

Synectics

Synectics is a comprehensive method consisting of a series of techniques. The essence of the technique lies in joining together different and apparently irrelevant elements. By making the familiar strange and the strange familiar, designers may generate surprisingly high-quality ideas.

WHAT & WHY? The Synectics method requires you to use Analogies to come up with design ideas because Analogies help you move away from the original problem statement and existing solutions. The 'clues' found in the context of the analogy should be force-fitted to the problem statement. This allows you to develop ideas based on the analogy instead of solely based on the problem definition.

MINDSET: Synectics is based on the belief that the existing world is rich in ideas that can be utilised for new solution. Similar to other creativity methods it requires an analytical mind as well as a creative one.

WHEN? The starting point for using Synectics could be a preliminary problem statement. Synectics is best applied for complex and intricate problems because the procedure is systematic and requires a relatively large investment of time and effort. Synectics can be used in teams and also individually. The method contains guidelines for a problem analysis, idea generation, and selection of alternative solutions.

HOW? Synectics can be divided into several phases, such as *problem finding and purge*, *excursion* (stepping aside from the normal or traditional way of doing things), *force-fitting* (the core of Synectics), and *converging*. The key here is the use of Analogies that can make the strange familiar and the familiar strange.

Start with a problem statement or briefing. Based on this, Synectics users will go through an extensive problem analysis phase, in which they can include discussion between participants if possible. This should lead to a single concrete target, which is seen to be 'the problem as understood'. In a next 'shredding the known' phase known and immediate ideas are collected and recorded. Use Analogies to estrange yourself from the original problem statement to generate inspirations for new solutions and approaches. Gordon (1962) suggested using four types of Analogies in the following sequence:

- **Personal:** Imagine that you are the product yourself.
- **Direct:** Use something from nature.
- **Symbolic:** Use art forms (such as poetry, novels, and movies) to explore how an object elicits certain traits, such as 'the humour of a bicycle'.
- **Fantasy:** Use something that is imagined and does not exist in real life yet.

REFERENCES & FURTHER READING: Gordon, W., 1976. *Synectics, the Development of Creative Capacity*. New York, NY: Collier. / Heijne, K.G & J.D. van der Meer, 2019. *Road map for creative problem solving techniques. Organizing and facilitating group sessions*. Amsterdam: Boom. / Tassoul, M., 2006. *Creative Facilitation: a Delft Approach*. Delft: VSSD. / Wallas, G., 1926. *The art of thought*. In P.E. Vernon (eds.), *Creativity*. Penguin.

TIPS & CONCERNS

Visual and auditory Synectics is a variation of the common Synectics procedure.

Introduce soothing images and music to induce an incubation phase in which the participants can daydream in a relaxed state.

After some time, switch to more active music and images so that your participants are stimulated to generate ideas.

LIMITATIONS

With an untrained group, the facilitator needs to work in one small step at a time and have enough experience to inspire the group.

Synectics can be quite demanding for inexperienced participants.

For the converging stage, various methods can be used, such as Itemised Response and vALUe.

Step 1: Start with the original problem statement. Invite the problem owner to present and discuss the problem briefly.

Step 2: Analyse the problem. Restate the problem, and formulate the problem as a single concrete target.

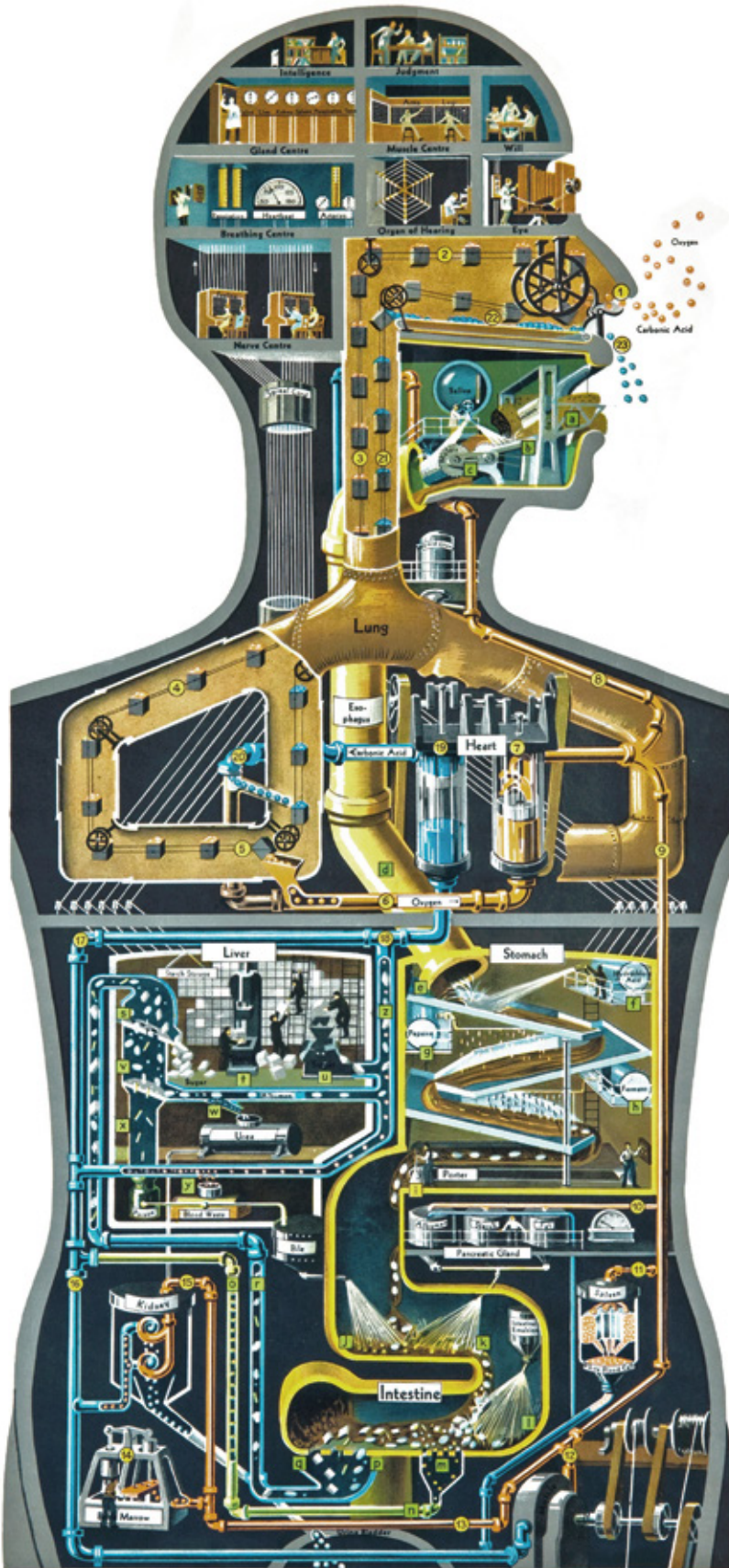
Purging - Step 3: Generate, collect, and record the first ideas that come to your mind. Be sure to shred the known.

Excursion - Step 4: Find a relevant analogy.

Step 5: Ask yourself these questions in order to explore the analogy: What types of problems occur in the analogous situation? What types of solutions are there to be found?

Force-fitting - Step 6: Force-fit various solutions to the reformulated problem statement. After this, generate, collect, and record the ideas.

Converging - Step 7: Test and evaluate the ideas. Use the Itemised Response method or another evaluation method to select ideas for further conceptualisation.



Fritz Kahn: *The Man as Industrial Body*. Fritz Kahn (1888-1968) is considered by many to be the founder of conceptual medical illustration. Kahn produced a series of books during the 1920s on the inner workings of the human body using analogies of modern industrial life. His modernist visualisation was fitting since he was writing during a time of great industrial and technological change, especially in Germany.

Storytelling

Storytelling is a method for designers to seek input from consumers and users on ideas early on in the design process. The narratives added to the design concept enable consumers to immerse themselves either in a new world or in the use setting.

WHAT & WHY? Stories serve as early input for your innovative idea and can filter out conservative responses that are typically present when an idea is new. This input helps you to check whether your idea meets the consumers' needs (present or future) or whether it adds value to them. This consumer input is only valuable when the consumer understands the new idea well.

Stories trigger a special kind of imagination that is called narrative transportation. When we watch a movie or read, we sometimes forget the world around us, and while immersed in this story world, we may have a clear image of this world in our heads and can even share the feelings and thoughts of the main character that can feel like a real-life experience. You can explore research questions regarding general attitudes, believability, ease of use perceptions, benefits, or disadvantages. Try to explore the user's recognition and even their evaluation of current, new, or future needs and intended meanings. You can use this input to improve your idea, and a new story about the idea may emerge. Stories could be discussed with stakeholders so that they also can experience the use and benefits; this allows them to generate a clear picture of the idea and assess possible consequences for consumers' daily practices. Sometimes the story is accompanied by visualisations, which can either be in a text or video format.

MINDSET: The art of writing stories is to identify the main theme and the variation from the story's beginning to its end. One pitfall is to construct an overly compelling story with extraneous details.

WHEN? For really new product ideas, a story is a useful prototyping tool in the early phase of the design process.

HOW? Present multiple stories to the same participants (monadic or comparative testing). Visuals helps to distinguish the stories. participants tend to take the depicted content into account in their evaluation, and thus the mindset rules about avoiding emotions and rich details also apply here. Simple drawings are sufficient. Avoid facial expressions and use a consistent style.

Step 1: Determine how many ideas you want input on, what kind of input you would like to get, and from whom. Decide on the format (as in visualisations, text, or video).

Step 2: Write the story, and transform your need for input into a list of questions.

Step 3: Select and invite participants.

Step 4: Let them read or watch the story. Encourage attentive reading.

Step 5: Interview the participants or let them complete a survey. Encourage them to share their opinion and emphasise that there are no right or wrong answers.

Step 6: Analyse your data, improve your idea.

Step 7: Develop a new story.

Step 8: Discuss your findings and improvements with your stakeholders.

REFERENCES & FURTHER READING: Van Laer, T., Edson Escalas, J., Ludwig, S., & Van Den Hende, E.A. (2018). What happens in Vegas stays on TripAdvisor? A theory and technique to understand narrativity in consumer reviews. *Journal of Consumer Research*. / Schweitzer, F., & Van den Hende, E.A. (2017). Drivers and consequences of narrative transportation: understanding the role of stories and domainspecific skills in improving radically new products. *Journal of Product Innovation Management*, 34(1), 101-118. / Van den Hende, E.A., & Schoormans, J.P.L. (2012). The story is as good as the real thing: Early customer input on product applications of radically new technologies. *Journal of Product Innovation Management*, 29(4), 655-666.

TIPS & CONCERNS
Develop writing skills and general development by reading books.

Use simple language and avoid the overuse of adjectives.

Avoid strong emotional fluctuations. Otherwise, you will get undesired 'emotion-in equals emotion-out' effects in the obtained consumer input.

First set the scene, followed by an imaginable plot with events and outcomes in the middle and concluding with a neutral ending.

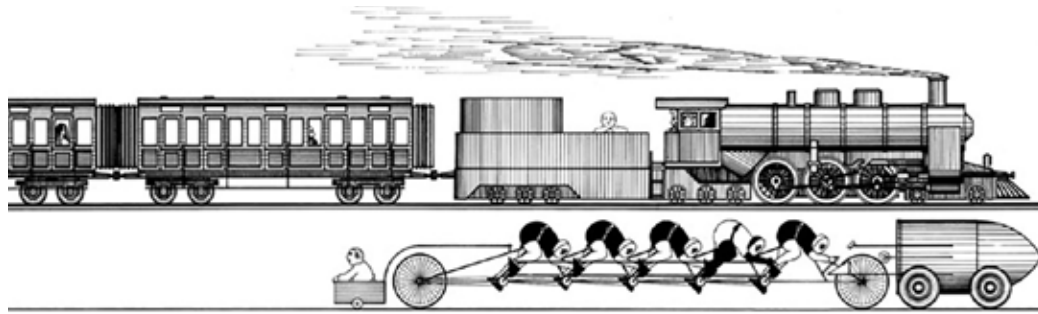
Avoid an obvious happy ending for it will make your intentions unclear. You want an evaluation of the idea, not of the story.

LIMITATIONS

Valuable input is only possible when consumers understand the idea.

Misunderstandings that are resolved through discussion can be valuable input for improvement of your idea and story.

Having only textual explanations of product details in a story format will not allow all consumers to imagine them the same way. At that point, different prototyping methods will be more suitable.



Science fiction has been called 'the literature of ideas', and often explores the potential consequences of scientific, social, and technological innovations. It started with Mary Shelley's 200-year-old Frankenstein creature who is more alive than ever in his new role as the bogeyman of artificial intelligence (AI). *Supermale* from 1902 is a novel by French author Alfred Jarry, revolving around a race between a train and a team of cyclists fuelled by perpetual-motion food, and the exploits of endurance and sexual athleticism. The word 'robot' entered world literature in 1921, via the Czech Karel Čapek's play *RUR* (Rossum's Universal Robots). Today series like *Black Mirror* (Netflix) further explore new techno-worlds through storytelling.

