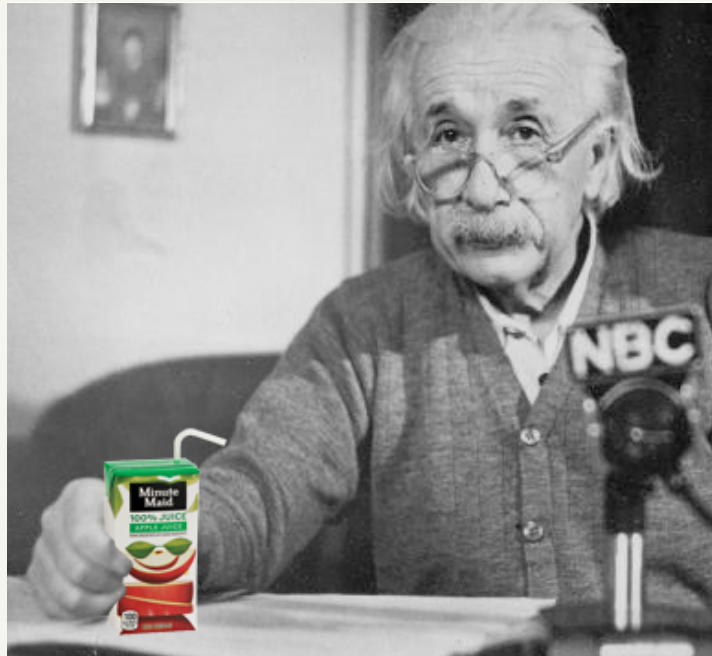


The Physicist and the Juice-box



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Parable #1

“Everything should be as simple as possible, but no simpler.”

The above quote is attributed to Albert Einstein.¹ I love this statement and have used it as one of the fundamentals for our approach to design. It is a complicated statement. The seemingly simple first idea is complicated by the second statement, a sort of adding of new dimensions to what was previously thought to be all the known dimensions. What seems straightforward at first, “be as simple as possible”, is then suggested to have a limit that, if exceeded, would be to the detriment of the original intent. It prompts a deeper consideration of reduction in that there is a line, that if crossed, would begin to reduce too much, as though there is an ideal level of simplicity. This is the part I love because simplicity in design is challenging. It is much harder to design a simple, or minimal condition, than to design one that has more information. The reason is because the additional information allows for things to be hidden, for errors to not be seen, whereas when you reduce something to its absolute minimum of elements, those elements are all clearly in focus as well the relationship between them. But this not a statement about minimalist design, it is about finding the ideal situation whereby nothing more should be added, and nothing further should be taken away.

In this parable on design—which is part of a series—I will discuss the relationship between a physicist and the juice-box and the idea that design should be as simple as possible, but no simpler.

Chapter 1: As simple as possible

The juice-box was invented in March 1944, that is the file date of the patent. It came into use in 1963 as the Tetra Brik owned by the Tetra Pak company, a subsidiary to Akerlund & Rausing, a dry goods manufacturer based in Malmo, Sweden. The story of its creation started much earlier in 1920, when Ruben Rausing, a Swedish industrialist who owned Akerlund & Rausing visited the United States and saw self-service grocery stores. The concept was unheard of in Europe at that time. The self-service grocery store was a new format where the patron, “the shopper,” would walk the store with a basket and select their own products. Prior to this, the store clerk would gather the items for the patron who waited at the counter. After seeing this new condition, Rausing goes back to Europe and asks one of his designers, Erik Wallenberg, to create a new package with the direction, “to use as little packaging material as possible.” Rausing realized that they needed a new type of packaging for milk to supplant the current glass bottle distribution system. Influenced by his visit to the self-service grocery he saw the need for a milk container that could be cheaply made and easily handled by the shopper.

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Erik and his team failed many times trying to solve this problem when, apparently during a bout of sickness, Wallenberg conceived the idea to use a single sheet of paper rolled into a cylinder and folded from two different sides, creating a mathematical tetrahedron. The resultant volume only needed to be sealed in three places and packages could be produced in one subsequent sequence from one roll of paper, using a minimum of material, with a minimum of waste.² The Physicist Niels Bohr would later visit the Tetra Pak factory and call the tetrahedron, “a perfect practical application of a mathematical problem.”



Chapter 2: A bit less simple, a bit more complicated

While mathematically impressive and as simple as possible to manufacturer, the Tetra Bric was an odd shape to handle. The Tetra Pak company continued to evolve the design eventually creating nearly all the folder paper boxes that contain liquids that are familiar to us today, for example the common rectangular cuboid juice box.

Eric Wallenberg's design of the juice-box is one of function. This is the first priority defined by Rausing to conceive of the simplest folded container. Technically, the juice-box then evolves to include aseptic materials, environmental impact considerations for recycling, and along the way someone figures out the simple idea of the punch hole for the straw. Today, if you are designing a juice-box you will likely be using one of the versions developed by Wallenberg and his team, and your effort will be more focused on the exterior packaging. It now becomes a graphic exercise. The needs are to brand the product, differentiate among the flavors, and communicate the necessary and supplemental information about the contents. Further, the designer needs to consider how the shopper will encounter the product, how the product stands out on the shelf in comparison to other offerings, and how it may seduce and engage the shopper to selection. The latter is the experiential dimension.



The Odwalla juice-box (above), is an example of the common approach to the design of a juice-box. The brand name is prominently displayed in the center of the front panel and repeated across all the flavors as a lock-up. The flavors are differentiated through color blocking with some additional imagery surrounding the brand name that show the contents. We are familiar with this design approach and have developed the necessary ability to navigate among the different products to *dese/lect* from the ones we don't want and to focus on the products we do want. But, in the final chapter I want to apply Einstein's statement to the design of the juice-box packaging and highlight an approach to design that I feel exemplifies Einstein's intent while creating a more affective and experiential product solution.

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Chapter 3: As simple as possible, and no simpler

The image above is of a juice-box designed by the Japanese designer Naota Fukasawa.³ This is a design that is simple as possible, but no simpler. The contents of this container are banana juice, which is common in Japan, although less common to us in the United States. He also designed solutions for kiwi and strawberry flavor juices, and I am sure you can visualize the solutions based on his approach to the above. Consider this design approach, and how it is more intuitive and effective at communicating the contents than the Odwalla example. There is no confusion as to the product contents, it looks like a banana and the contents are banana juice. He used the fold of the box to present the banana attributes, he doesn't need to change the shape of the object to communicate "*bananeness*." This is the, "no simpler." One would tend to think they need to recreate the banana, but Fukasawa represents, or recreates, the banana using the key attri-

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butes that we visually associate with a banana. He even uses the structural form of the cuboid container to present slight bruising. He also adds some green gradients on the bottom and on the upper fold to cue back to the staging of ripeness we associate with a fresh banana. So far these are visual qualities, and they are all accomplished using the same printing process as that of the Odwalla juice-box. Beyond representation though, we can also depict a decision in materiality, presumably adding the soft-touch effect to the paper, which has a rubber feel with some graininess that would mimic the feeling of a banana skin. So upon touching the juice-box the feel would further elicit associations with an actual banana. Scent could also be easily added to the printed paper to further dimensionalize the sensory experience.

One would be quick to argue that the solution is less effective in differentiating the brand, but the stroke of brilliance of Fukasawa is to use the same means to brand the banana juice as is used to brand actual bananas, the small supplier sticker. The brand does not need to be broadcast largely over the box, rather the uniqueness of the design could be patented, and the product would be identified simply through differentiation from the other standard box solutions.

Fukasawa has shifted the design from one of purely graphic to one of haptic. He makes a direct visual reference, recreates a visual of the source object of the contents and thus triggers associations with real bananas. The coloring of the banana suggests its ripeness and freshness, and the touch confirms the association.

Now consider how this packaging will affect the experience of drinking. We are coded to perceive the contents of this juice-box as fresher, and more authentic. I would wager that if the same liquid contents were served in both Fukasawa's juice-box and the common Odwalla juice-box that people would find Fukasawa's to be fresher, and taste better. In comparison, the Odwalla juice-box looks manufactured, a bit childish. It is juice in a box. The Fukasawa solution is a multi-sensory experience that initiates the feeling of eating a real banana, thus making the product taste better and the experience more fulfilling.

Notes:

1. I was not attribute this exact quote to Einstein, but it is believed to be a rephrasing of a statement made during a 1933 lecture Einstein gave on the method of theoretical physics where during the speech he equates theoretical physics to Euclidean geometry.
2. Wikipedia
3. "Juice Skin," Naota Fukasawa Design as part of the 'HAPTIC,' Takeo Paper Show, Japan 2004. <https://naotofukasawa.com/projects/349/>
See also Kenya Hara, *Designing Design*, 2015

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