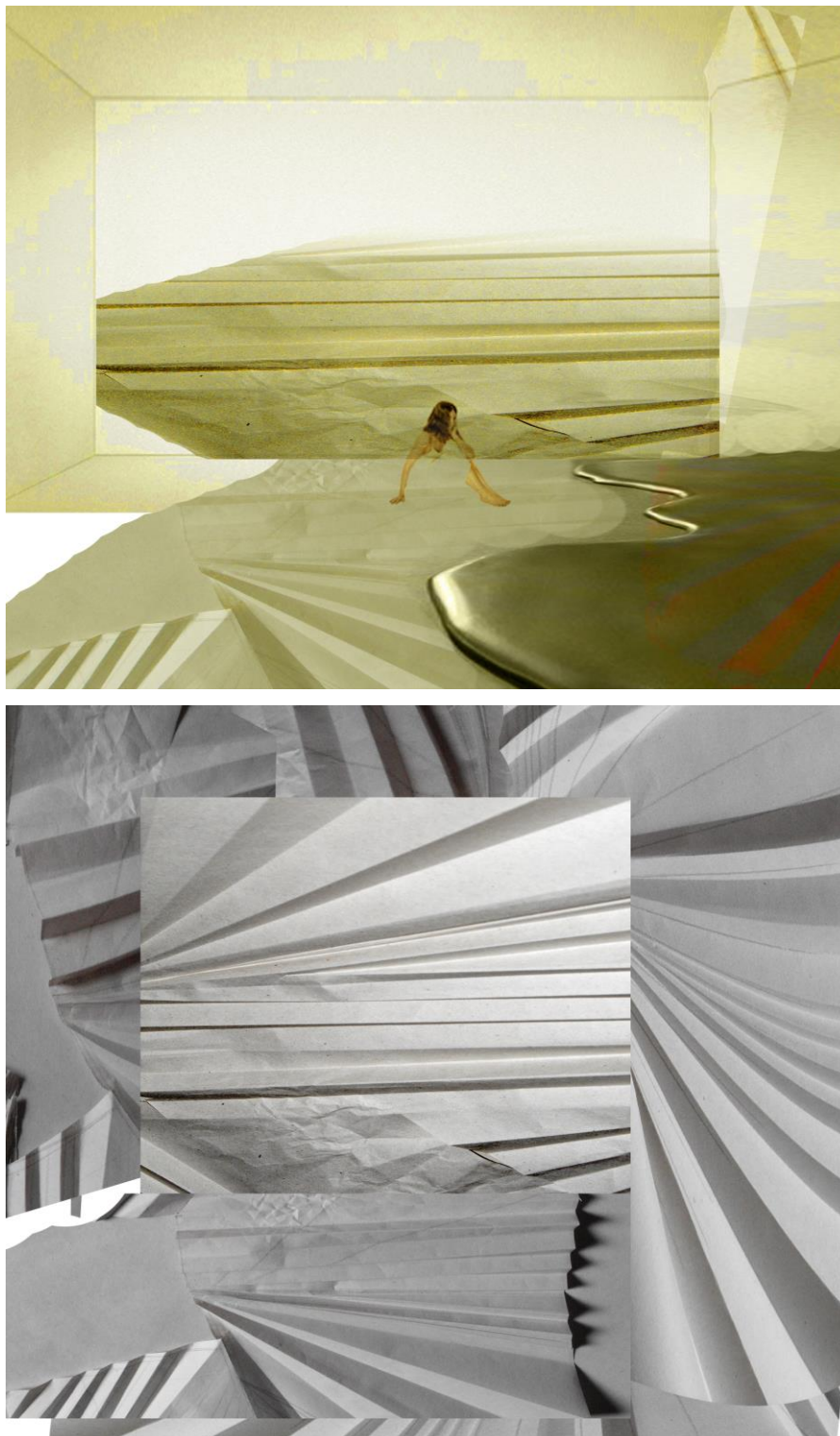


Figure 27: *Fictional Space Inspired by The Poem: Collapsible Story* (Said, 2016)

List of Folders Included in the CD (CD is enclosed with the thesis)**CD 1**

- Experiments - Material Exploration
- Experiments - 3 Printing Prototype
- MA workshop - Everyday Collapsible Objects
- Patrik Schumacher–Interview
- Tim Ingold - Lecture and Interview

CD 2

- Experiments - Small Scale Collapsible Floor - Studio Experiments
- Experiments - Large Scale Collapsible Floor - Studio Experiments
- Experiments - Large Scale Collapsible Floor - Portobello Beach