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Trisociation with AI for Creative Idea Generation

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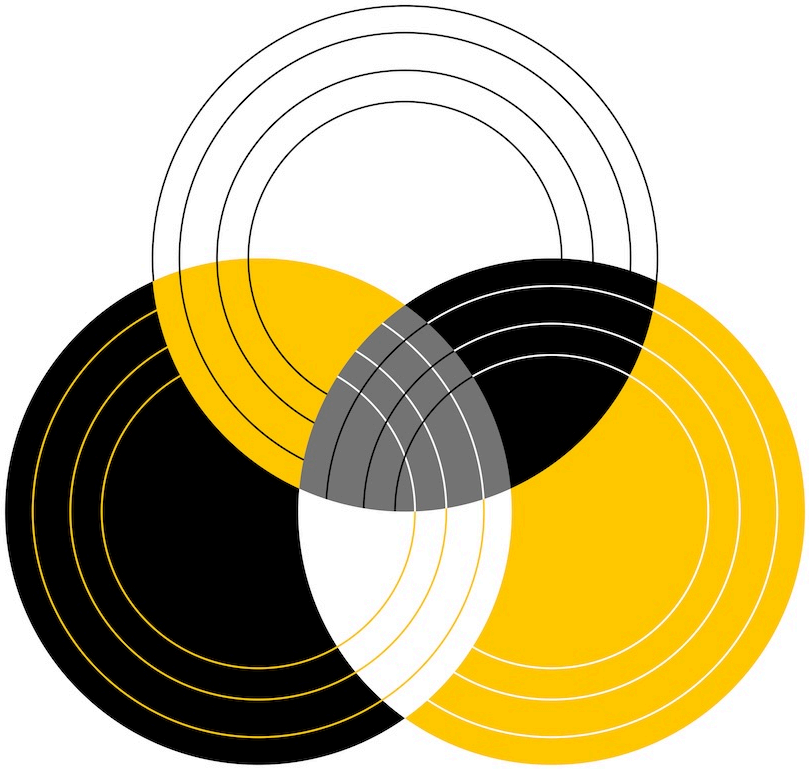

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The trisociation method can be used as an AI-supported creativity tool for idea generation.

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The generation of creative ideas (i.e., novel and useful ideas) is a critical foundation for the innovation management process (Cummings & Oldham, 1997; O'Reilly & Binns, 2019). In our article in the July/August 2023 issue of *Harvard Business Review* magazine titled "**How Generative AI Can Augment Human Creativity**," we wrote about the transformative role AI can play in democratizing innovation by aiding the generation of divergent ideas for business applications. One technique we presented was *trisociation*, a then-little-known creativity technique that leverages AI to combine three disparate concepts into a novel, coherent idea.

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Using AI-powered trisociation, we combined the concepts of an elephant, a butterfly, and various product categories to produce appealing designs for candies and chairs. We also demonstrated how trisociation can be effective for textual descriptions and visual depictions of creative ideas.

Since our article's publication, there has been substantial interest in AI-enabled creative thinking in organizations looking to boost their creativity. Organizations like **SAP** are adopting the article's principles to guide AI-supported idea generation, and leading academic institutions, such as **UC Berkeley**, are teaching these principles in their executive education programs.

Specifically, several organizations – including marketing research companies and consulting firms – are experimenting with trisociation as a tool for AI-augmented idea generation. The Paris-based multinational market research company Ipsos has integrated trisociation as a feature in its **Four.AI** workshops alongside traditional creativity methods such as SCAMPER and questioning assumptions. The German software and consulting firm **HYPE Innovation** has proposed using trisociation to develop compelling idea campaigns and slogans.

With the rising interest in AI-enabled ideation, and specifically, the method of trisociation, this article aims to provide a set of guidelines to support individuals and teams in using trisociation for high-quality idea generation.

The insights we share stem from our extensive 22-month exploration of the topic and our experience teaching AI-enabled idea generation and trisociation at more than 10 organizations across Asia and North America, including both businesses and universities. Trisociation can generate diverse creative outputs– such as haikus and children's stories (Eapen, 2023). This piece focuses specifically on its business applications, such as new venture concept development, catchy visual advertising, and product ideation.

Getting started with using trisociation using AI to spark novel ideas is easy. It begins by simply prompting a large language model (LLM) like OpenAI's ChatGPT or Anthropic's Claude to generate an idea from three given concepts. However, achieving meaningful, high-quality outputs often depends on carefully selecting those initial concepts. This article aims to illuminate these nuances and offer guidance on using AI-driven trisociation to generate ideas that are both novel and useful (Cummings & Oldham, 1997).

The Power of Three

Trisociation is a logical extension of the creativity technique called *bisociation*, inspired by the work of the Hungarian-born British novelist Arthur Koestler (1964), which generates novel ideas by combining two typically unrelated concepts (as demonstrated in **this video**). Trisociation takes this interaction further by employing three concepts, unlocking a wider spectrum of possibilities for creative thinking.

One of the few references to trisociation appears in Design for the Real World, where Austrian-born American design educator and former CalArts School of Design dean Victor Papanek (1984) briefly noted its potential as a creative tool. However, till recently, trisociation has largely escaped mainstream awareness and is notably absent from lists of popular ideation techniques (such as **this list from Miro**).

As a creativity technique, trisociation has certain advantages – it provides users with more flexibility to choose from a range of initial combinations compared to bisociation. Starting with six initial concepts (such as music, table, silver, stones, light, and shoes) there are 15 ways of selecting two concepts for bisociation (such as music and table), but 20 ways of selecting three concepts for trisociation (such as music, table, silver). Starting with 100 random concepts, an ideator has 4,950 unique sets of combinations of two concepts for bisociation, but 161,700 sets of combinations of three concepts for trisociation. This three-way association provides an additional degree of flexibility, allowing organizations to adjust initial concepts for optimal balance between novelty and feasibility.

Despite these advantages, trisociation remains underutilized in business due to its cognitive demands. While humans can quickly generate ideas from two unrelated concepts, the extra complexity of trisociation often poses a mental hurdle. On closer inspection is easy to understand why. Trisociation takes substantially higher mental effort compared to bisociation. Humans generally find it challenging if asked to generate a product idea if handed three unrelated concepts – music, stones, and shoes – because of cognitive overload.

However, with the support of AI, the untapped potential of trisociation is within reach. Large Language Models (LLMs) such as OpenAI's ChatGPT and Anthropic Claude appear generally more competent than humans at unifying three independent concepts (such as music, stones, and shoes) into coherent ideas such as "a pair of running shoes with hollow crystalline soles that create unique musical tones as you walk on different surfaces, like a geological xylophone."

Large Language Models (LLMs) like ChatGPT excel at trisociation due to their parallel processing and attention mechanisms. These capabilities allow them to assess complex relationships between three concepts simultaneously. Unlike humans, who often

experience cognitive overload with multiple ideas, LLMs maintain a broad context, enabling creative association without the same constraints. Training on extensive datasets also provides LLMs with a vast database of potential combinations, giving them an advantage in exploring connections beyond typical human experiences. Additionally, LLMs lack the cognitive biases that restrict human ideation, such as the bias against novelty observed in organizations (Mueller et al. 2023). As a result, AI can propose unconventional associations without reservation, fostering fresh, innovative ideas that might otherwise remain undiscovered.

One of the apparent creative capabilities of Generative AI (both LLMs and image models) lies in its ability to blend and integrate concepts in various forms. For example, one might ask an LLM such as ChatGPT to blend two concepts (i.e., bisociation) by asking it to describe and illustrate an elephant-inspired car. Conceptual blending using GenAI can easily extended to three concepts using trisociation such as products inspired by elephants and butterflies. Text-to-image models such as DALL-E, Ideogram, or Midjourney can be used to create images and text-to-video tools developed by **Runway** and **Luma Dream Machine** can be employed to generate videos of such blended concepts (**see an example here**).

Strategic Implementation

Trisociation can serve as a versatile tool for both open-ended and focused ideation. In open-ended ideation, constraints are minimal. Here, trisociation can generate a wide range of ideas – from a novel business startup concept to a guerilla marketing campaign or a radical product concept that transcends traditional categories. Focused ideation, by contrast, centers around a specific concept, such as a product category. Here, trisociation directs creative thinking toward reimagination within a set boundary.

The novelty of trisociated ideas can be finely tuned by the choice of terms. Using unrelated concepts often yields highly innovative ideas. However, these ideas may lack immediate business feasibility. Conversely, related terms are more likely to produce familiar, practical solutions but may fall short of originality. The use of related and unrelated concepts can help balance unusualness and familiarity – a trait seen in highly creative ideas (Toubia &

Netzer, 2017). Thus, striking a balance between related and unrelated terms allows businesses to generate ideas that are both creative and commercially viable – a quality often seen in successful innovation.

Open-Ended Trisociation

The most straightforward approach to open-ended trisociation is to prompt AI to generate ideas by combining three random concepts.

By linking disparate ideas, open-ended trisociation can generate unconventional products, eye-catching advertisements, or fresh business concepts. To illustrate, we selected three random concepts – puzzle, echo, and harvest. We fed them to ChatGPT and Claude and prompted the AI to generate business ideas through trisociation. In response, we received ideas such as, "interactive, eco-conscious puzzle games that combine audio storytelling with physical and digital puzzle-solving" and "puzzles that reveal sustainable farming techniques through soundscapes and imagery."

These initial suggestions often serve as springboards that can inspire human teams to build upon them. Human ideators can use these 'raw ideas' to generate more complex and valuable concepts. While open-ended trisociation can yield highly original ideas, many business cases are better served by using focused trisociation, where one or more of the concepts is strategically chosen to align with specific objectives.

Trisociation with Single Focal Concept

In many cases, businesses start a single fixed focal concept – such as a product category – and seek only ideas within this area. For example, a shoe company is only looking for ideas relevant to footwear. Thus one of the trisociating concepts is fixed and plays the role of an anchor. The choice of the other two concepts can help determine how novel or unusual the idea is.

One approach is to select two unrelated concepts alongside the focal term, maximizing originality but potentially sacrificing practical value. Given a focal first concept such as a shoe, an ideator can choose to select two random concepts, such as 'table' and 'butterfly',

that are unrelated to the focal concept. However, this approach could lead to highly unusual ideas that are not feasible or of little business value.

A second approach might involve selecting one related and one unrelated concept to improve the chance of identifying creative ideas that balance unusualness and familiarity. For instance, a footwear company might choose “shoe” as the focal term, “grip” as the related term, and “butterfly” as the unrelated term that introduces novelty.

Finally, a business may select two concepts closely related to the focal idea, such as “grip” and “bounce,” to produce highly feasible, though perhaps less novel, ideas. This method is ideal for refining existing products rather than creating groundbreaking innovations.

Trisociation with Dual Focal Concepts

In many business scenarios, trisociation requires focusing on two fixed concepts, each serving as an anchor.

For example, consider the challenge of developing an innovative basketball shoe. Here, where the two fixed concepts are basketball and shoes. With these two focal points, the choice of a third concept becomes strategic and is to be selected appropriately to determine the novelty and feasibility of the resulting ideas. There are three ways we can proceed. One approach is to use a third concept that is entirely unrelated to both focal terms. For example, introducing using concepts like “osmosis” which is unrelated to both “basketball” and “shoe”. Such an approach could inspire highly original ideas – but may lack immediate business viability.

A second approach involves choosing a third concept that is related to only one of the focal points. For instance, adding “hoop,” which is related to basketball but not directly to shoes, maintains a level of familiarity with one concept while introducing novelty with the other.

Finally, companies can choose a concept that connects to both focal terms in a complementary way, such as “traction,” which relates to both basketball and footwear. This approach can yield highly practical ideas that enhance core product features, though it may not yield the same level of originality as more unrelated terms.

Practical Applications

Next, we discuss three practical business applications of trisociation including identifying new venture ideas, developing novel product concepts, and creating visual advertising that grabs attention. The form of trisociation, depending on the degree of novelty required, can be open-ended or focused as illustrated with examples below.

New Venture Ideas

Open-ended trisociation can help generate unique business models by merging three seemingly unrelated concepts into a novel venture. For instance, asking AI for an idea that trisociates the unrelated concepts ‘health,’ ‘origami,’ and ‘digital’ yields the concept of “a digital platform that uses interactive, origami-inspired exercises to improve mental wellness and fine motor skills”. This trisociation is visualized using DALL-E in Figure 1A.

Figure 1A: Trisociation of health, origami, and digital

More often, entrepreneurs and businesses may use focused trisociation to explore innovation opportunities within a specific industry. In such cases, one might start with a focal industry concept such as ‘restaurant’, and select the other two concepts depending

on the desired novelty of the idea. For example, one might choose two unrelated concepts such as ‘microscope’ and ‘backpack’ to arrive at a highly novel concept. By trisociating the above concepts, we obtain the idea, of “A portable ‘Micro-Dine’ restaurant experience offering gourmet dishes served in compact, backpack-ready containers, complete with mini-microscopes to explore the food’s microscopic beauty and nutritional detail before tasting.” This concept is visualized in Figure 1B.

Figure 1B: Trisociation of restaurant, backpack, and microscope

For moderately novel yet feasible ideas, one can choose an unrelated concept such as ‘mirror’ and a related concept such as ‘temperature’. Using trisociation to gets us the following business concept, “a smart restaurant experience where interactive mirrors display personalized menu suggestions based on your body temperature and wellness insights.” This concept is visually depicted using AI in Figure 1C.

Figure 1C: Trisociation of restaurant, mirror, and temperature

Novel Product Concepts

Trisociation can also fuel product innovation. In an open-ended approach, a business might ask AI to generate a product that combines three unrelate concepts, such as ‘vase’, ‘bee’, and ‘temperature’ to yield a highly novel product concept, “A vase that uses bee hive structure for airflow, adapting based on Temperature to keep flowers fresh longer.” This trisociation is visualized using DALL-E in Figure 2A.

Figure 2A: Trisociation of vase, bee, and temperature

However, in most practical cases, there is a focal product concept that the ideator or business is interested in such as ‘shoes’. There are several ways we can use trisociation with this focal term as the anchor. One approach is to choose the other two terms to be unrelated to the focal concept, such as ‘bridge’ and ‘compass’. Trisociating these terms using Claude 3.5 Sonnet gave us the product idea, “GPS-guided climbing shoes with integrated compass for safe traverse navigation on high-altitude bridges and mountainous terrain.” This trisociation is visualized in Figure 2B.

Figure 2B: Trisociation of shoes, bridge, and compass

Another approach is to mix a related concept, such as ‘safety’, and an unrelated concept such as a ‘telescope.’ By trisociating these terms with ‘shoes’, we obtained the product concept, “LED-illuminated hiking boots with telescoping soles that extend for better visibility and stability during nighttime stargazing adventures.” This trisociation is visualized in Figure 2C. By strategically choosing terms that balance familiarity and novelty, trisociation enables businesses to generate products that are both innovative and relevant.

Figure 2C: Trisociation of shoes, safety, and telescope

Catchy Advertising

Trisociation with AI is also a powerful tool for creating eye-catching visual advertising. By combining elements from three unrelated concepts, companies can generate visually striking visual concepts that could be used to 'hack' the attention of observers.

Trisociation has already proven effective in modern advertising, as demonstrated by Mountain Dew's "**Puppy Monkey Baby**" campaign. The ad merged three unrelated elements – puppy, monkey, and baby – into a single, surreal character, creating a memorable representation of the Kickstart drink's three components: Mountain Dew, juice, and caffeine.

To create a visual ad concept using AI, one might select three random terms, such as 'cactus,' 'violin' and 'submarine' and subsequently use trisociation to create a visual concept that grabs attention, with taglines such as "nature's deep harmony" and "uncharted harmony." This trisociation is visualized in Figure 3A. The visual need not include elements directly related to the business – a restaurant might simply feature murals outside its building with incongruous trisociated imagery to draw the attention of passersby.

Figure 3A: Trisociation of cactus, violin, and submarine

More commonly, businesses are interested in generating visuals with an obvious focal concept such as ‘pizza’ for a gourmet pizzeria. The choice of the other two concepts can influence the unusualness of the imagery. For example, consider a pizza restaurant that wants to create a catchy visual ad for its pizza. It can then choose to trisociate ‘pizza’ with two unrelated concepts such as ‘shark’ and ‘music’ to get novel but relevant visuals, with potential taglines such as “Rock your Tastebuds,” and “Dive into the Flavor Beat.” This trisociation is visualized in Figure 3B.

Figure 3B: Visualization of the trisociation of pizza, shark, music

A pizzeria could decide to trisociate the term ‘pizza’ with a relevant term, ‘cheese,’ along with an unrelated term such as ‘bear’ to get visuals that balance unusualness and familiarity. We used this method to create several catchy visuals (Figure 3C) that might inspire billboard advertising with taglines such as “Discover the Wild Side of Flavor”, and “Un-bear-ably Cheesy Goodness!” [1] Readers can try this approach with our custom GPT, **Gorilla! Marketing**.

Figure 3C: Trisociation of pizza, cheese, and bear

Implementation Guidelines

To maximize the value of AI-enabled idea generation and trisociation in your organization, businesses will benefit from paying attention to the following four steps.

- *Goal Definition*: Begin by clarifying the type of innovation you aim to achieve. The specific trisociation approach should be guided by the goal – otherwise, the ideas can disappoint.
- *Concept Selection*: If you’re seeking breakthrough ideas, select concepts from unrelated fields to spark fresh insights. For practical, incremental innovations, draw upon related concepts that align closely with your industry’s current landscape.
- *Human Refinement*: Use AI-generated ideas as starting points for further development. Raw ideas generated by LLMs are rarely perfect or polished – and require the support of human judgment and feedback to optimize outcomes.

- *Idea Curation*: Maintain a curated database of diverse concepts relevant to your industry. This resource will enable your team to quickly access and experiment with ideas that align with your innovation objectives.

Looking Ahead

Today, businesses are increasingly turning to AI-supported idea generation to fuel creativity and breakthrough thinking across functions such as marketing, product development, and beyond. Techniques such as trisociation can enhance the ideation capabilities of individuals, teams, and entire organizations. By employing AI for trisociation, companies can not only broaden their creative horizons but also systematically produce ideas that span a spectrum of novelty.

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