

# TOOLING

Tooling  
Schriftlicher Teil zur künstlerischen Diplomarbeit  
Bartholomaeus Wächter

Universität für angewandte Kunst  
Institut für Bildende und Mediale Kunst  
Abteilung Skulptur und Raum  
Univ.-Prof. Hans Schabus  
Magister SS2024

## Fixtures

In Mass-industry, Tooling is the process of designing and developing devices, methods, and procedures (tools) to aid in improving overall manufacturing efficiency and productivity. The primary objective is to guarantee economic and error-free production. It refers to building various kinds of equipment and gear, such as molds, jigs, and fixtures. Jigs and fixtures are production-workholding devices used to manufacture duplicate parts accurately. The correct relationship and alignment between the cutter, or other tool, and the workpiece must be maintained. To do this, a jig or fixture is designed and built to hold, support, and locate every part, thereby ensuring each is drilled or machined within the specified limits. Every mass-produced component, part, or product, is made using tooling, so the effectiveness of the production chains can be greatly impacted by the quality, price, and lead time of the tooling process. A tool's inability to consistently reach the appropriate tolerances or its ability to introduce flaws into a finished product can have a significant impact on manufacturing cycles. Failure of the tooling can, in the worst case, result in production snags, downtime, and even product recall.<sup>1</sup>

There is no room for error here. These bodies serve only one object. In my imagination, they can do exactly one thing. One step, one cut, one bend. If later in time the product is discontinued, they are useless. "Removed from their original [...]" these bodies "become alarmingly abstract."<sup>2</sup> Bodies that are set aside and lose their function. They rest and hold on to the potential of being picked up once again.

<sup>1</sup> Assembled with words from <https://www.reidsupply.com> and Edward G. Hoffman, *Jigs and Fixture Design*, 1985.

<sup>2</sup> Mark Kremer and Camiel van Winkel, "Metal is a major thing, and a major thing to waste": Interview with Cady Noland," *Archis* No. 1 (1994): pp. 75-80

01:04:31 - *“Vicissitude 1.a) the quality or state of being changeable.”*

01:04:37 - *“Mutability”*

01:04:39 - *“b) natural change or mutation visible in human nature or in human affairs.”*

01:04:45 - *“2a) a favorable or unfavorable event or situation that occurs by chance.”*

01:04:52 - *“A fluctuation of state or condition; alternating change. See change.”*

## Jigs

“Jigs are tools that hold a cutting tool in place or guide it as it performs a repetitive task like drilling or tapping holes. Fixtures, on the other hand, do not guide a cutting tool, but hold a workpiece steady in a fixed position, orientation, or location.”<sup>1</sup>

And then it finally starts raining. Drops of water bounce off the polished chrome poles, leading individuals down to the city’s transportation system. They trickle through striped holes, deep into the city’s stomach where cables, metal rods, and pipes penetrate the fundament on which the city is built. Stairs become slippery, steps forcibly placed to stay in control. Feet fidgeting not to slip. Rubber soles meet with clusters of water particles, in short: puddles - wet socks. “Stick your tongue into the fading veil of rain and you taste the ashes of the city.”<sup>2</sup> Now your stomach too can digest what the city has been digesting for centuries. Wet pieces of paper scatter along poured asphalt pavements. They were meant to be devices of information, announcing infrastructures and events that form identities. Carried in pockets and bags, until accidentally washed in pockets and bags, then picked from the cloth by agitated humans before being hung to dry. “In consumer society Garbage too is culture.”<sup>3</sup> Advertisement posters soaked from the rain, flap down from their designated display-frames, which, representing nothing, can finally catch their breath. An alarm goes off. Eyes open. The next morning, the rain has stopped, but nothing changed. The alarm keeps ringing. Quick steps down the stairs, doors open and close. Scheduled appointments and timetables. Notes, calendars, and clocks await bodies with no time to question their integrity. Buildings are entered, then left behind. It’s an ever-moving image. The faster it moves the higher its production value. Relieved from countless human inhabitants, the buildings enjoy their time off, as the streets become busy guiding bustling crowds from A to B. The first sunbeams penetrate the wet concrete walls, slowly turning them back from dark to light gray. “Neighborhoods and houses are machines which manufacture lives. The city itself speaks. The buildings scream.”<sup>4</sup> Don’t loosen your grip. It’s important to never let go. Keep your hand on the powder-coated aluminum rail. In its core, the promise of trust and stability. Lean in. Don’t question its material functionality, otherwise you’ll get lost in the system. In order to feel optimal security, trust must be given. The material promises to behave in a certain way. It promises to withstand the pressure under which it is put. It follows specifications that define its area of application and guarantee its usability. If one orders a 40mm rod of industrial plastic called POM-C<sup>5</sup>, one can be certain of that which is delivered. Systems have entry points. They appear as having a clear structure, but they are leaky and sometimes permeable. They have cracks. Their regulated quality spills out. “Things like poles that track your movement across the room, almost sympathetic with your movement.”<sup>6</sup> They want to decide for us which paths to take, which places to enter. Like crutches, they become extensions of our limbs and of the person they are trying to construct. “We are constantly confronted time and again with system failure, with systems that let us down or get jammed. We have a perpetual frustration with systems, which also extends to our bodies, which we are expected to imagine as a system of systems.”<sup>7</sup>

<sup>1</sup> <https://www.reidsupply.com/en-us/industry-news/>

<sup>2</sup> Helen Marten, *The Boiled in Between*, Prototype Publishing, 2020.

<sup>3</sup> Peter Osborne, *Lecture at MMK*, 2019.

<sup>4</sup> Jarett Kobek, *Atta*, MIT Press, 2011.

<sup>5</sup> Polyacetal, also known as POM-C or Acetal Copolymer, is a distinguished engineered plastic known for its strength, rigidity, and low coefficient of friction. Its key attributes include excellent creep resistance and dimensional stability, making it ideal for applications that require maintaining precise shapes and dimensions over time. (<https://www.nylacast.com/engineering-polymers/nylacast-polycetal>)

<sup>6</sup> Mark Kremer and Camiel van Winkel, “Metal is a major thing, and a major thing to waste”: Interview with Cady Noland,” *Archis* No. 1 (1994): pp. 75-80

<sup>7</sup> “*Health without security?*”, An interview with Mark Neocleous by Sam Kelly, 2023.

*00:35:17 - And you know why I like plants?*  
*00:35:23 - Because they're so mutable.*  
*00:35:27 - Adaptation's a profound process.*  
*00:35:31 - It means you...*  
*00:35:32 - ...figure out how to thrive in the world.*  
*00:35:40 - Yeah, but it's easier for plants. I mean...*  
*00:35:43 - ...they have no memory.*  
*00:35:46 - You know, they just move on to whatever's next. But a person, now...*  
*00:35:52 - ...adapting's almost shameful.*  
*00:35:53 - I mean, it's like...*  
*00:35:55 - ...running away.*

## Molds

I was watching W. T. the other day. I mostly watch movies in the browser, rather than fullscreen. Ads jitter in frames around the border of the media player. Slogans on flashy animated buttons scream, "Claim Now", endeavoring to seduce me with the proclamation of number one crypto game. Next frame. The image of an adjustable mini wrench keychain: hot deals. It's a sedated state, to be wholeheartedly hugged by the overflow of images. It leaves the mind utterly blank, yet satisfied. After adjusting to this mode of consumption, an interplay of attention sets in. Eyes switch from movie to ads and vice versa. I don't feel too invested. Carefully placed rectangular frames linger, waiting to be interacted with. Occasionally, I watch two or three - continuously, without a break. One after the other.

In the opening sequence, the camera moves towards the city. An aerial shot starts outside the city's parameters in slow progression to its center. Briefly pausing to show places where crowds of people gather. Forcefully perpetrating the streets. Squeezing through small cracks and open windows. Places where people pursue responsibility . Day in, day out. It maps out a definite space on which the story will be played out. I enjoy this introduction of space. Seemingly universal shots become more and more specific. Until the star of the playing field appears. The main building of interest.

Certain images get stuck in my head. I feel the need to keep them, though they have no particular connection to the plot or content. Outtakes of interest, mindfully accumulated into an archive of screenshots and dialogue-poems. Later on, I reuse and re-contextualize the appropriated content for conversation. I often struggle with conversations. I'm a head person. While trying to figure out what to say, what to answer, it already feels superficial. So I reevaluate and construct a give-able answer. Sometimes it works out. Sometimes it feels like lying. Most of the time, I just say nothing.

I am always intrigued by the blunt words between two characters in a film. Without saying anything particularly interesting they still manage to affect me so much. Perhaps it's the shallow honesty of the characters. They mean what they say, or at least, that's how the viewer perceives it. And in some ways, they accept each other's words. Words from a written script, rehearsed, then repeated.

In a manual titled *100 ways to disappear and live free* I read: "If one's Identity proves somehow to be unwieldy, and one chooses not to [play out their hand], there is always the possibility of disappearing or [dropping out,] and beginning a new narrative with the assumption of an alias." This leads me to think about my ongoing frustration with language, and the tools I thoughtfully produce or acquire in order to articulate myself.

*01:09:51 - What's commiserate?*

*01:09:53 - To express sympathy. Now move aside. - Is that like compassion?*

*01:09:56 - Now, compassion means to suffer with,*

*01:09:58 - which is different than just feeling pity.*

*01:10:01 - You need a thesaurus. - A what?*

*01:10:03 - A thesaurus. It's like a dictionary of synonyms.*



*00:32:41 - I've just been spending time on the subway, riding in circles.*

*00:32:45 - Thinking in circles.*

*00:32:48 - There's no way out.*

*00:32:51 - I've been over every inch of this city.*

## Movie Poems

<sup>A.1, A.3</sup> *Trust*, directed by Hal Hartley, dialogue between Maria Coughlin and Mathew Slaughter

<sup>A.2</sup> *Adaptation*, written by Charlie Kaufman, dialogue between Susan Orlean and John Laroche

<sup>A.3</sup> *Dark City*, directed by Alex Proyas, dialogue between Walenski and Frank Bumbstead

special thanks to:

Ada

Anna

Camille

Eva

Felix

Hannah

Hans

Johanna & Michelle

Jonas

Laurids

Lisa

Ludwig

Luize

Paul

Sebastian

Selma

Mum & Dad