On Disparity

by Leo Svensson

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**LUNDS
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Abstract

We interact with products constantly. It is, in many ways, inescapable. But what defines those experiences, that disparity, between us and things? By working extensively with text and with various explorative user tests, my ambition was to define that meeting of human and object, and imagine a different way of designing user experience.

After writing and testing, I found that disparity was defined by a multitude of things: disparity is frustration, disparity is discovery. It is how objects manipulate what we do and how we do it – trust and time, motion and emotion.

This new knowledge then informed a series of objects: A watering can that you turn backward, that challenges perceived knowledge and, ultimately, earns your trust; a vinegar dispenser where the liquid comes out from beneath, whose function you explore and discover; and finally, a salt shaker that manipulates the user's motion and their emotions completely.

Disparity became a concept that enabled me to create very different experiences.
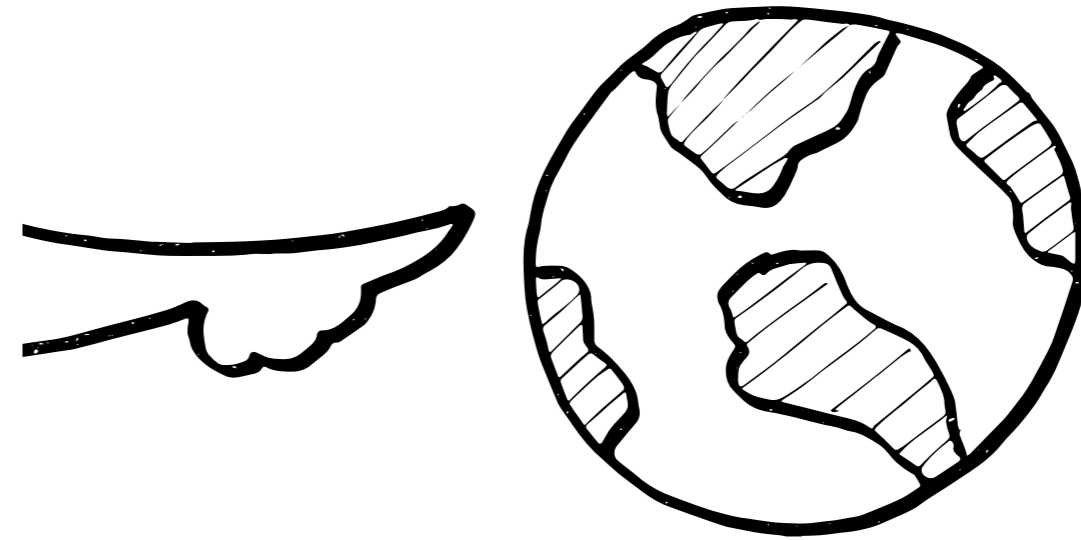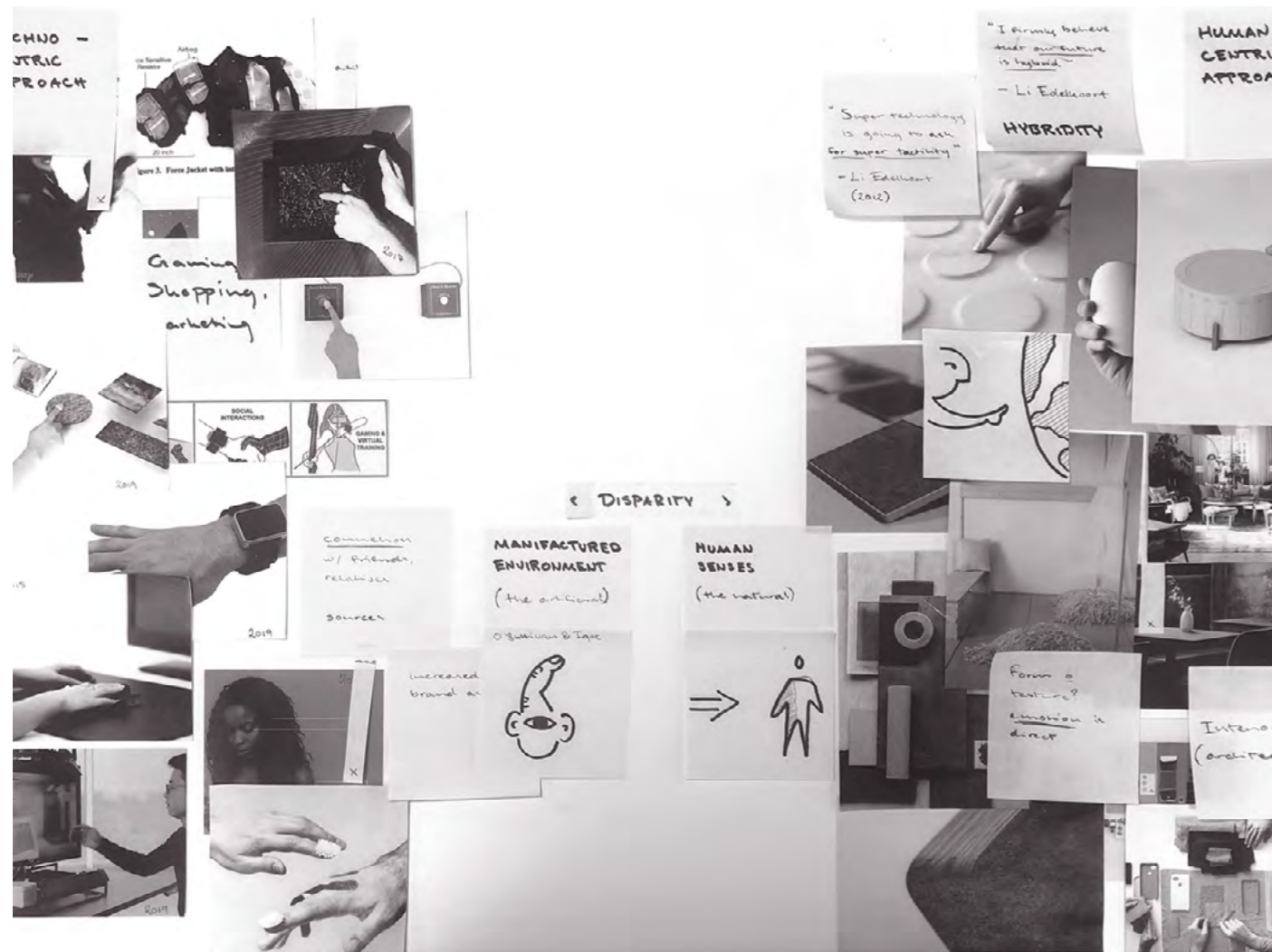
Disparity

/ dɪˈspærəti /

"A situation in which two or more things are not equal or
similar, especially when this is thought to be unfair – a lack
of equality and similarity."

addition of the author:

the conceptual gap between user and designed object

Motivation

What is the purpose of this work? Why is it necessary?

My ambition for this project sprang out of the intersection of my interest for User Experience design and my interest for text and words. On the one hand, I enjoy traditional design methodology; however, working with words is still key to my personal understanding of design. Thus, part of my personal ambition became to develop both interests in unison.

A Project of Two Parts

This project is twofold, you could say: There is the meta-level side where design is investigated through a philosophical and conceptual discussion, and whose purpose is to better understand what defines good and bad user experience.

The second part is where this discussion is applied through traditional design methodology, whose purpose is to embody the first part – the discussion – and to show how it can inspire drastic change in product aesthetics without compromising functionality.

How It All Began

I began with the sensation of touch asking: What is the sensation of touch? I learned a lot. It is a trend; it is very complex, both in terms of how it works scientifically and in design.

But most importantly, I learned that there is a disparity between us and our built environment. "Disparity" became my key theme.

I had already intended on focusing on User Experience design, hence the key question became:

What Defines Disparity in UX Design?

What defines disparity, meaning the space between the pictured character's finger and the designed object?

A full view of my board visualizing my research. Above you can see the observed disparity between tech-driven innovations and more emotional, humanistic designs.

Research

From the sensation of touch to a sense of disparity, or in other words: from a study of how touch improves, to asking why we are seemingly out of touch.

The History of Touch

I began by studying history to ground my work. Western civilization has always been an ocular-centric culture – we have always been biased towards vision. Beginning with the Greeks, vision has been associated with knowledge and light as a metaphor for truth. Take, for example, the prestige of the written word over the spoken one; or Greek architecture which was designed in large-part as a refined pleasure of the eye.

During the Renaissance, the five senses were arranged in a hierarchical system with vision at the top, correlating to fire and light of the Greek cosmic body. In the same model, touch was earth.

Furthermore, it was at this time that the invention of perspectival representation of the world surfaced, meaning point perspective and so on. In the centre of attention, one yet again finds the eye.

In philosophy, vision as a concept has both been celebrated and questioned. The re-occurring criticism has been that the culture of modernity, as humankind entered the 20th century, continued to privilege sight, however also strengthening the negative, shallow tendencies it carries.

And with that, Modernism emerges in Europe, where many architects including Walter Gropius, Mies van der Rohe, and Le Corbusier each helped legitimize the hegemony of vision, particularly through their writings. Le Corbusier wrote: "I exist in life only if I can see," and "I am and I remain an impenitent visual – everything is in the visual."

FEEL?

KNOW

O o

DO?

(analyse)
RESEARCH (primary secondary)

EMOTION
(evaluate)

FUNCTION
(synthesize)

Analysis

An analysis of different theoretical models as well as of my research.
What were my conclusions?
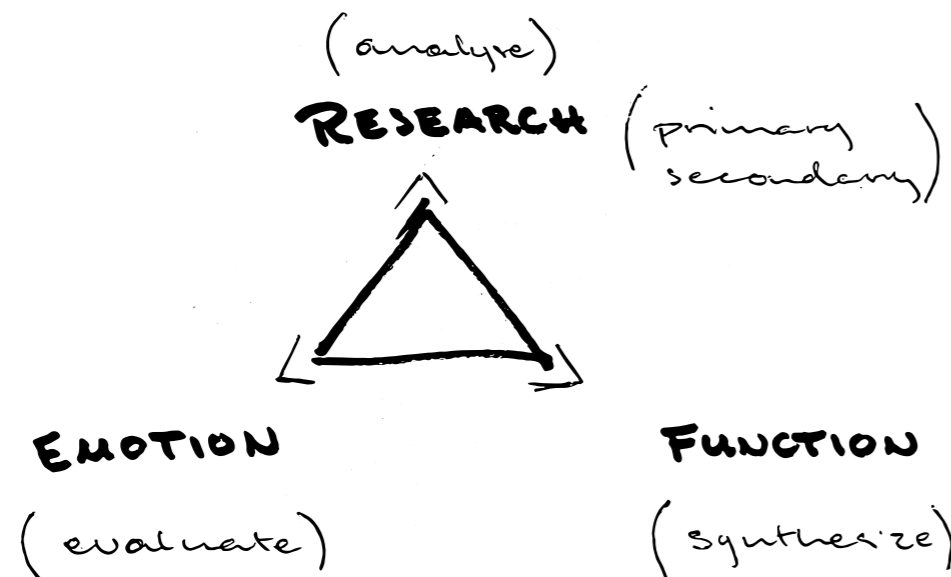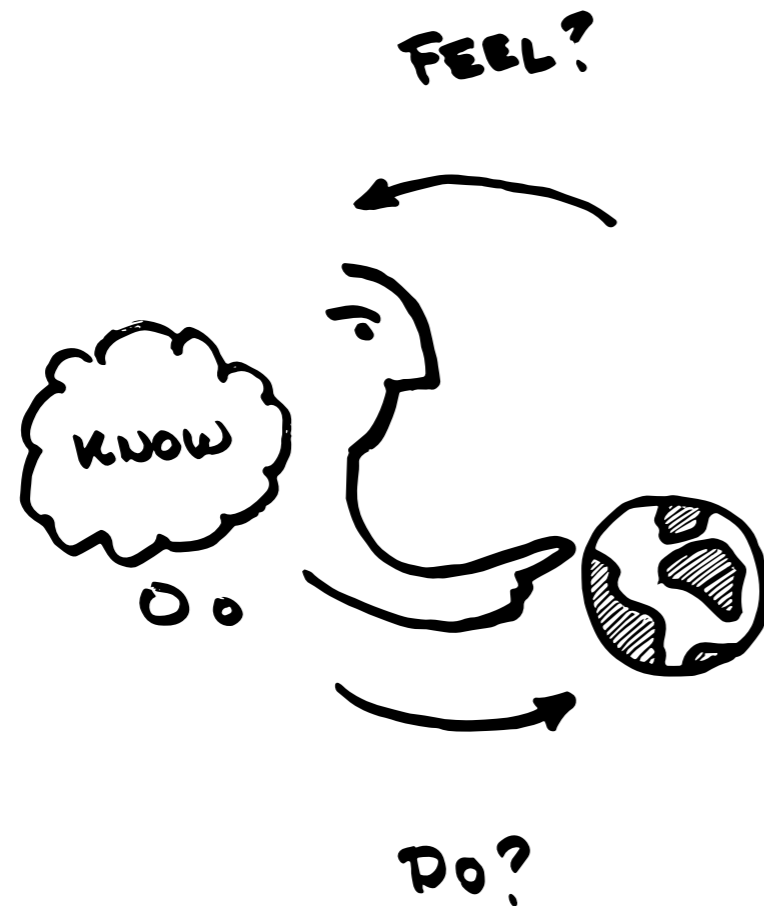
Bill Verplank's model on Interaction Design

Verplank visualizes Interaction Design as an illustration of a figure reaching out and touching the world with a finger. In reaching out, Verplank asks: do? An arrow that points back to the figure asks: feel? Placed just to the side of the scene, as within a cloud of thought, the final question is: know?

What perhaps is missing from the illustration is the medium in-between the world and the individual. The world is, in a way, translated into a feeling by the object and equally, the object allows the individual agency and purpose. As the creator of the object, the designer becomes like a mediator.

This model is important because it acts as a guide through which I define and motivate my work.

"Design Process" by Lawson (2006) Adapted as Design Strategy

The design process has been described by Lawson (2006) as a triangular figure with the words Analyse, Evaluation and Synthese placed at one corner each. Working with the sensation of touch, I have found that a similar model can be applied except with the words instead being Research, Function and Emotion.

Key Facts About the Sensation of Touch

While I did learn many things about the sensation of touch, these snippets below proved the most important moving forward. And if they didn't prove directly valuable in my design, they certainly gave greater context to my results.

- "Touch is a rich medium of social exchange and through it, individuals form strong attachments and cooperative alliances, they negotiate status differences, they soothe and calm, and they express sexual and romantic interest."

- "[…] Up to the 1930s, a pilot could feel the airplane's aerodynamics through the control stick due to the direct mechanical coupling between various parts of the aircraft. […] This lack of feedback was however quickly identified as a serious problem and hordes of engineers started working on ways of bringing back some feedback

into the control stick of airplanes for a safer and more experiential flying experience. (ergonomics)"

- "Today's interaction is mostly built for the eyes, so it's pretty hard for people to imagine how [touch] could be used. Once we get there, I don't think we'll ever want to go back to a world where we can only see."

On My Trend Research and the Disparity I Found

As I looked over the products and projects over the past few years relating to touch, I noticed a disparity between tech-driven innovations and more emotional, humanistic designs. A great deal of research is being made to enhance digital experiences – to further engage the user in a virtual environment – all the while humankind is digressing farther away from nature and the actual world.

Conclusion and Mission Statement

Western civilization has for millennia been a civilization primarily guided by vision – a so-called ocular-centric culture – which has distanced us, as natural beings, from the artificial. It has left much to be desired. It has left touch, the "mother of the senses" without much purpose but to stroke unresponsive glass displays.

There is a disparity between us and the built environment.

Analysis

As explained in the section on my motivations, text is key to my understanding of design. Therefore, I wrote this piece just after reaching my conclusions from the research.

On Disparity

If there is disparity, there is lack of knowledge between two or several parties (this is my take). There is difference, yes, but not mutual trust nor understanding.

The etymological definition online of "disparity" reads as follows: "State or character of being essentially different" and "quality of being unequal in rank, condition, etc." Note words such as "essentially", connoting to essence – the very core of the meaning of a being – and thus, how disparity means "difference in essence". Saying that there exists a disparity between us and the built environment, as I would suggest, is to say that we are fundamentally estranged from our own creation. What we are as creatures has come to be essentially different from whatever space we inhabit.

"Condition" is also used. Condition, meaning what we already know – knowledge of the world – is lacking. We do not know our artificial environment; we do not know material or texture; nor do we make any effort to know it. How, then, do you understand the world?

Lastly: if there is disparity, we are the deprived ones. To say, even in the slightest, that human kind has mastered earth is wrong. Disparity exists between us and the built environment and we are losing. We are unequal; we simply do not know enough.

And here I find my meaning. Where are the gaps, the differences, in interaction? What happens if the parameters of interaction are changed? Will the knowledge change?

Pictured above is a project called FULU by Ryo Tada which inspired me a lot early on.

User Testing

After having read so much about touch, I needed to understand some key aspects of interaction. You could say that this was an extension of my research – applied research, if you will.

Applied Research: What is Disparity

There are plenty of, what I call, daily interactions. These are objects such as light switches and wall plugs that have fallen out of collective awareness into a state of obviousness. Why? Because they're simple, they appear to need no more analysis. But, by abstracting usage of one of these objects, one comes to the conclusion that they too have been designed and, indeed, actively made inconspicuous.

In other words, they have been rendered insignificant to our consciousness: We no longer perceive them. I leave it to the reader at this point to determine whether that is good or bad. This subconscious knowledge of the environment has, naturally, once been actively learnt. We have once received a feeling which has passed on as knowledge. What if one were to bring these mundane activities back into collective consciousness, to assign them new sentiment and have them remain there?

Once I had categorised a few daily interactions I set about juxtaposing them with other, very different, actuation words.

These were also related to touch. As it turned out, many of these other actions were very playful words: toss, drag or pull. And there are interesting aspects to play. Of course, games have rules. Yet the actions associated with games are joyful, unrestrained. You play a game with very much intent, indeed, just like you to when plugging in a cord. However, plugging a cord is far from being at all playful. It might be obvious, though there lay a fascinating insight in the juxtaposition of the two.
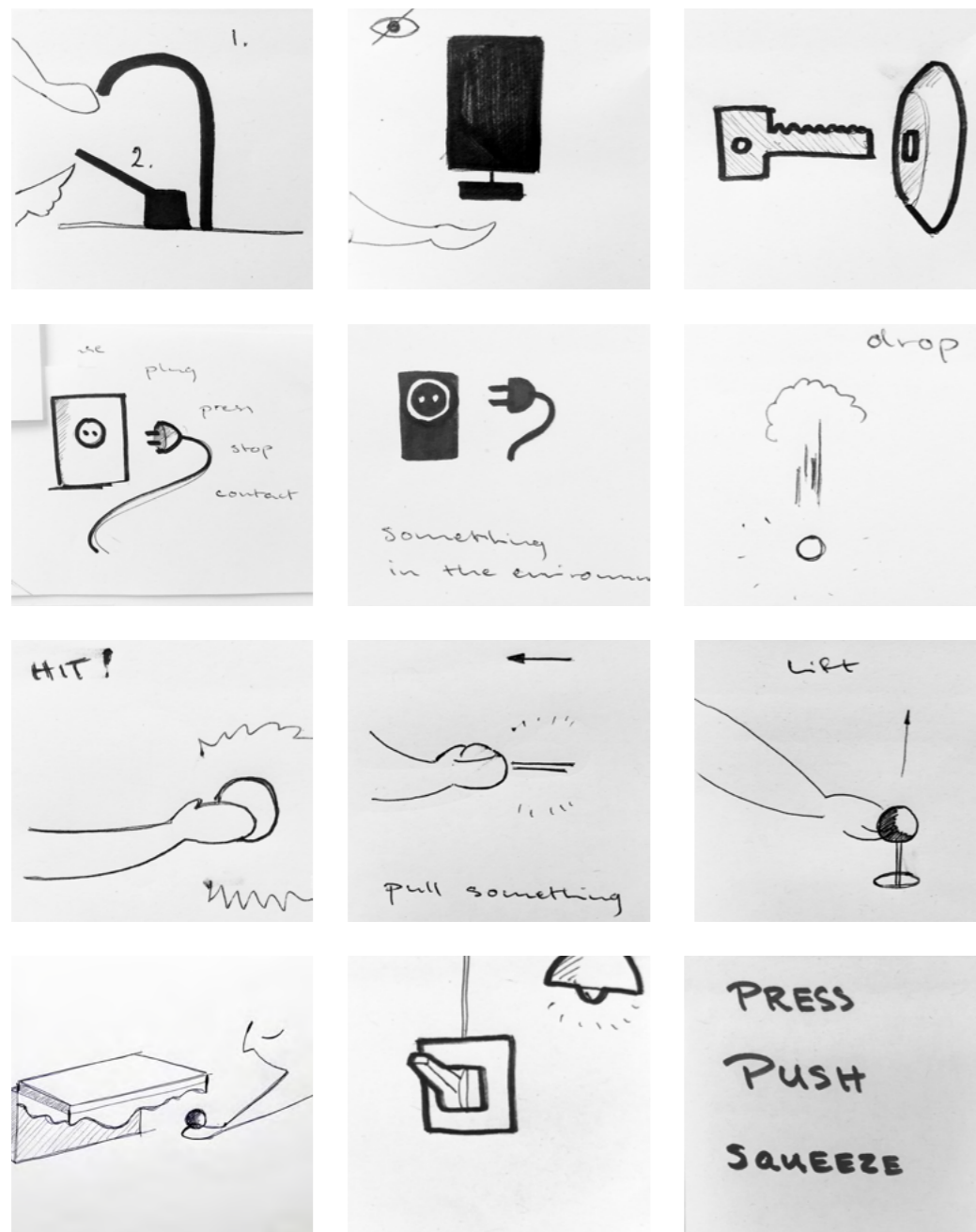
A selection of daily interactions as well as so called actuation words. These images, together with the research, was the beginning of my first user tests.
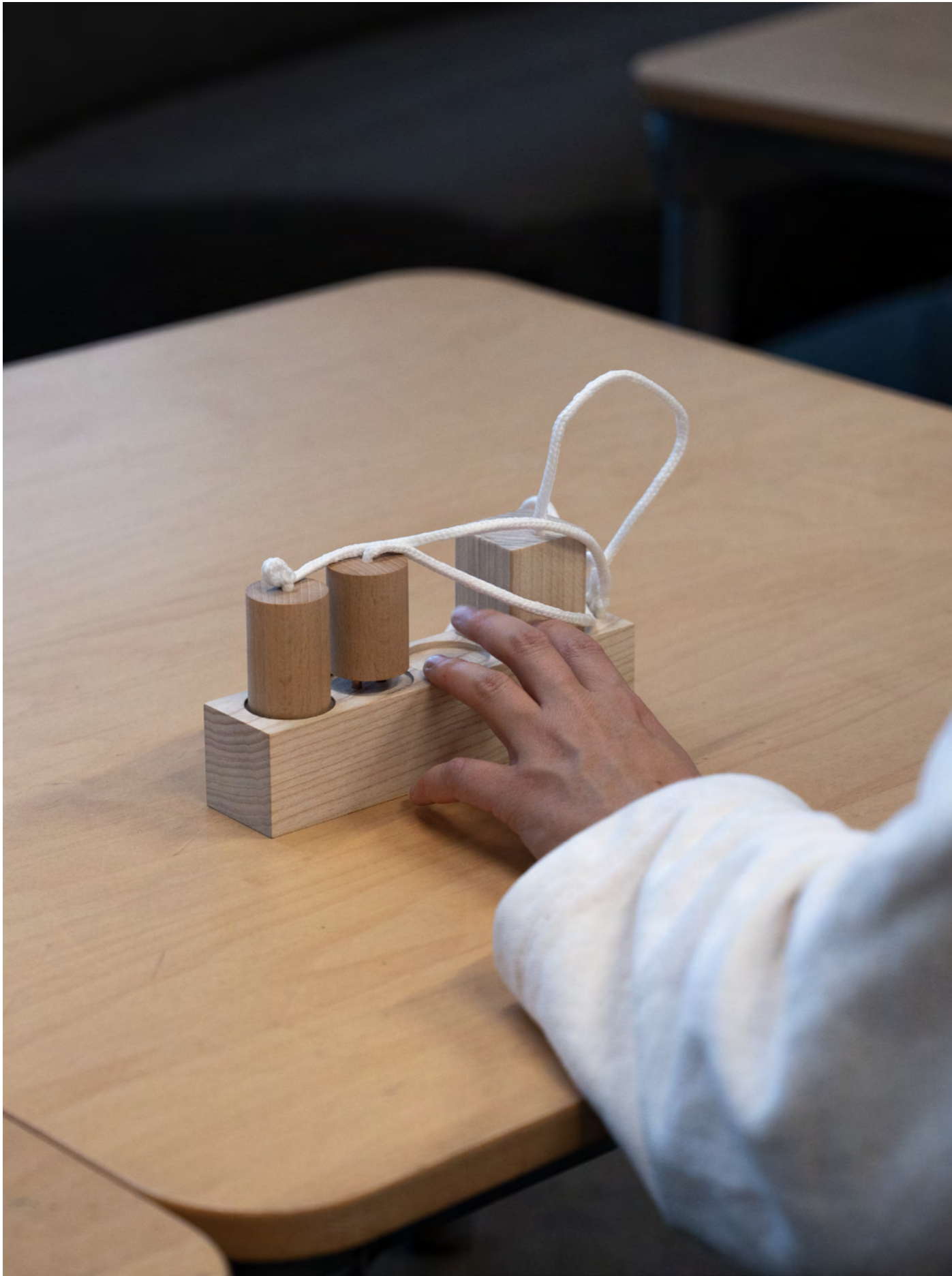
Precept 1

How does the hand discover an object?

First of all, I need to address why I did these tests at all.

Touch is instinctual. There comes a point in a project where you cannot talk or write your way to results, and I was at this point. I needed to understand some key aspects of interaction. Simply put: how does one engage with a product? You could say that this was an extension of my research; applied research, if you will.

The user's eyes were shut during the entire time.

I wanted, essentially, to see how the hands engage. But also, how function and emotion come about. What do you do? How does that make you feel? I kept the questions to a minimum and allowed the user to express their impulses.

My observations were guided by my research, specifically by Don Norman's description of interaction as "The Seven Stages of Action".

Outcome

And the outcome proved quite insightful, even though the objects were simple. As the users shut their eyes, they were not able to think as actively, as logically, as before. They immediately began looking for an order or for some intent on part of the object. "What am I meant to do?" Their own intent was rendered insignificant, and so, I realized to what degree one surrenders one's own individual intent. It is all in the object.

I watched as the users moved in and out of states of confusion, frustration, to joy and eventual relief. It was an eye-opener. I could go on, talking about trust and form, communication, play, or learning; although, I will stop here and just keeps those words as themes in the background.

Precept 2

How do they react to surprise?

The users saw this interaction as flawed once they had used the object. They saw the action as dispensable, finished, unsatisfying. This time around they were allowed to use their eyes.

Outcome

I will keep my conclusions brief. Throughout the tests, the users become as if obsessed. It could partly be because the users were designers. But all the same, it was fascinating. They always wanted to reset, to go back to the point when the object had meaning, or in their words, "when it had function". I would like to add "purpose". I thought a lot about this, this need to organize.

Why did they insist on the object having purpose, even though that original purpose is completely fraudulent?

"Throughout the tests, the users become as if obsessed."

Precept 3

How does the hand discover form?

This third, and final, test was made to analyze how touch discovers form, and moreover, how the user reacts to irregularity and regularity, understanding and unknowingness, awareness or obliviousness.

Outcome

One of the key takeaways were how very precise the sensation of touch is. The hand recognizes small differences very distinctly, and interprets them. Action becomes emotion very directly. It is necessary to note, however, that the entirety of the situation felt unnatural to most. They very directed very clearly to stop and think.

It was here that I became aware of the aspect of time.

The time that a user spends with an item makes a huge difference. And coupled with a specific form, one creates experience.

Lastly, it is the issue of trust.

The object was designed to make the user unaware of what it was they were touching. The user, as time passed, lost trust in the object. Again, what does the object try to communicate?

Conclusions: Precepts

What did I learn from these slightly odd experiments?

I learned a lot about time, trust and intent. I learned that it lays in the designer's hands (perhaps obvious, although important to state). I also reached some sort of definition of disparity, and it reads as follows:

Disparity is whenever you interact with a product and encounter intent, a guided experience – essentially something countering whatever it is that you yourself had in mind. For example, it is when you're turning the wheel of your car and encounter friction; it is when you're ripping off a piece of paper from a toilet roll and, again, encounter friction. It is in that moment that disparity exists. And that moment is, like you probably guessed, very much designed.

On Disparity: A Lyrical Take

Seeing as the project deals very much in text, I decided to further develop the results, however this time in the form of a shorter poem. These lines aided me greatly as I moved ahead into the ideation phase.

Disparity is frustration,
Disparity is discovery,
Disparity is manipulation of trust and time,
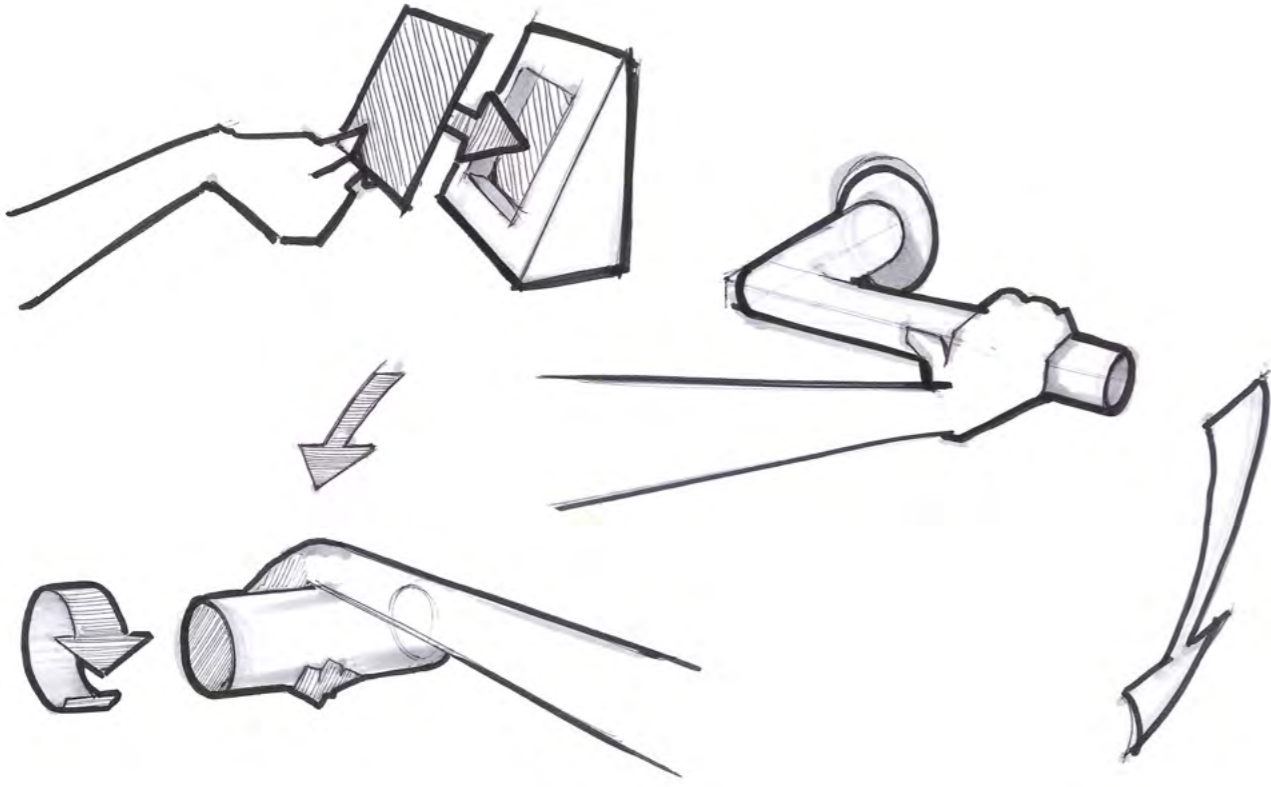Of motion and emotion.

If there is disparity, there is a lack of trust,
Of understanding.
But even for all those things,
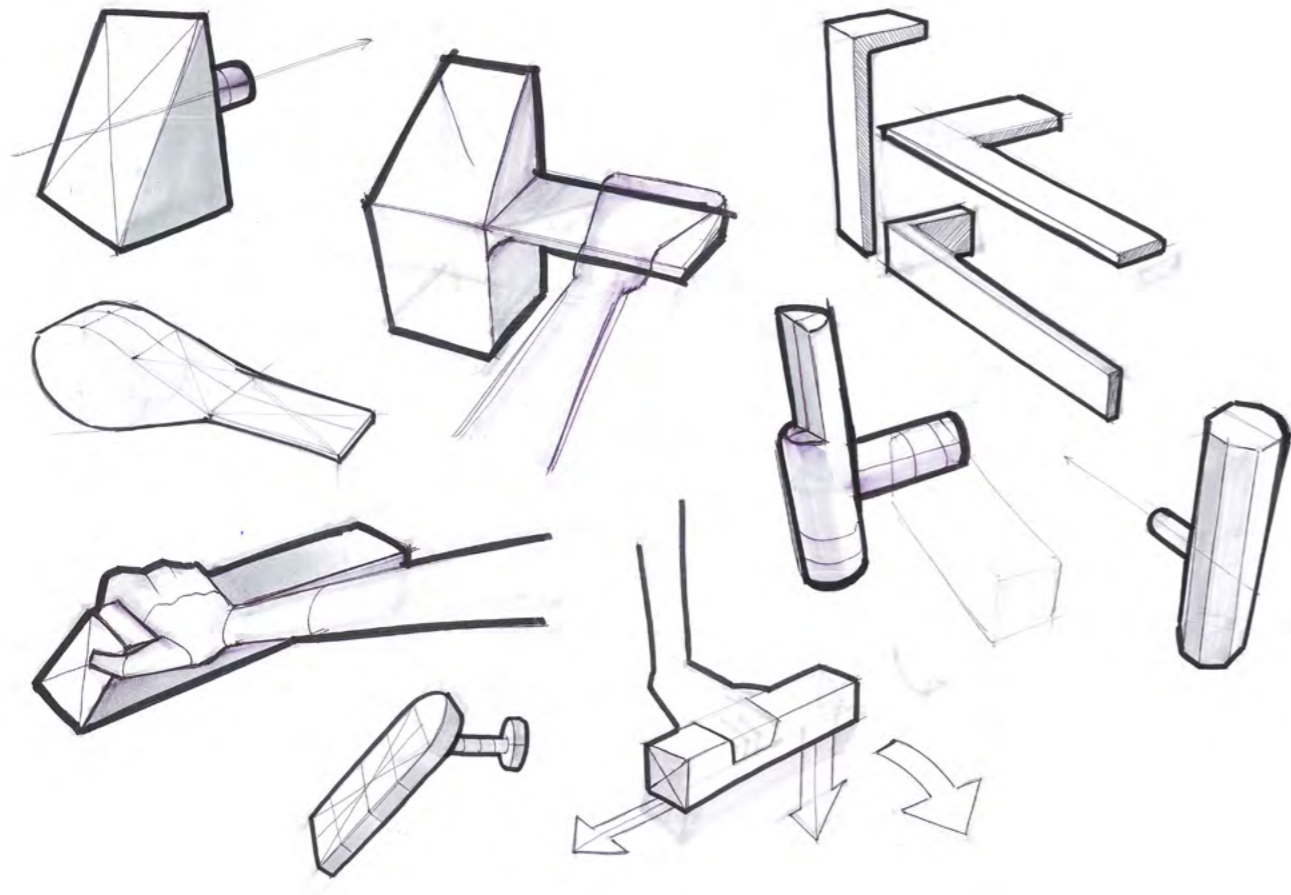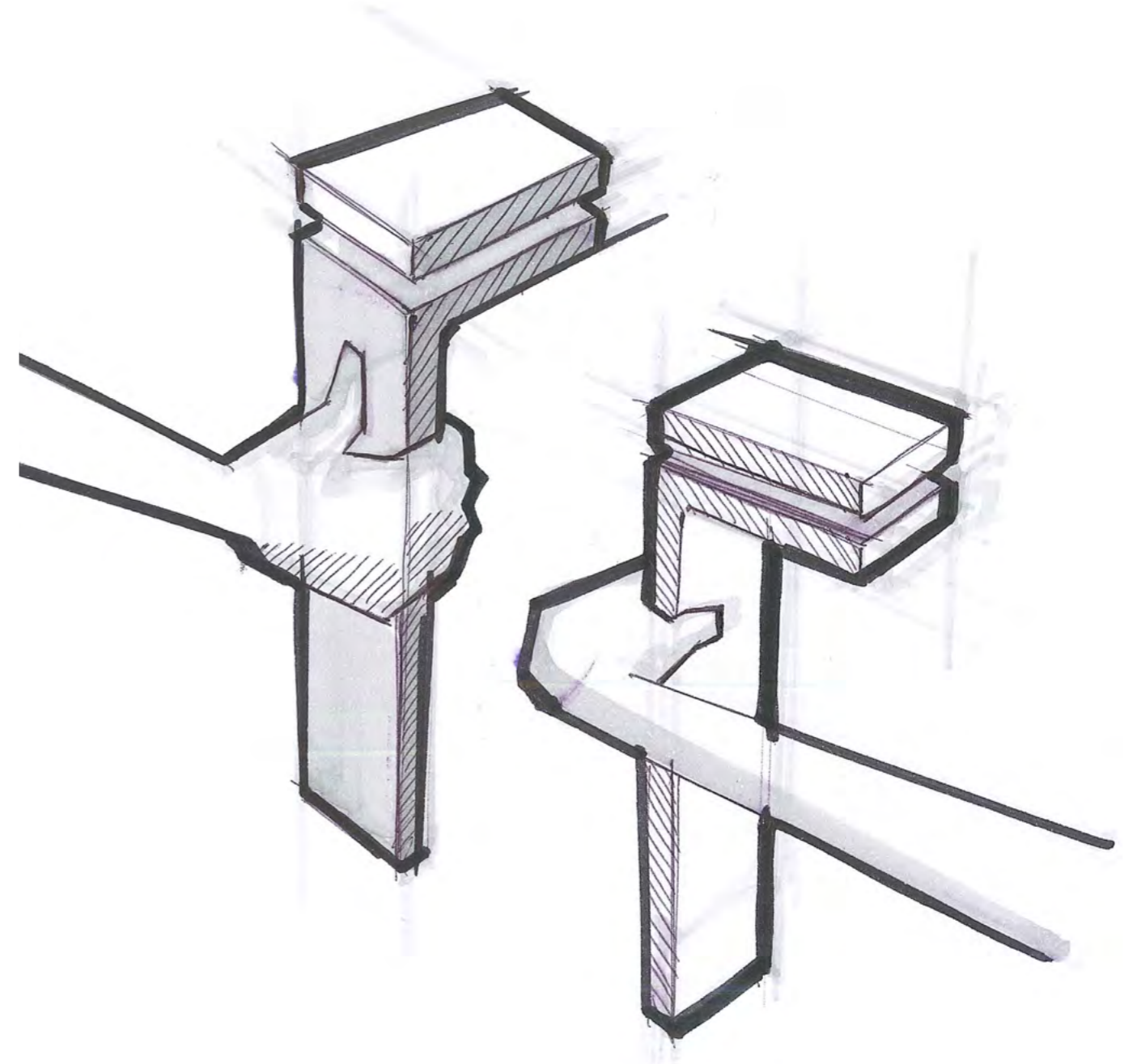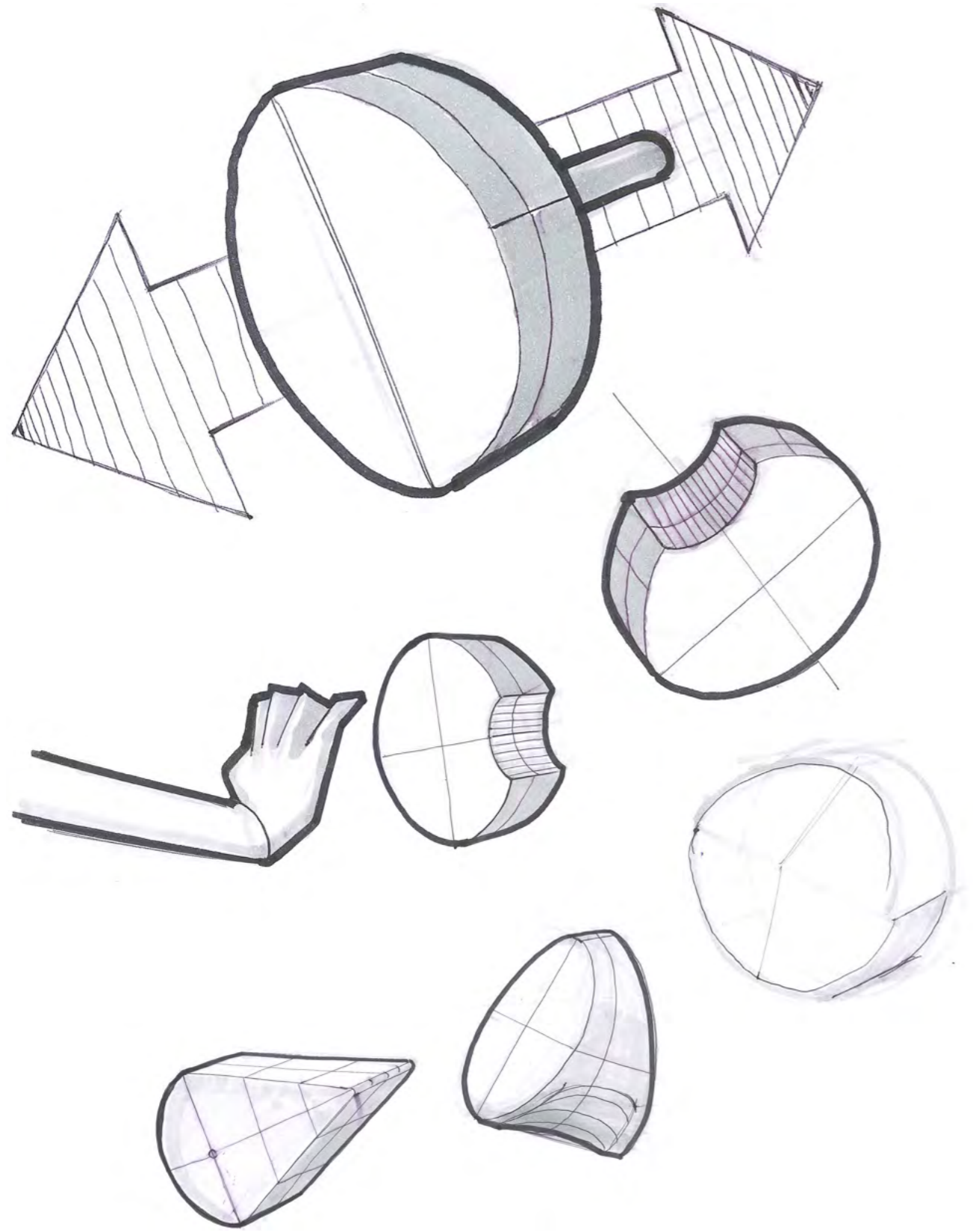Disparity is still absolutely key.

ACTION ⟶ COMPLETION

DISPARITY

A model made in an attempt at easily and clearly describing disparity in UX.

Before moving onto the context and working around my
brief, I found myself back studying daily interactions.

Context: Phase 1

Disparity used as an enabler and as a disabler

Moving forward, I wanted to understand disparity further,
however this time, in a pragmatic context with a practical
application. I, at least, thought this was right at the time.
What is the scenario? What is the problem? What is the
context?

The Brief

I was eager to apply my knowledge, to materialize my
knowledge. The brief became to design something visually
abstract that engages the sensation of touch and displays
how disparity can be used as an enabler or disabler.

By having the visuals – the product aesthetics – remain
abstract, one can show how the concept of disparity can
be used to design drastically different products without
compromising on the User Experience.

Transitions and Context

I found myself back studying daily interactions. However,
now I saw things from a different perspective, as a matter
of transitions. What does this mean? In User Experience
design, the interest doesn't lay solely in the one function, but
rather, how one action transitions into the next.

My scenario, my context, became card readers and door
handles. Why? Because of poor transitions. Because current
conditions do not allow one-handed use. Because there is a
lack of flow. I had my functional analysis.

HOW / WHERE DISPARITY?

What about disparity?

My design challenge was to achieve order and clarity, to
lead the user from one step to the next. If disparity lay in
the moment when the user encounters friction or intent, the
question for the designer becomes: Where do you insert that
disparity, that friction, that intent?

Sketches for first concept

Second concept sketches
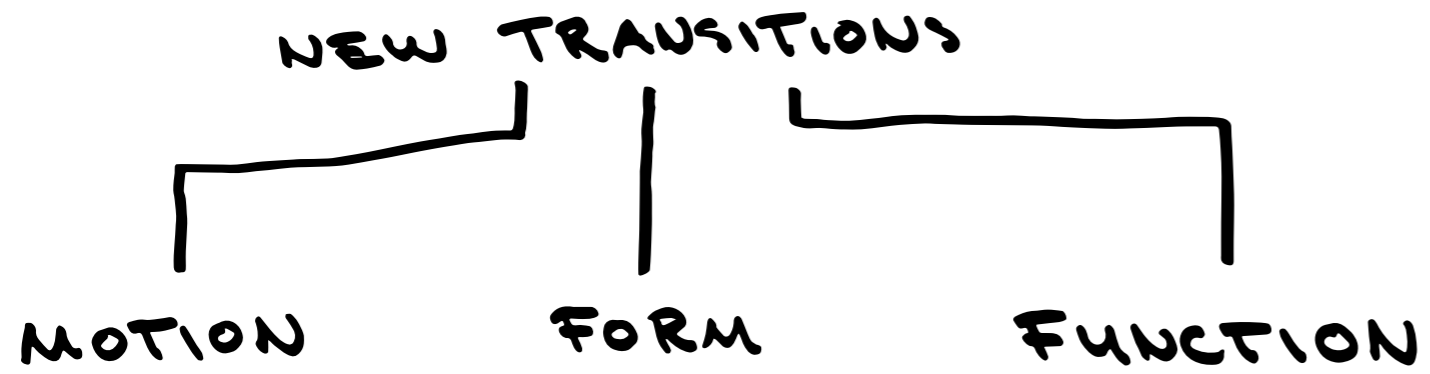
While I eventually did leave card scanners and door handles behind, there were several lessons there to be learned. For example, it was here that I realized that the shape wasn't primary. Instead, it just needed to reveal, in one way or another, what its purpose was when it was used and touched: something that I could apply disparity and intent on.

Two concepts generated from this first concept phase.

NEW TRANSITIONS

MOTION   **FORM**   **FUNCTION**

I saw things from a different perspective, as a matter of transitions. What does this mean? In User Experience design, the interest doesn't lay solely in the one function, but how one action transitions into the next.
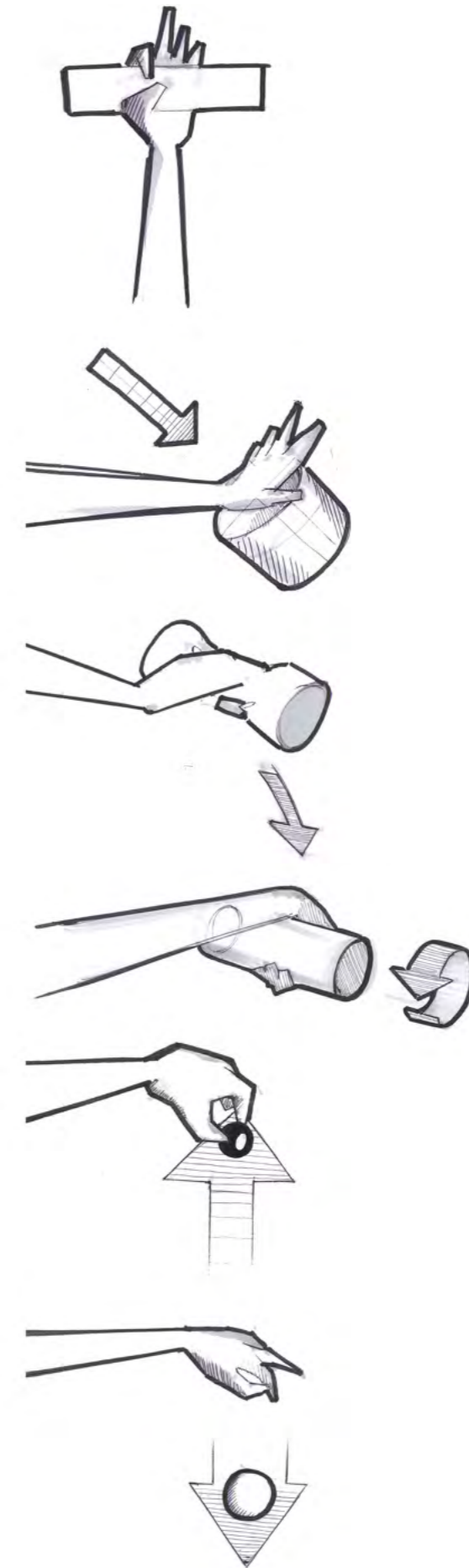
Rather than form, it begins with the motion, the action; new transitions is just this: new motions and new shapes and new functions, one enabling the other, one leading into the next.

Context: Phase 2

As I said, I left the card scanners and door handles behind, and so too the pragmatic and the insistently practical, because I felt a disconnection between this new work and the original studies I had made.

From something generally functional to something philosophical; from something that fits neatly into a box to something that transcends its purpose – to something that poses a question.

What is more essential? In my view, these are not mutually exclusive approaches, rather, it is about finding the appropriate characterization of your individual understanding. I have learnt a lot. I want to pass on that understanding. As the context changed, so did the overarching question. Or perhaps instead, I wondered, how do I pose those same questions, however now, in a more artistic context?

Experience and Intent

And what makes it artistic? The design writer Libby Sellers describes it as a notion of function and intent. The artist Donald Judd saw it as being entirely about the maker and what they (the designers) want to show. Nevertheless, it comes down to experience: intent and experience. If anything, these had been my guiding principles all along, perhaps just unknowingly.

The original brief, however, remained: To design something visually abstract that engages the sensation of touch and displays how disparity can be used as an enabler or disabler.
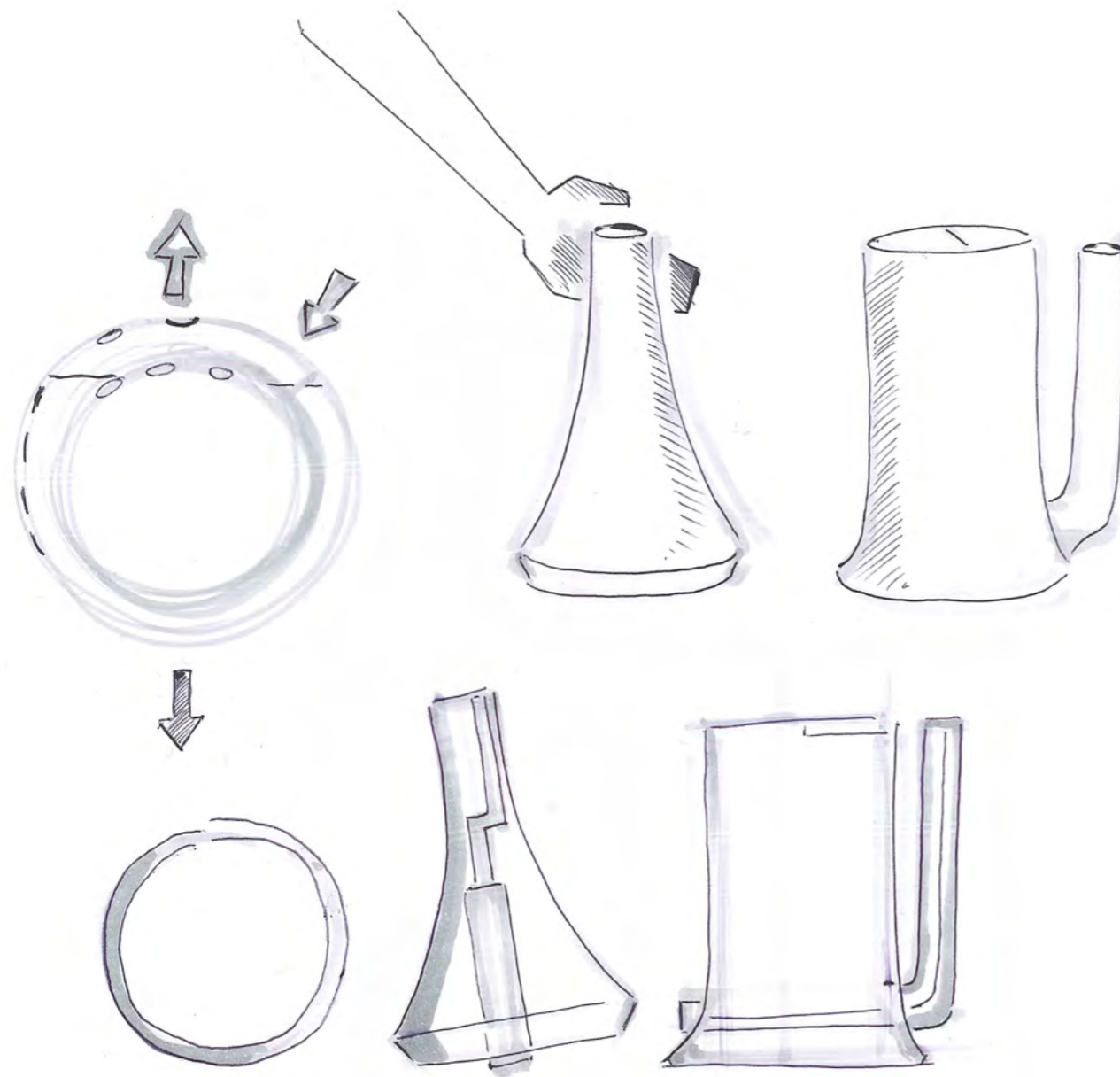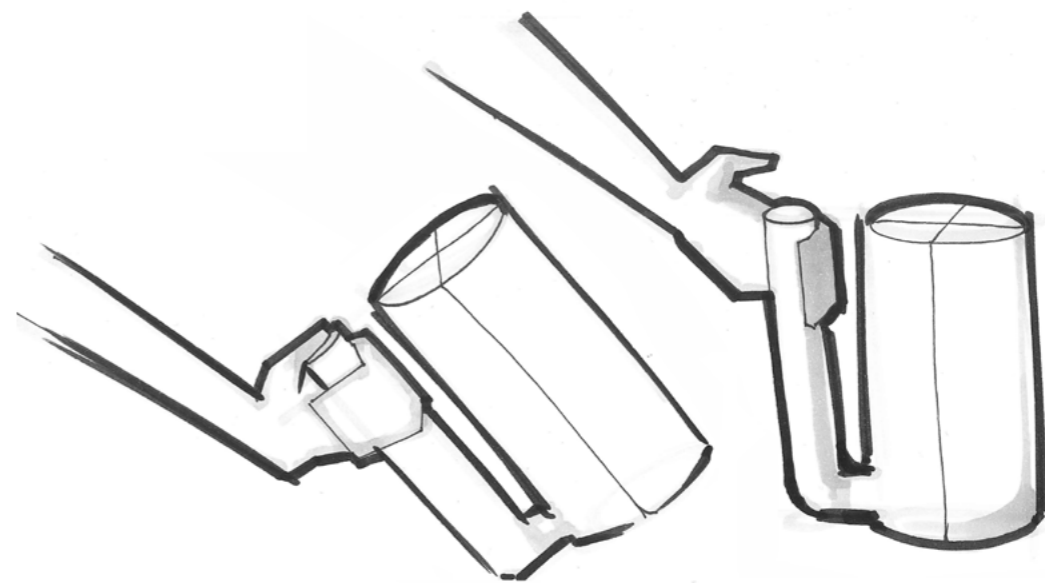
The Watering Can

The decision to make a water pitcher was largely made due to the simplicity of the motion, the intuitiveness of the object itself. As humans, we understand water and its movement and we have an intuitive understanding of how to manipulate it. I had learned that motion was key in my earlier concepts.
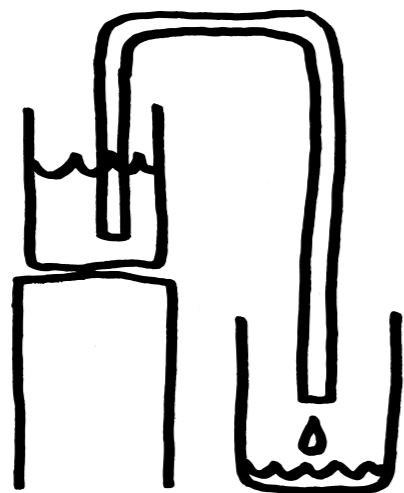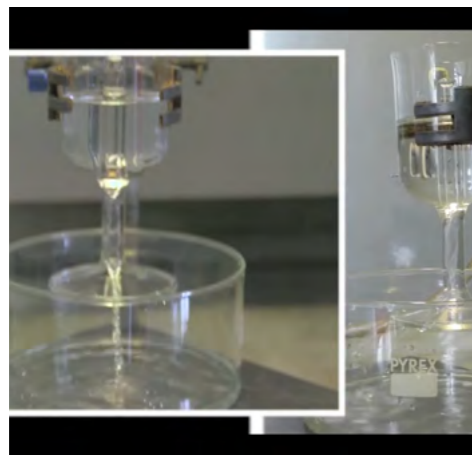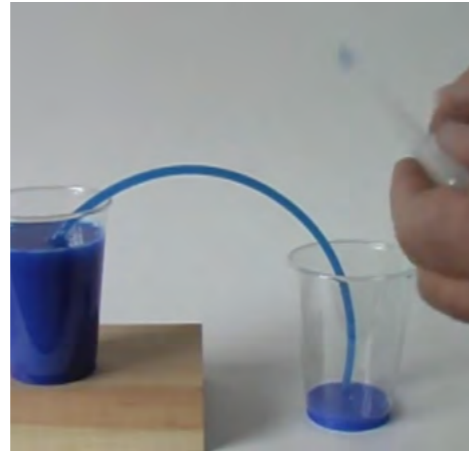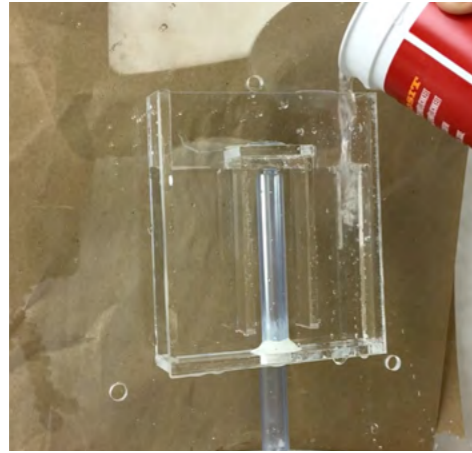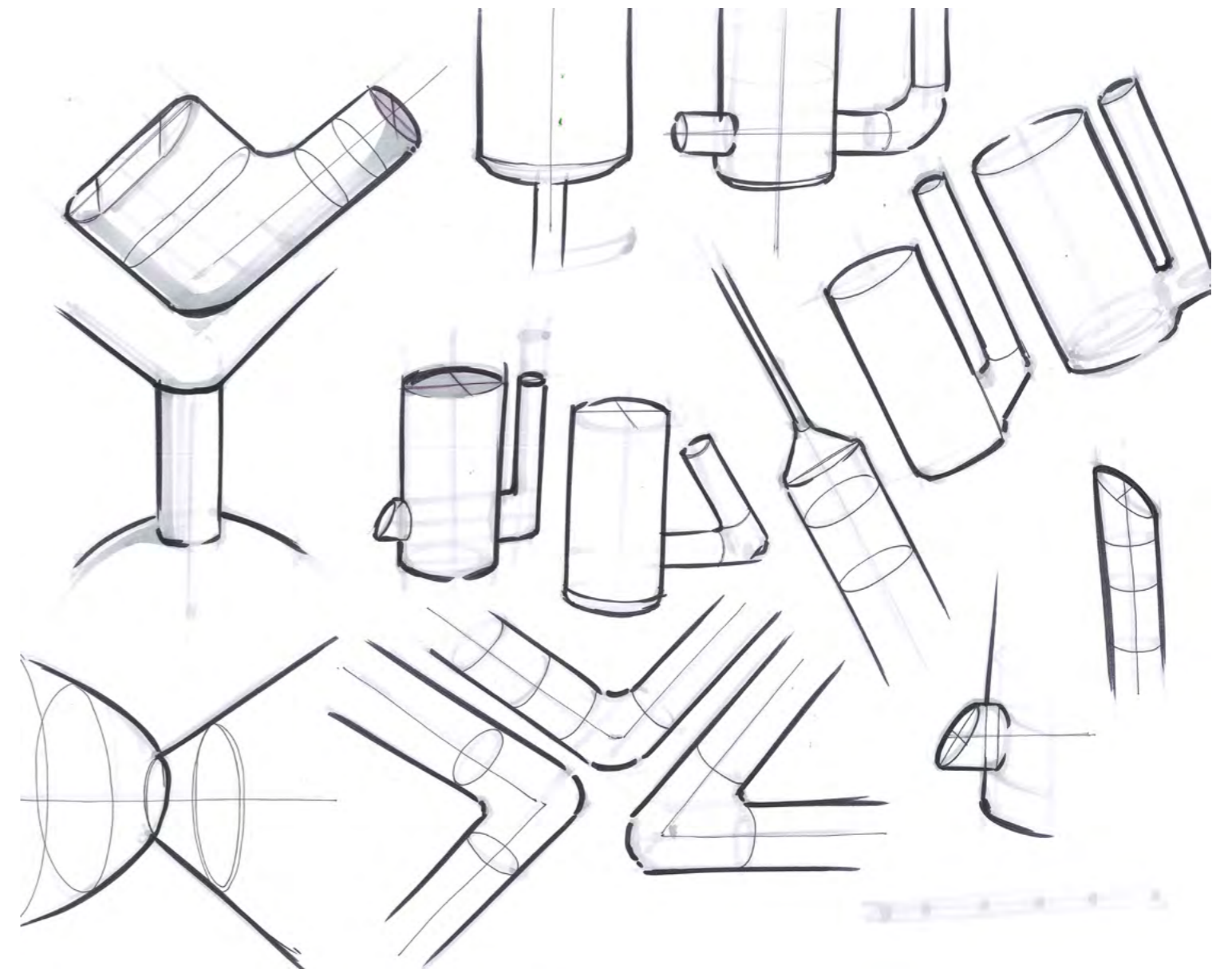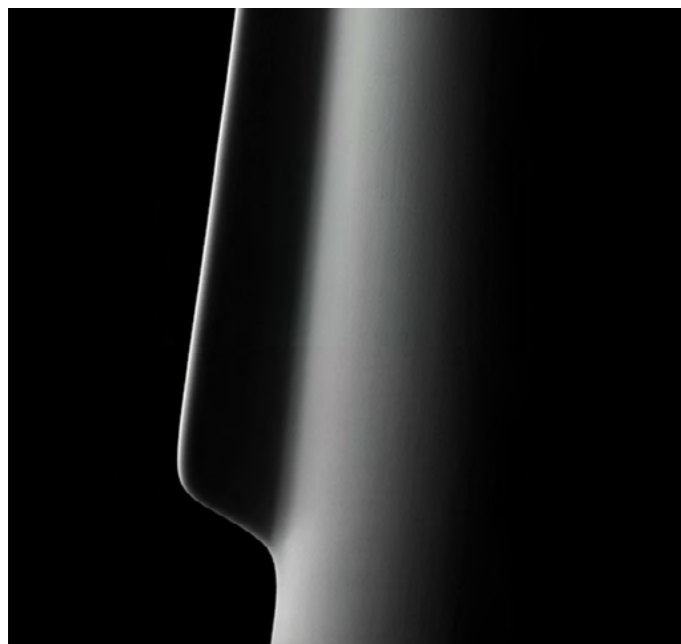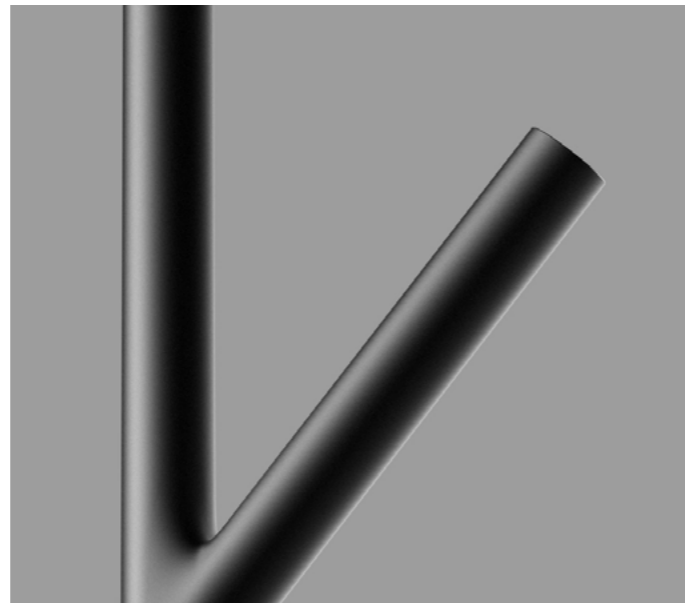
By using a principle called siphoning, the object defies the laws of physics. At least, so it may seem. As the user tilts the object backwards, the water moves through the handle. A vacuum is created and the water flows continuously from the tank. I watched a lot of YouTube videos to figure out how it works

I tried it in my sink

Moodboard

I wanted the various objects to be made as if part of the same family, to have the same stylistic expression. Hence, I worked extensively with proportion, scale and form to find that singular form language.

I considered details such as radii, various diameters and chamfers in an effort to not only make a product that matched the human anatomy, but also something that would look realistic when rendered.
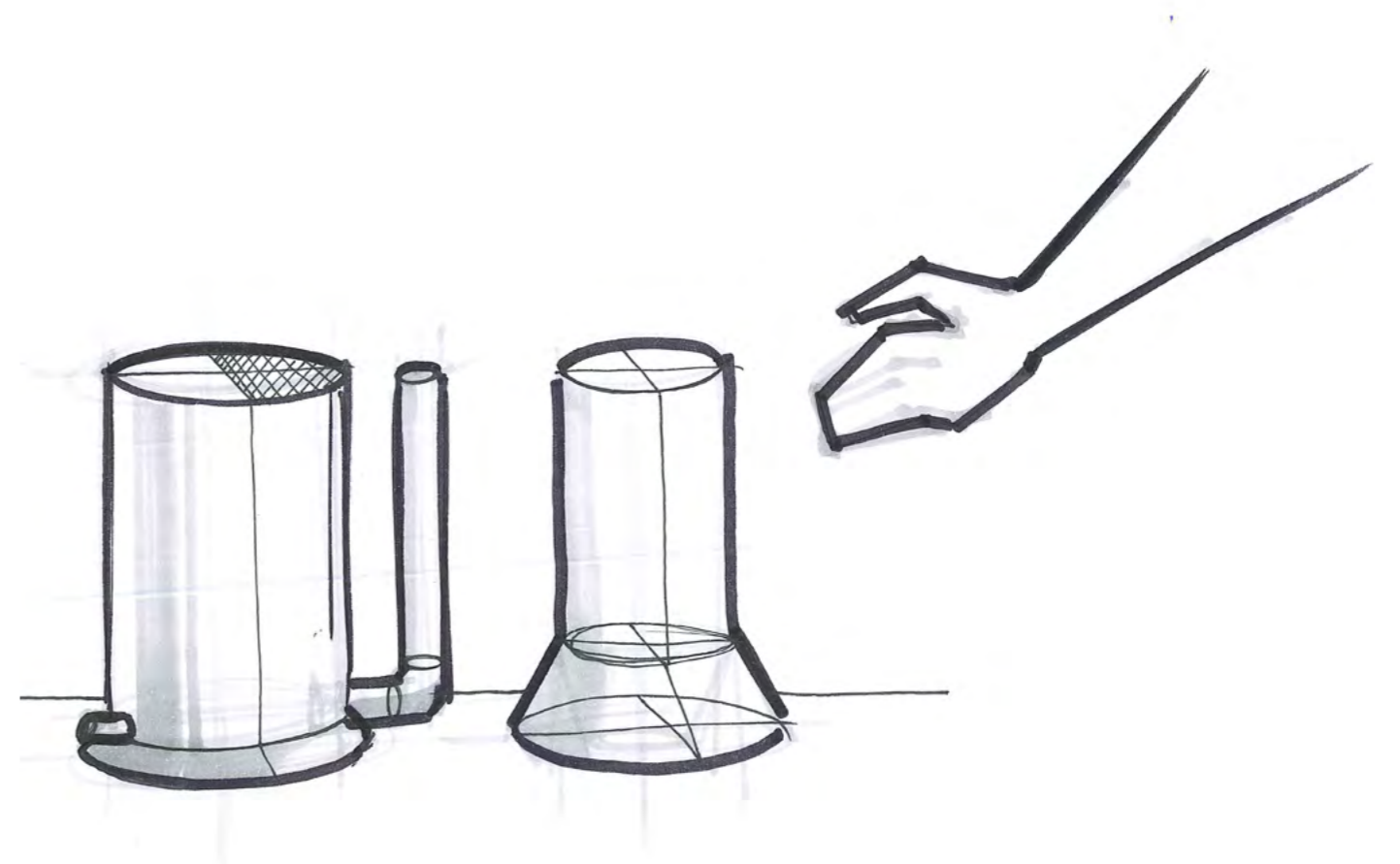
Motion remained central, and so did transitions, as it had been previously. What if we subvert these natural expectations, of water running, of the world as the human knows it? I returned to my texts time and time again as I sketched: *Disparity is manipulation of trust and time, of motion and emotion.*

Proportions and Similarity

I wanted the individual objects to be made as if part of the
same family, to have the same stylistic expression. Hence, I
worked extensively with proportion, scale and form.
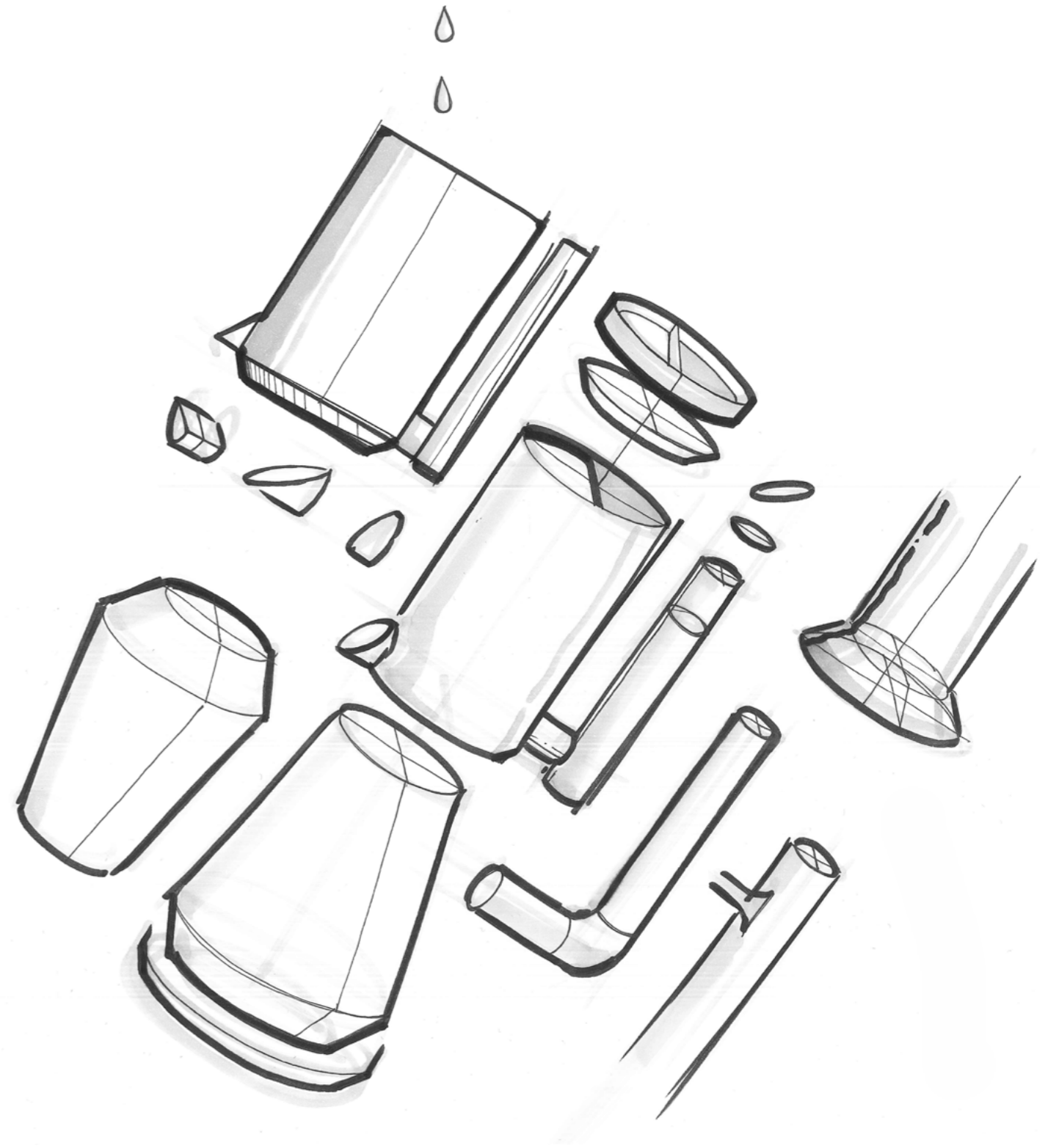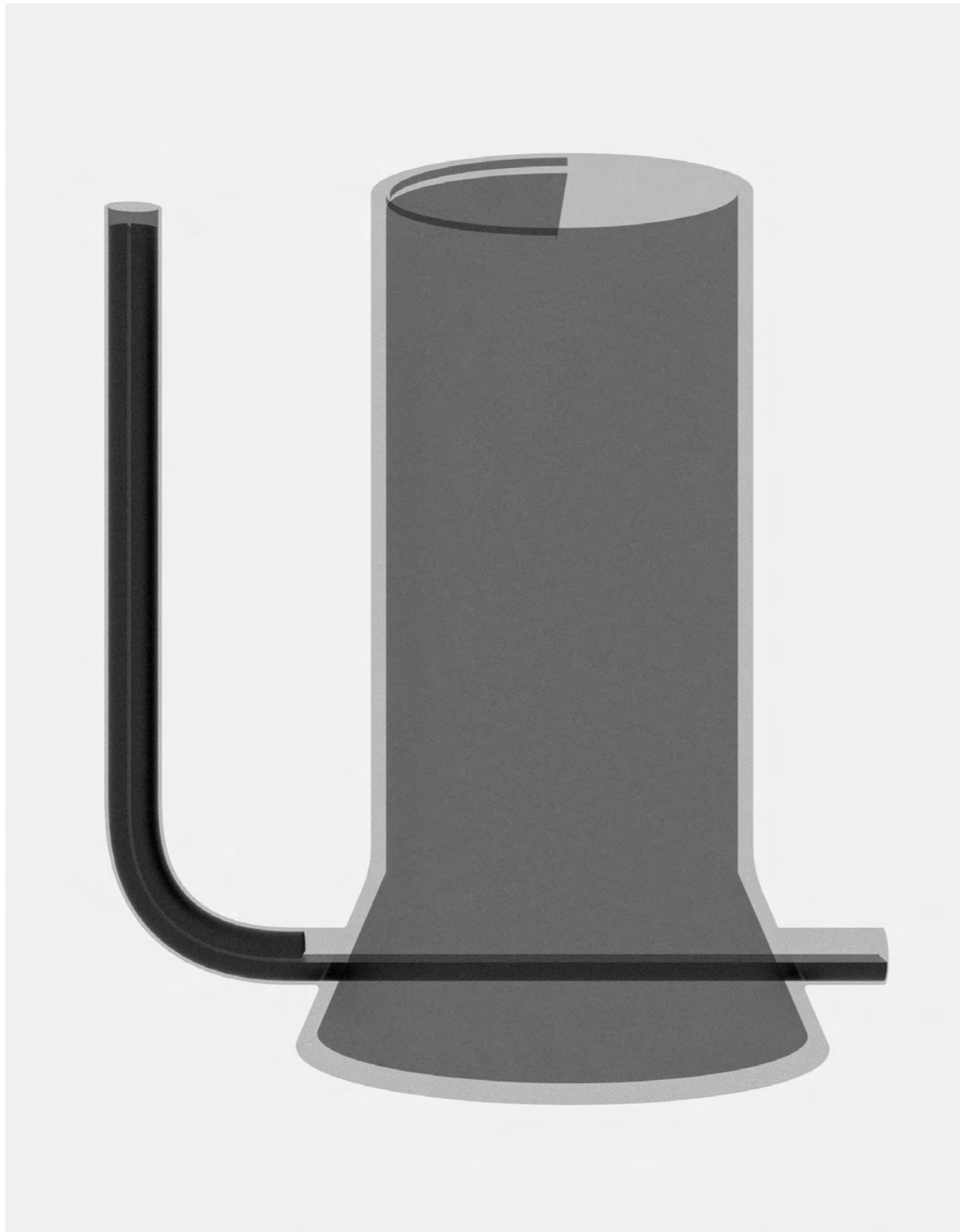
The object is visually disorienting in terms of its function,
yet there's a very clear intent as the function is truly
discovered. I was reminded of my pre-cepts: Why do users
insist on objects having purpose? It is almost an obsession
– a constant search for meaning. *Disparity is frustration,*
Disparity is discovery.

A crucial detail to this entire system is that the pipe is only fully
closed once the user places their thumb on it. There is a disparity.
The object would not be complete without the user.

The Vinegar Dispenser

Who needs a vinegar dispenser? Few, indeed. However, because of it being a thicker liquid the object needed to "manipulate" it, can look very different. The decision to make a vinegar dispenser was inspired by this collection of objects made by Forma Fantasma, pictured above.
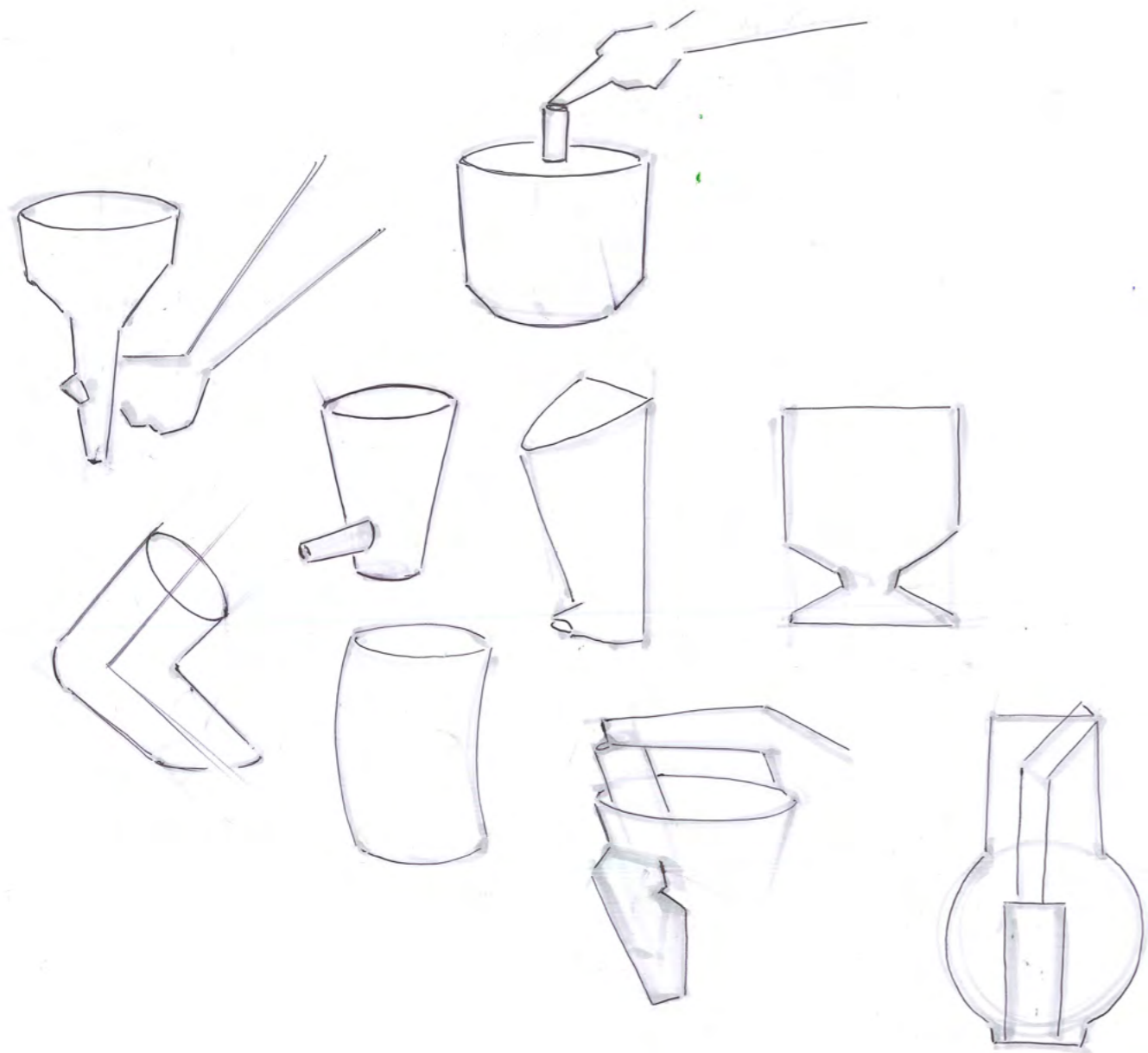
With this design, the vinegar (or oil, for that matter) comes out from beneath and does so only when the user turns the lever above. The flow of the liquid can be adjusted by how much it is turned.
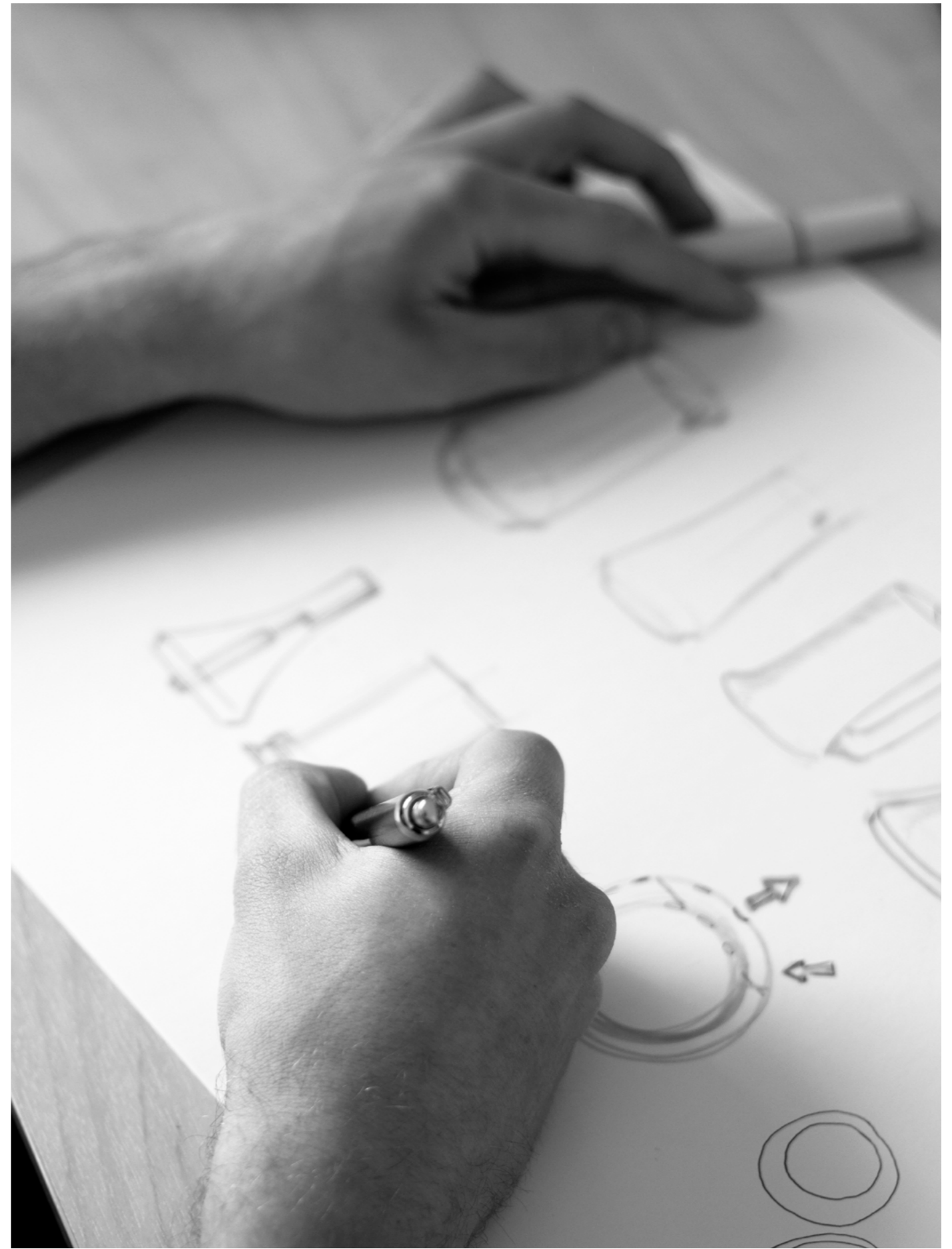
The lever, in turn can be pulled out and cleaned, and here too, one can see the design more clearly. Disparity is discovery. It is only when the object is used that the purpose, the function, unveils itself. There is a mystery to it.
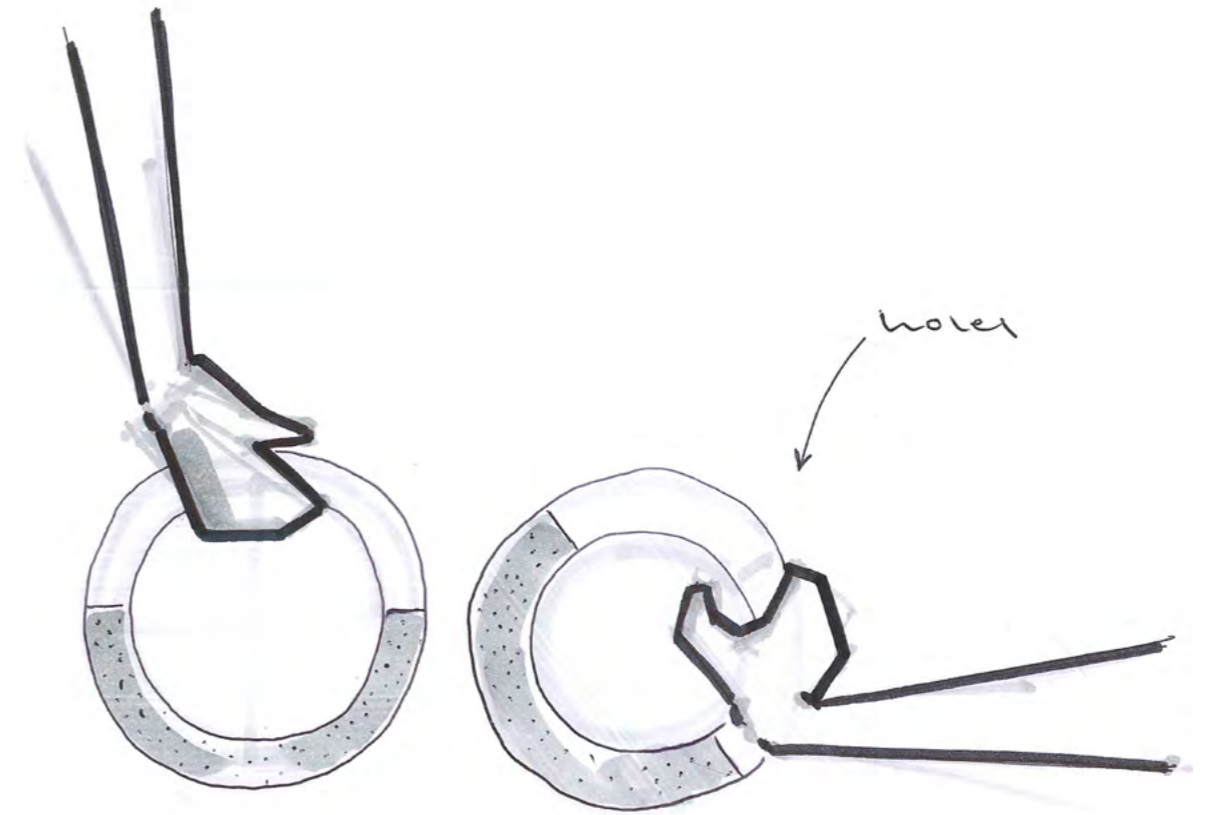
A visit to The Archive's exhibition during Stockholm Design
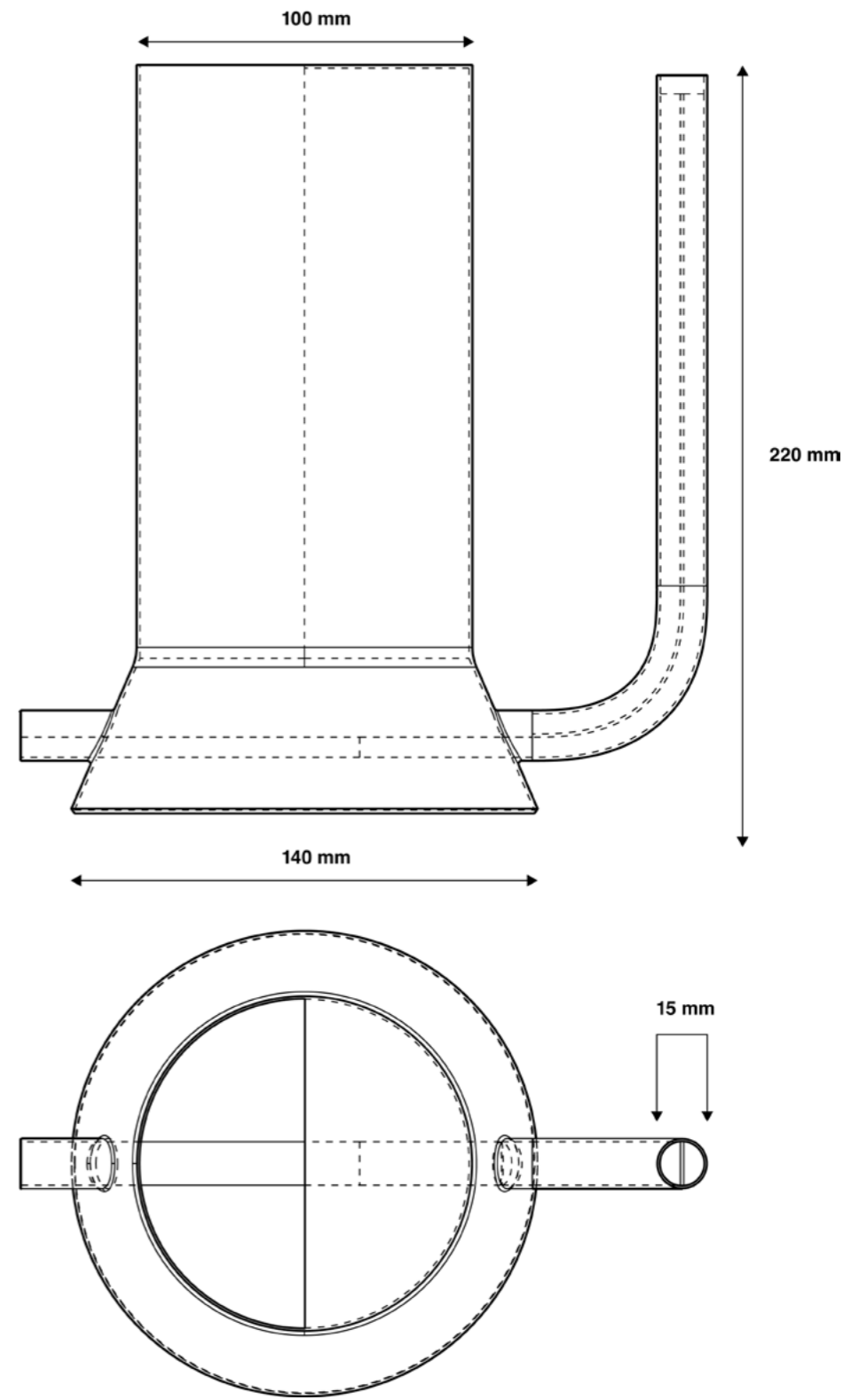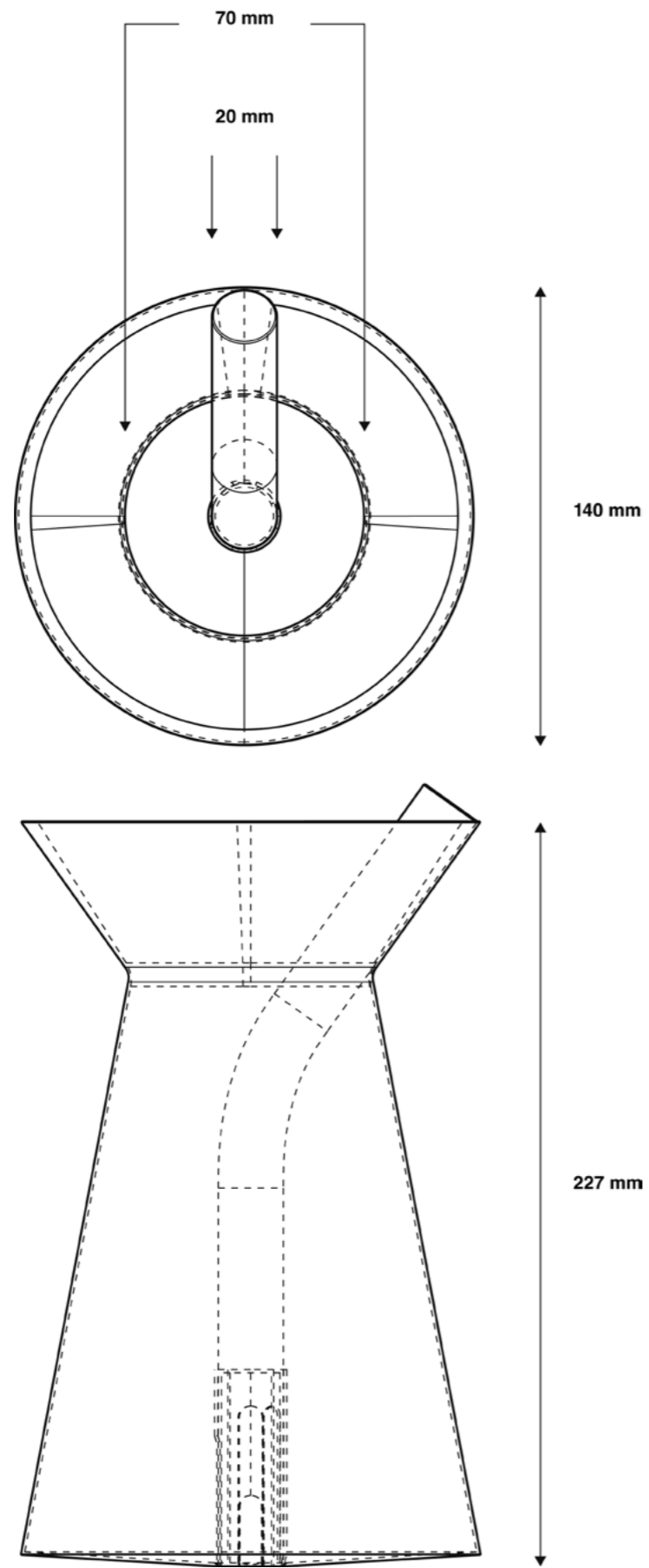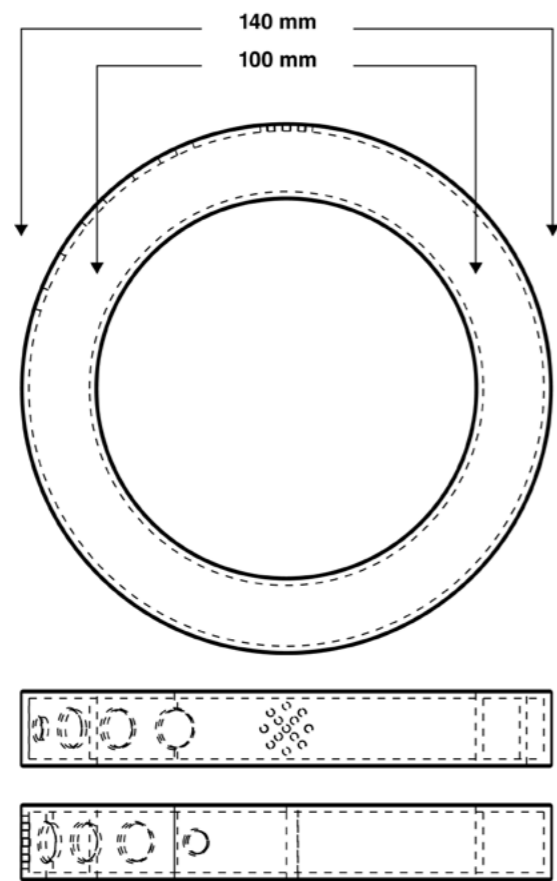Week inspired the objects' aesthetics.

It is a very simple object known to us all. Why should it be
overly complex? The idea here is simple, too.

holey

When there's salt inside the object, in can be balanced on
a surface. The object has five holes a part from where the
salt comes out. The holes are covered by the user's finger
and then tilted. The object may be shaken or hit, like a
tambourine, in order for the salt to come out.

70 mm

20 mm

140 mm

227 mm

100 mm

220 mm

140 mm

15 mm

140 mm

100 mm

CMF: Black powder-coated stainless steel

Result

A watering can, a vinegar dispenser and a salt shaker

Reflections

As with all design projects (or at least, as with all of my design projects), you begin in one direction, to later end up pursuing something different entirely. The reasons for this may be several. In my case, it is because of different interests and ambitions all blending and changing over time. This uncertainty, this constant search for meaning was distressing during the project. But now I can only say that I feel satisfied in a direction that I can confidently call my own.

The project, the resulting designs, and the method could be characterized as poetic or conceptual. I feel the need to explain this further, to reflect on what this means. In the poetic, in the lyrical, one finds the rhythmic, the explorative, the questioning. To say that "one finds" might be incorrect because, after all, one doesn't find as much as search – search for hidden meanings. I feel the need to explain this further because this is how I see it coming together in my design project: in the explorative, the questioning.

Due to the Corona pandemic, I, together with by colleagues in the class, started working from home. This happened just about when I entered the ideation phase in my project. This was the moment I needed to generate ideas and I was stuck at home. It feels ridiculous to say in the context of the pandemic but, of course, I was fortunate. The result was that I had to find other ways, other routines like exercising and various ideating methods to get inspired and to get to work.

But more than anything, more than my personal workflow, more than my own inconveniences, the greatest change is my increased belief in the team. I understand now, better than any time before, that design is greatest together with others.

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