The Poetics of Service: Making in the Age of Experience
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Introduction

Design is the art of making. The Greek word *techne*, which is the origin of the term "design," refers to the knowledge of making guided by the particularity of the material used. Carl Mitcham has suggested that techne refers to "a special knowledge of the world that informs human activity accordingly." To clarify, he explains that while Plato distinguished between techne (the knowledge of making) and episteme (universal knowledge), Aristotle argued that techne is knowledge interactively mediated by the sensory perceptions of materials and the systematic knowledge of logos. In other words, states Mitcham, making is knowledge in action, which connects materials and ideas.[1] This view resonates with Donald Schön's discussion of design as a reflective conversation using the materials of the given situation.[2]

If making is particular to material, though, how can we understand making in design projects where immaterial concepts, such as information, interaction, system, or services, are central to making? Historically, a dichotomy between matter and mind has been preserved, but scholars like Tim Ingold argue that materials do not exist as fixed attributes but "occur" as they are experienced in an environment. According to him, materials are "stories" rather than fixed entities.[3] To discuss making of the immaterial, we draw on the theory of storytelling, which is an archetypical framework for the analysis and construction of immaterial human experiences. Storytelling also is an art of making, capturing the patterns of life and turning them into a structure that people can understand and reproduce.

This study focuses particularly on the making of service. Service design refers to the activity of planning and organizing the invisible elements of a holistic experience across multiple touchpoints and stakeholders.[4] Thus, service often is compared to dramatic constructions of experience, such as choreographed interactions or a staged performance.[5] In particular, the making of a service is characterized by co-production, in which customers, designers, and service providers are involved in the creation process. The co-participants collaborate, applying specialized competences to collectively produce and consume service simultaneously for mutual benefit.[6]

1 Carl Mitcham, *Thinking Through Technology: The Path Between Engineering and Philosophy* (Chicago, IL: University of Chicago Press, 1994), 117–28.

2 Donald A. Schön, "Designing as Reflective Conversation with the Materials of a Design Situation," *Knowledge-based Systems* 5, no. 1 (1992): 3–14.

3 Tim Ingold, "Materials Against Materiality," *Archaeological Dialogues* 14, no. 1 (2007): 1–16.

4 See, e.g., Daniela Sangiorgi and Alison Prendiville, eds., *Designing for Service: Key Issues and New Directions* (London, UK: Bloomsbury Publishing, 2017); and Lara Penin, *An Introduction to Service Design: Designing the Invisible* (London, UK: Bloomsbury Publishing, 2018).

5 Hugh Dubberly and Shelley Evenson, "Designing for Service: Creating an Experience Advantage," *Introduction to Service Engineering* (2010): 403–13; and B. Joseph Pine and James H. Gilmore, "Welcome to the Experience Economy," *Harvard Business Review* 76 (1998): 97–105.

6 See Robert F. Lusch and Stephen L. Vargo, eds., *The Service-Dominant Logic of Marketing: Dialog, Debate, and Directions* (Milton Park, UK: Routledge, 2014). In particular, see Bernie Jaworski and Ajay K. Kohli, "Co-Creating the Voice of the Customer," in *The Service-Dominant Logic of Marketing* (Milton Park, UK: Routledge, 2014), 127–35; and Richard L. Oliver, "Co-Producers and Co-Participants in the Satisfaction Process," in *The Service-Dominant Logic of Marketing* (Milton Park, UK: Routledge, 2014), 118–27.

We use "storytelling" to refer to a theoretical perspective that construes the creative processes as an ongoing, participatory collaboration that continues even after the design deliverables are given to the community that co-creates the service. Therefore, we present the gerund "storytelling," instead of the nouns "story" or "narrative," to emphasize the premise of a continuous conversation and simultaneous interactions. Service storytelling is a collective dialectic constantly regenerated and renewed by stakeholders, including customers, workers, managers, and community members who collaborate to expand and enrich services.

Designers have used storytelling and its methods in the design process to efficiently collect qualitative information, to deepen creative insights, and to efficiently communicate the solution to customers. Storytelling often refers to a research tool to generate initial ideas in participatory design, to obtain information in narrative research, and to gather user feedback from focus-group sessions after ideation.[7] Storytelling also indicates a prototype tool in the idea-exploration phase to engage and involve participants more actively, or a narrative structure that can be used in ideating, crafting, and testing user-experience (UX) design products.[8] Whitney Quesenbery and Kevin Brooks have defined five roles of storytelling in a UX design process: explaining, engaging imagination, sparking new ideas, creating shared understanding, and persuading.[9] Service designers also have used storytelling to construct methods in the design process; such methods include prototyping tools, narrative inquiry techniques for interviews, and design strategies for place identities.[10]

This article aims to enrich these explorations by providing a theoretical framework for understanding the nature of storytelling and its relationship to the making of service. We propose a conceptual framework of service storytelling that appropriates Aristotle's Poetics to examine the multiple creative forces that shape service co-production. We first present an analysis model to define the key elements of service by grounding them in Aristotle's four causes. We then use a reinterpreted version of Joseph Campbell's Hero's Journey to propose a synthesis model that unifies the four causes into a phasic flow.

The Poetics
Aristotle's Poetics is the earliest surviving historical work to discuss drama and has since become the foundation of the contemporary storytelling theories. Often misunderstood as limited to poetry, tragedy, or theatrical play, the Poetics explicates a comprehensive theory on the construction of human experience, regardless of the medium. Aristotle did not focus on tragedies because of their subject matter but because of their structured plots, with human subjects at the center of experience. In ancient Greece, epic

7   See, e.g., Delbert C. Miller and Neil J. Salkind, *Handbook of Research Design and Social Measurement* (London, UK: Sage, 2002).

8   Whitney Quesenbery and Kevin Brooks, *Storytelling for User Experience: Crafting Stories for Better Design* (New York: Rosenfeld Media, 2010); Donna Lichaw, *The User's Journey: Storymapping Products that People Love* (New York, NY: Rosenfeld Media, 2016).

9   Whitney Quesenbery and Kevin Brooks, *Storytelling for User Experience: Crafting Stories for Better Design* (New York: Rosenfeld Media, 2010)

10 See, e.g., Bill Moggridge, "Prototyping Services with Storytelling," *Service Design Symposium*, Copenhagen Institute of Interaction Design, Copenhagen, Denmark, 2008); Anu Helkkula et al., "Characterizing Value as an Experience: Implications for Service Researchers and Managers," *Journal of Service Research* 15, no. 1 (2012): 59–75; and Sandra Viña and Tuuli Mattelmäki, "Spicing Up Public Journeys – Storytelling as a Design Strategy," in *Conference Proceedings, ServDes 2010: Exchanging Knowledge* 60, no.7, (Linköping, Sweden: Linköping University Electronic Press, 2012), 77–86.

Formal cause
The archetype that influences
the holistic form with distinct
characteristics (e.g., the Baroque)

Peripeteia
Reversal of the situation
Change of fortune

Efficient cause
The method of making,
the maker, technology,
and tools (e.g., carpenter)

End cause
The product's functional role
once the making is done
(e.g., dining)

Complication
Conflict arising
Chain of events

Anagnorisis
Sudden revelation
Falling action
Catharsis

Material cause
The substance that constitutes
a product (e.g., wood)

Beginning
Inciting incident
following causal necessity
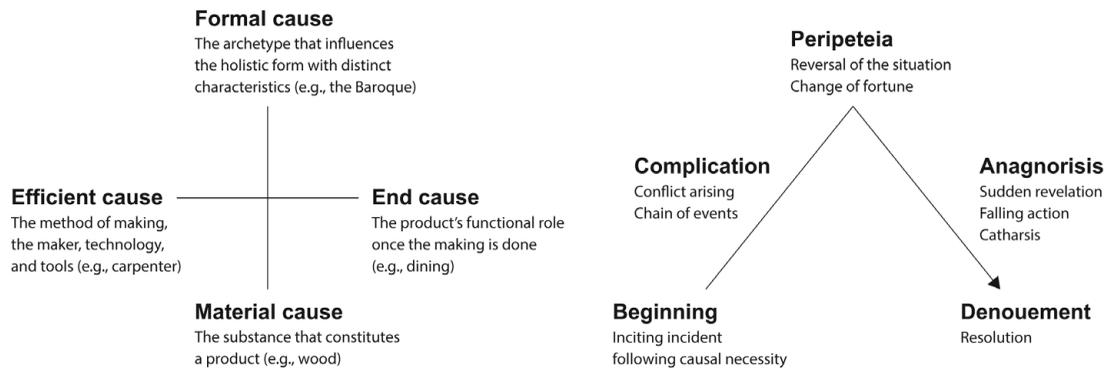
Denouement
Resolution

Figure 1
Poetics frameworks of analysis (left) and
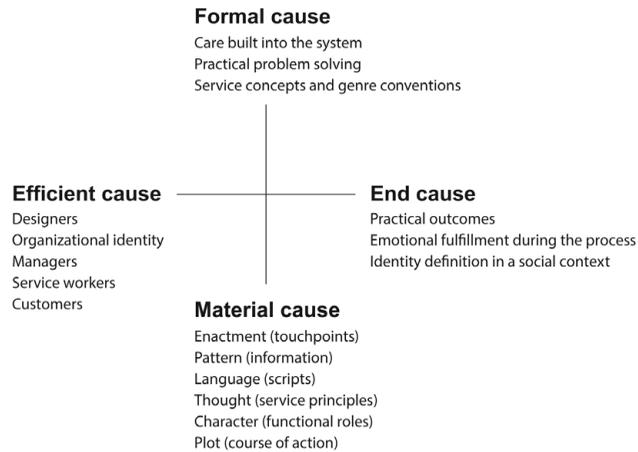synthesis (right). Created by authors.

poetry was considered the opposite of tragedy; it was a lengthy historical record passed down orally and reinterpreted by generations of bards. By contrast, tragedies were shorter, stand-alone performances with clear beginnings and endings. Intense emotion blended their parts into integrative flows. Therefore, the Poetics evolved into a theory on the essence of human experience.

In the field of design, the Poetics is often used as a systematic framework to discuss design as a productive science. For example, Richard Buchanan explained that productive science analyzes essential functional elements and synthesizes them into a product. He proposed productive science as a suitable framework for studying existing products, the activity of designing, and the nature of design itself.[11] In addition, László Moholy-Nagy, in his foundational article, "Design Potentialities," examined the nature of design by analyzing it with the four causes: the materials, technology, forms, and the artist's role.[12] The Poetics also has been used to systematically understand new products and the activities of designing. For example, Brenda Laurel applied Aristotle's Poetics to analyze human–computer interaction (HCI), leveraging a systematic model to understand intangible interactions.[13] In service design, Spyros Bofylatos drew on the four causes to discuss the inseparability of consumption and production in his examination of service from a craft perspective, providing a framework to explore service as social innovation.[14]

The systematic, experiential, and social nature of the Poetics makes it a useful framework for understanding the dramatic potential of service. This article aims to construct this understanding by discussing service experience through Poetics-inspired models of analysis and synthesis (see Figure 1). In this work, "analysis" means the examination of artificial products based on the necessary relationships among the four causes, and "synthesis" means a temporal structure that brings these elements into a cohesive flow that can be experienced by the person who walks

11 Richard Buchanan, "Strategies of Design Research: Productive Science and Rhetorical Inquiry," in *Design Research Now*, edited by Ralf Michel (Basel: Birkhäuser, 2007), 55–66.

12 László Moholy-Nagy, "Design Potentialities," in *New Architecture and City Planning*, ed. Paul Zucker (New York: Philosophical Library, 1994), 81–90.

13 Brenda Laurel, *Computers as Theatre* (Boston: Addison-Wesley Publishing, 1991).

14 Spyros Bofylatos, "Adopting a Craft Approach in the Context of Social Innovation," *Craft Research* 8, no. 2 (2017): 223–40.

Figure 2
The analysis model of service storytelling.
Created by authors.

Formal cause
Care built into the system
Practical problem solving
Service concepts and genre conventions

Efficient cause
Designers
Organizational identity
Managers
Service workers
Customers

End cause
Practical outcomes
Emotional fulfillment during the process
Identity definition in a social context

Material cause
Enactment (touchpoints)
Pattern (information)
Language (scripts)
Thought (service principles)
Character (functional roles)
Plot (course of action)

through it. Aristotle originally introduced a dynamic process of conflict's arising, developing, and resolving. We use instead an applied version of Campbell's Hero's Journey, which we introduce in the synthesis section as a means to better address the participatory nature of service experience.[15]

Analysis: The Four Causes
In this section, we analyze the key components of service storytelling using the four causes (see Figure 2). Material cause refers to the substance that constitutes a product; for example, the matter that comprises a chair could include wood, plastic, or metal. Efficient cause typically indicates human factors, such as the maker, skills, and tools. For example, two sculptors with different techniques achieve different results, even if they work with the same materials. Formal cause influences the holistic form of a product and infuses it with distinct features. For example, the idea (Ιδέα) of a Rococo chair influences making differently than the idea of a Modernist chair. End cause is the functional role of a product. For example, a chair for dining and a chair for reading have different features.

Material Cause
The discussion of service materiality developed historically from an initial emphasis on its immateriality compared to a physical product (i.e., focusing on its intangibility, heterogeneity, inseparability, and perishability) to become a service-dominant logic. In this latter view, service is the substance of the value exchange, and goods are its material medium.[16] Another view sees service as a system that combines material and immaterial elements; examples include the molecular model and the product-service system model.[17] In the present study, we draw on the Poetics to examine the material cause from the perspective of human experience.

15   Joseph Campbell, *The Hero with a Thousand Faces* (San Francisco: New World Library, 2008).

16   Robert F. Lusch and Stephen L. Vargo, *The Service-Dominant Logic of Marketing: Dialog, Debate, and Directions* (Milton Park, UK: Routledge, 2014).

17   See, e.g., G. Lynn Shostack, "How to Design a Service," *European Journal of Marketing* 16, no. 1 (1982): 49–63; and Nicola Morelli, "Designing Product/Service Systems: A Methodological Exploration," *Design Issues* 18, no. 3 (Summer 2002): 3–17.

According to Aristotle, the most basic matter of drama is *enactment* (i.e., everything perceived with our senses). In service, the most basic element that corresponds to enactment is the touch-point—the "moment of truth" in which the customer feels and recognizes the service. Many companies place tangible elements at these touchpoints to influence customers' perceptions and to assist in their interactions with the service. In this way, the intangible service is mediated and consolidated by products, such as uniforms, chairs, and brochures.

A collection of enactments becomes a *pattern*. Dispersed touchpoints are meaningless if they are not integrated; they must be properly connected to guide customers from advertisements to websites, and eventually to the place where the service takes place. The connected touchpoints must convey clear information and meanings about each touchpoint in relation to another, and these connections become pattern. Because customers are considered outsiders who are unfamiliar with the service, information design is crucial to mediate the perceptibility of patterns, and this mediation or delivery of pattern information can be visual, textual, or auditory.

Pattern serves as a compositional element of *language*, and in service materiality, language often is represented by a service script. Service employees use standard scripts, or lines of speech with a specific sequence and flow. If a pattern corresponds to a scripted line, language is what determines how the lines should be combined into a script to support a unit of activity. For example, a certain set of questions and answers are required of a service employee when a customer checks in at a hotel. The service script, as a unit of communication to support customer action, also can include nonverbal forms of communication, such as spatial layout or digital interfaces.

Language is the expression of *thought*. Included in thought are the customer's cognition and emotion while conjecturing about the logic behind a service. For example, customer-friendly service, deliberately conveyed through the musical tone and polite script of call center representatives are a deliberate display of a customer-friendly service. Thought also can comprise the philosophy and principles behind a service—often manifested in a manual that guides employee decisions and actions. The manual reveals whether the principles of a service prioritize the customer's need or the company's profits.

Thoughts (as service principles) also shape the *character* (i.e., participants) of a service. For example, in the service industry, there are clichéd standards of hospitality. These standards often are represented by staff members whose roles are determined by the design of uniforms that they wear. These characters perform

their roles to define the situation of the service, and then they influence the customers to perform certain roles as well. These characters are not just individuals; they functionally represent different thoughts within a service. Collectively, characters serve as symbols that manifest the character of the service as a whole.

Finally, characters serve as the material of *holistic action*. As an idealized model of human action, a dramatic plot consists of causally interrelated, holistically fused incidents in a flow. Service also dramatizes a plot—one that logically and emotionally supports action (i.e., a collection of enactments and all their component materials) that has a practical purpose. As such, the entire service plot should carefully streamline and coordinate every step and piece of information so that it supports the collective action among participants.

Efficient Cause
Service has many efficient causes other than the creator—the traditional efficient cause—because diverse stakeholders are involved in its co-creation. The final service is collectively produced on the spot as a collaboration between service participants, including employees and customers.

Designers typically are interpreted as authors of the product that they make, but service design authorship is different from traditional art, in which a single author usually assumes ownership. Service design is often performed by a multidisciplinary team that comprises members from various backgrounds, thus infusing diverse skills and knowledge into the design. Nevertheless, we tend to highlight a star creator as the author, even in teamwork, which reflects the human tendency to want to define an efficient cause.

Because of this tendency, service authorship often is assigned to a service organization. The character and identity of the organization can serve as the efficient cause of the service for those who co-create it. Branding plays a critical role here. The character of the company usually is symbolized by a company logo, managed and reflected in advertisements, that also permeates all service touchpoints to create a consistent voice.

Managers, who operate on the frontlines, also make a considerable number of decisions about services. Similar to theater directors, service managers reinterpret and orchestrate the reproduction of services daily. At small-scale service providers, the planner, manager, and provider might be the same person; however, in large service organizations, managers exert independent influence as efficient causes. Despite its evident importance, the role of service managers is less frequently discussed in design.

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In addition, service workers represent and engender the character of the service and act as touchpoints at which customers interact with the service. Just as the same play can be performed differently, depending on the actors, the same system can offer different services depending on the service workers. The personality of the service representative significantly influences the customer's overall perception of the service, especially for small, local services.

Because customers participate in service co-production, they are also a key efficient cause. Indeed, service quality is primarily determined by customers' subjective perceptions. Additionally, unlike material objects, which are thrown away after their use value has been exhausted, service is recreated every time existing customers return and their word-of-mouth advertising brings in new customers.

Formal Cause
Defining a service from a formal perspective is difficult because of the wide variety of services in the world. Even physical objects can be seen as material interfaces that mediate a service; for example, a washing machine could be considered the materialized form of a laundry service. What, then, is the formal cause that influences people to perceive something as a service?

First, service is a form of practical problem solving. Service is fundamentally a system to support people's collaboration to resolve a problem or fulfill a need. Therefore, the process of defining the problem, communicating the options and roles, and resolving the issue should be clearly embedded in the form of the service from the beginning. Both the customers and the service workers then can efficiently make decisions and take actions that are needed in the process.

A second formal characteristic of service is that "care" for customers is systematically built into its process, which makes people perceive it as a "service." Care should be embedded in the form itself as a natural characteristic of a service, rather than relying on the individual decisions of service workers. For example, service designers and providers should not expect individuals' random decision to assist wheelchair users; instead, there should be a guideline in place (i.e., a manual for service workers), and it should be systematized with an inclusive design (e.g., an automatic door).

Third, service can have a distinctive genre. In storytelling theory, genre refers to a composition characterized by similarities in pattern, rule, style, or subject matter. Services likewise have distinct patterns. For example, in many hotels, room service staff

are often on standby until midnight even though this is not profitable for the hotel. Nonetheless, hotels provide room service because it is widely perceived as a quintessential signifier of a luxury accommodation service. Cultural factors also greatly influence genre because the same service could take on different forms in each culture.

These characteristics of service can be represented by a "service concept" that combines every moment of service into a brand—a marketing strategy that defines the service's value.[18] People recognize service as a holistic system through such service concepts—for example, by understanding the overall form of the service structure, causality, and customs; thus, the form determines what people expect from service and how to participate in its co-production.

End Cause

End cause can be understood as a functional goal within the service, as well as a broader social purpose to be fulfilled. This duality resonates with other two-fold structures of service, such as core activity versus peripheral activities, or the technical quality of the outcome versus the functional quality of the process.[19] The main function of a service (e.g., car repair) is to solve the highest priority issue (e.g., replacing brake fluid), but human treatment and emotional experience are also critical to the perception of service quality.

In this respect, catharsis is another important end cause of a service. According to Aristotle, the goal of drama is to relieve emotions by imitating actions—in other words, catharsis. We argue that service catharsis is also twofold: Although it occurs when a core function is performed (e.g., having a meal at a restaurant), another cathartic touchpoint emerges when identity-related emotional needs are fulfilled (e.g., blowing out birthday candles at the restaurant). In such a case, the service environment serves as the stage that supports the performance of the guest of honor.

In addition to addressing the particular needs of customers within its boundary, a service often is offered in the context of a complex ecology. Service systems usually operate together interactively; the output of one service can directly influence another. From the customer's perspective, these services serve partial functions in the ecosystem in which the customer's life is at the center. Certain services are positioned within a broader service, and a collection of services can help fulfill goals outside the service boundary that are interrelated to communities in which the service organizations are operating. Therefore, when considering the end cause of a service, we cannot ignore social values.

18 Susan Meyer Goldstein et al., "The Service Concept: The Missing Link in Service Design Research?," *Journal of Operations Management* 20, no. 2 (2002): 121–34.

19 See, e.g., Sudheer Gupta and Mirjana Vajic, "The Contextual and Dialectical Nature of Experiences," *New Service Development: Creating Memorable Experiences* 15 (2000): 33–51; and Christian Grönroos, *Service Management and Marketing: Managing the Moments of Truth in Service Competition* (Lanham, MD: Lexington Books, 1990).
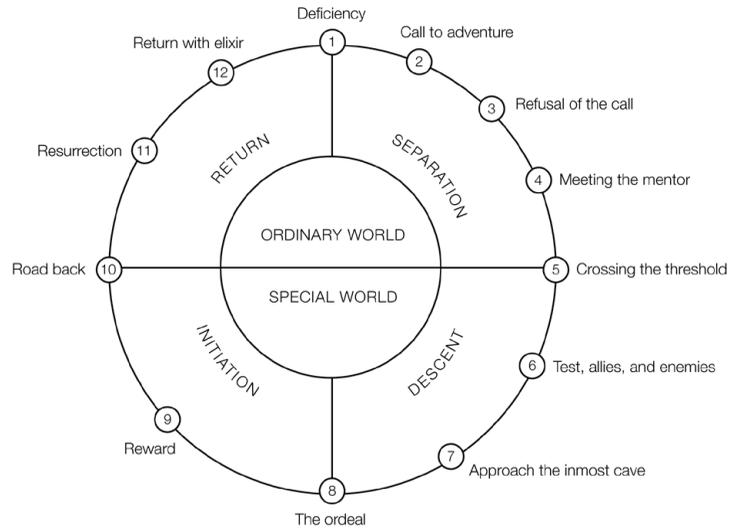
Synthesis: The Hero's Journey

In this section, we explore the synthesis model that integrates the four causes of service into a dynamic flow of experience over time. Scholars have developed storytelling models based on the Poetic framework, including Northrop Frye's critical method, Gustav Freitag's Pyramid, and Brenda Laurel's Flying Wedge.[20] In this article, we are using Joseph Campbell's Hero's Journey, which captures a pattern commonly observed in myths and is broadly applied to novels, films, and games.[21] The original Hero's Journey (see Figure 3) took the form of an adventure in which a hero sets out from a known world to grow up in an unknown world. It resonates with the journey of a service participant solving problems through a service experience.

The cyclical form of the Hero's Journey resembles "the experience cycle model," in that it portrays service as a process of attracting and orienting customers to return to the service for continued use.[22] The experience cycle model made a foundational contribution to the field by proposing a customer journey in a circular form. It posits that customers continue to return to a service—that which is distinguished from a typical linear model of product consumption. However, the model only examines customer experience within a service and portrays customers as passive beings to be attained and retained by the service. By contrast, our modified version of the Hero's Journey (see Figure 4) interprets service as a process that nurtures customers' active participation in service co-production based on how the service is related to their personal lives.

In the following section, we demonstrate how this process provides a structural base for synthesizing the key elements of services analyzed by the Poetic causes. Some causes can be

20   See, e.g., Northrop Frye, *Anatomy of Criticism: Four Essays* (Princeton, NJ: Princeton University Press, 1957); and Brenda Laurel, *Computers as Theatre* (Boston, MA: Addison-Wesley Publishing Company, 1991).

21   See Robert McKee, *Story: Style, Structure, Substance, and the Principles of Screenwriting* (New York: Harper Collins, 2010); Carsten Busch et al., "Digital Games and the Hero's Journey in Management Workshops and Tertiary Education," *Electronic Journal of e-Learning* 11, no. 1 (2013): 3–15; and Christopher Vogler, *The Writer's Journey: Mythic Structure for Writers*, 3rd ed. (Studio City, CA: Michael Wiese Productions, 2007).

22   Hugh Dubberly and Shelley Evenson, "The Experience Cycle," *Interactions* 15, no. 3 (2008): 11.

Figure 4
The synthesis model of service storytelling.
Created by authors.
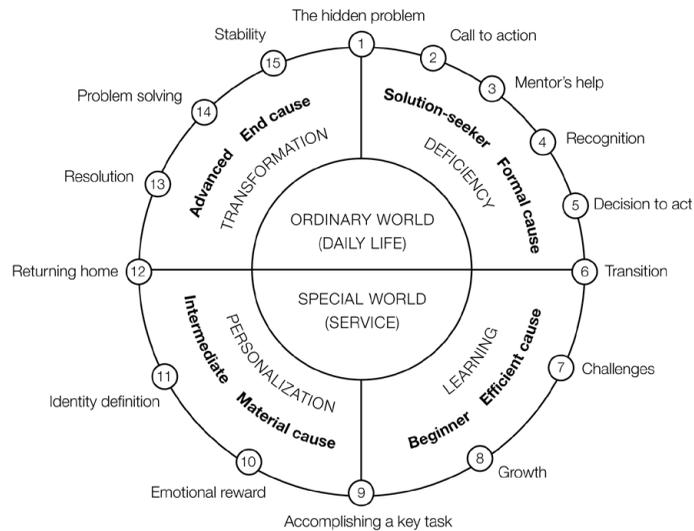
particularly well used at certain phases. However, the four causes fundamentally work simultaneously throughout the process. Another notable aspect of this model is that one service can contain multiple Hero's Journeys because of the need to encompass various stakeholders' perspectives; therefore, we call the hero of the service journey a "participant" rather than "customer." This participant can be a service worker, a delivery person, or even a bystander. All participants can have their own hero's journey in the service co-production.

Deficiency and the Formal Cause
Where does a service begin? Service providers might determine that a service begins when a customer enters the space where the service takes place; however, from a participant's perspective, service begins with the personal deficiencies, needs, or desires that people experience in their everyday life. Often, the biggest challenge is realizing that there is a deficiency. We propose that the beginning of service storytelling occurs when a communication is dispatched to make the participant aware of the problem and of a service that can support its resolution.

In this phase, the formal cause enables a service to play the role of mentor, helping participants realize their needs and overcome their anxiety around trying a new service. The service concept could evoke a vision of the changes the solution-seeker might achieve by participating in the service's problem-solving process, and it could help participants gain awareness of previously unnoticed problems. By providing a holistic picture of what the service experience is likely to be, such as the genre convention of the service, the formal cause can also give the participants a

sense of control as they break out of their daily routines and explore their participatory potential in the world of service. Therefore, when participants first encounter and appraise a service through a website or the physical entry to a service location, they should be able to roughly grasp and appreciate the formal cause so that they participate effectively.

The formal cause, although introduced at the beginning of a service, should be integrated throughout the service experience. Typically, service providers present the service concept in advertisements—a "promise" that is actualized when the participants begin interacting with the service. For example, a senior citizen who may not usually acknowledge the need to try a new fast food restaurant might see an advertisement that proposes an experience designed for a big family gathering. This encounter would mark the moment when they realize their desire to try the service, but only through the actual experience can they determine whether the promise of the advertisement is fulfilled. Therefore, formal cause should integrate various pieces of evidence through well-organized systems that align the service touchpoints with the holistic service concept.

Learning and the Efficient Cause
Now the participant enters the service, and they need to train themselves about the basics of the new system. In this learning phase, the efficient cause plays a key role. It instantiates the conventional roles of service representatives, the messages prepared by the service managers, and the communications embedded by the designers. Interfaces can help guide this process, but human intervention usually is more efficient for the initial phase of learning. The participant gradually adjusts to the service structure with the help of other participants, collaborating with them to complete various smaller challenges before moving to the main task. Through this process, the participant gains confidence and familiarity in resolving the problem that initially compelled them to seek out the service. It is important to reward customers for successfully finishing the first round of the task. This will inspire the customer to continue using the service in the next personalization phase.

In the Hero's Journey and other models of storytelling, characters tend to appear one by one, each with a task to support the hero's growth. If other co-participants appeared all at once, it would be difficult for the hero to digest information. Another similarly problematic situation would arise if the responsibility for manifesting the efficient cause was hoisted onto the hero without the proper assistance of other participants. In this case, the

hero would more likely feel overwhelmed, and the lack of struc-ture could inspire confusion and loss of control. A balanced arrangement of autonomy and assistance at critical touchpoints is essential for an effective learning curve for participants in the service co-production.

Supporting the participant as they gradually take a more active role in tasks at appropriate challenge levels help them to feel as though they are leading the service production, instead of just engaging in misplaced labor. For example, using a kiosk ordering system is often difficult for senior citizens; in such cases, staff members can help them gradually adjust to the service, ideally by providing a designed first-time experience. By processing several simple tasks, the participant can learn how to use the system and advance from beginner to intermediate. At the same time, the ser-vice worker can learn the preferences and skill levels of each par-ticipant, who are also the efficient cause, to personalize the service to better meet their individual needs.

Personalization and the Material Cause
After a novice participant becomes familiar with the service through human guidance, they graduate to become an interme-diate-level participant who can independently lead the service co-creation by using material interfaces. For example, participants can use signage systems, furniture, or digital interfaces to make choices and customize the service, instead of relying on other par-ticipants. In this personalization phase, participants become confi-dent using new functions and, in the process, assume a new identity as an advanced user of the service system. The presence of other agents, which includes service workers and other customers, is often minimized in this phase; instead, material interfaces and objects are arranged at touchpoints to maximize the hero's role in the service experience. The supporting characters in the service experience may be reduced from efficient to material causes to establish the agency of the participant.

Experience is more than just an arrangement of materials, however. The material components of a service should be seam-lessly fused into a flow to enable an advanced level of participa-tion, rather than remaining as individual stimuli. For instance, made-to-order service as a genre has a typical experiential struc-ture in which certain things are expected to happen; therefore, participants can use services in a similar manner anywhere in the world after they learn their flow. We propose that plot— the dynamic pattern of causality—serves as the key material cause for a participant's action. However, if the plot consists only

of repetition, no change catalyzes the experience's expanding structure. There must be a balance of continuation and pause, action and relaxation, to help the participant perceive the plot's pattern and become an active participant.

Another experiential structure worthy of attention from Aristotle's Poetics is the "peripeteia": the point in the middle of the plot—preceding the climax—in which things turn against one's expectations but reveal their hidden features. This dramatic feature differs from the modern concept of reversal (a surprise ending) by working as a transition point, a place where things diverge from the starting point. Plots that exceed the participant's expectation by offering a delightful surprise induce pleasure through discovery ("anagnorisis"), which often is identified as the key condition for an enjoyable experience. For example, once senior citizens learn how to order a customized drink by applying several personalization options, their increased sense of autonomy leads to delight and pride. This moment of discovery can be seen as the climax of the service plot.

Transformation and the End Cause
Where does a service end? From the service provider's perspective, services are often seen as having a sequential flow with a clearly defined endpoint (e.g., payment). However, from participants' perspective, the real moments of catharsis and evaluation might occur after they leave the scene and begin to reflect on the overall experience. The influence of service may continue to permeate the participants' daily lives, thus prompting them to realize the changes in themselves, as well as the new needs and desires that motivate them to reengage the service. Therefore, services must be designed with an understanding that the participant's return home can lead to the beginning of a new journey or of other participants' journeys via word-of-mouth or reviews.

This "transformation" phase is where the end cause becomes the most influential one. Transformation is the process by which the participant synthesizes the outcome of the service to their everyday life. In the classic Hero's Journey, a hero returns home with an elixir to forge a new connection with their family and to restore stability to their community. The magical solution could be an item, an ability gained, or a new identity that contributes to the hero's enhanced autonomy.

The true ending of the service storytelling occurs when the participant is equipped with the ability and confidence to encounter the fundamental problem that created the original deficiency. For example, the fundamental reason that senior citizens struggle to use an information kiosk is that their dwellings often

lack supportive systems where they can learn new technologies. Service assistants who can help them finish their transactions solve the problem only at the surface level. After experiencing a service designed to properly support their learning and autonomy, senior participants might feel confident to confront the fundamental issue of technological literacy, or at least might feel motivated to try similar services in the future.

Services offer practical outcomes, but they are not the only important end cause. Respectful support for the identity redefinition of participants during the service process also can influence their daily life. Therefore, experiential aspects, such as the care and respectful treatment, can also be important end causes in reinforcing a cyclical process. For example, if a senior citizen becomes an advanced-level user of a service and can place complicated orders using a mobile app, they bolster their self-image, especially if they are in the presence of their companions. They also are more likely to return to the service and introduce it to other senior citizens, even becoming a mentor in its use. The end cause of a service can reach beyond just one cycle of the journey.

Conclusion

This article draws on Aristotle's Poetics to study an "art of making" that centers the human experience as a framework for understanding the requisite elements and structures of a service. We analyzed the four causes of a service and the dynamic structure of storytelling using Campbell's Hero's Journey, which synthesizes these elements into an integrated process of nurturing participation in service co-production.

Humans developed storytelling to convey meanings through archetypical patterns of fundamental life events. Ancient storytelling, represented by the Poetics, was a service that unified communities through the collective experience of a dramatic ritual. Through theatrical drama, audiences became aware of the patterns of community life and created new shared meaning through participation. Today, service similarly fulfills the ritualistic role of supporting individuals' daily lives and providing them opportunities to participate in collective action. Service storytelling ties these two aspects together, contributing to design by proposing a framework that views making as a collective and ongoing human collaboration.

The making of services is a continuous process in which multiple causes and agents are involved. The unique aspect of service storytelling is that customers are not just a passive audience but active participants. Design has often been seen as a static and predetermined plan, like a fixed plot, for a separated production.

Although the overall structure of a service can be informed and orchestrated by designers, co-production as the essential nature of service calls for further exploration of design as participatory storytelling co-created by the community of use.

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