The Human Facet of a Service System

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Let us assume, in this section, that our hypothesis about the 1st implication is true, that is, because a service system contains people or organizations inside it, it is perceived by its users as having human characteristics, treated to some degree as human beings, and expected to exhibit some human-like behavior and responses. One of the key research questions posed immediately by this hypothesis is how much human-like must be the service system perceived, or, in other words, how much human must be the human facet of the service system? As framed by our hypothesis, there are at least three dimensions of this question:

- Which human characteristics are more often perceived by the users in service systems?
- When and how do users treat — and would like to treat — service systems as human beings?
- Which human-like behaviors and responses a service system is expected to exhibit?

Another related question is to what extent the human side of an automatic service system has to be constructed to be perceived as an "artificial" human being, that is, do we need to personify the human facet?

To clearly address those issues, we introduce here the concept of the human facet of a service system:

> The *human facet* of a service system is the set and configuration of elements that create and control the perception of and the interaction with its human characteristics.

The human facet of a service system often needs to combine elements on its face, contact face, uses, and internal processes to effectively control perception and interaction with its users. It requires design, engineering, and adequate management. In the case of contact services, it also involves training front stage personnel properly and often empowering them. Quite often, the human facet of a service system is loosely dispersed along different segments of the system, such as front stage, branding, marketing, sales, customer relationship management, recovery services, and even the back-end system, with very flimsy connections among them. The result in such cases is a service system with what resembles a multiple-personality disorder, engendering little trust and fostering user anxiety.

Notice that the concept of human facet is related to issues such as customer-centricity and the value of customer experiences, but it focus on the anthropomorphization issues unique to service systems. The human facet has to include the interface mechanism and the internal processes that allow an effective relationship with the user, which, we claim, are always framed around the assumption that there are humans inside the system. Among others, the human facet of a service system has to address the following issues:

How does the user < > the service system?	**How does the service system < > the user?**
communicate with	greet, show respect to
understand	teach
read the intentions of	motivate "positive" behavior in

reward good behavior from	apologize to
inflict pain or punishes	reward or punish
complain about	entertain
change behavior of	gain trust from
negotiate with	change behavior of
communicate emotions to	createsloyalty in
break up with	negotiate with
con	get loved/desired by
avoid being con	avoid being con by
ask for favors	con
have a good time with	show compassion with
deal with unexpected events from	deal with unexpected events from

We are assuming here that creating and managing adequately the human facet of services system is important because users tend to perceive service systems as having human characteristics behaviors. In fact, there is a lot of related evidence, such as the value of having friendly front stage practices to service quality and loyalty, the importance of understanding the total user experience, etc. Understanding the impact of efficiency and quality human facets on service systems, and on user and customer behavior, is clearly an open question and, in our view, an important research topic.

Finally, it is interesting how some branding techniques used for some products also rely on the anthropomorphization of the relationship with the product. A classical case in the popular mind is *Purdue Farms* which heavily tried to associate its products with its owner, Frank Purdue, through a series of whimsical commercials starting on the 70s, and to an image of integrity, responsibility, and commitment. The endorsement by celebrities, taken to an art form by *Nike* with Michael Jordan, is another known technique. However, we are not arguing here that such techniques should be used in service systems (and they have been), but instead that there is an intrinsic need to engineer and manage the human-like behavior expected in service systems from its users. Simply calling it “family-owned” or posting the firm’s commitment preeminently on the main page of the firm’s website just not does it.

Modeling the Human Facet of a Service System

There are clearly no easy answers to how to model the human facet of a service system and it is likely that the answers depend to some extent on the kind of service, the level of customization, and even the culture in which the services are provided. But we contend that exploring basic, even sketchy answers to this problem are of fundamental importance to the development of service sciences, determining architectures and methodologies for the ideation, design, engineering, and management of service systems.

We believe that a good way to approach the modeling of the human facet problem is to start with a list as comprehensive as possible of characteristics and behaviors, study them, see how they apply and relate to service systems, and slowly build a theory of the perceptions and expectations of the human facet of a service system. To seed this process, we discuss in the remaining of this section different approaches to define and describe human beings and their behaviors, as proposed in a large range of disciplines.

We see two basic types of such models for human beings: *psychological models* which try to abstract a simplified view of a complex human being, mostly originated in human sciences such as psychology, sociology, and anthropology; and *dramatic models* which provide methods to the creation of complex, non-existent human beings in arts such as literature, theater, movies, and even in some cases in visual arts. Carl Jung is one of the key names behind the theory of psychological models[], and Konstantin Stanislavsky can be said to play a similar role for dramatic models, especially in performance arts[].

Although we focus most of discussion about models for human beings on how to model the human facet of the service system, it is important to notice that the theories and methods described here also can be applied, in most cases, to problems related to *modeling user intensity* (input and labor) in interactive service systems. Understanding these systems, for the purposes of design, engineering, and management, are believed to require better models of how the presence of the user in the input or as labor of the production process, as discussed in Pinhanez08[].

Psychological Models

There are a vast number of proposed psychological models of human beings, well beyond what could be enumerated here. To introduce some of the key ideas behind those models, so a link with its relevance to service systems can be made, we briefly discuss here three sources of models: personality theory, social psychology, and emotional communication theory.

Personality theory is a general name used to attempts to assign archetypal categories of personality to human beings, normally aiming to help predict the effects of having each archetype in a given context or how each archetype is likely to interact with the other archetypes. There are basic two streams of personality archetypes. The first stream is based on the *Lexical Hypothesis* of Sir Francis Galton, which proposes that personality traits are eventually reflected into the language used by people. Based on this hypothesis, researchers through the 20th century refined through statistical means the most often used clusters of adjectives used to describe people. The result, as proposed by Tupes and Christal[], and Norman[], is the use of five broad dimensions to describe personality traits, commonly known as *Big Five* or *OCEAN*, for their initials: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticity (or Need for Stability). *Openness* is a dimension that describes how much the person is attracted to new experiences. *Conscientiousness* describes how much the individual is able to control his or her impulses and emotions. *Extraversion* relates to how much the person is able to communicate and engage with others. *Agreeableness* describes the ability to befriend and cooperate with other people, and to be concerned with their well-being. *Neuroticity* refers to the level and need of emotional stability.

The second stream of personality archetypes has its origins in Jung's *Pyschological Types* of 1923, which influenced the work of Katherine Briggs and her daughter, Isabel Briggs Myers, who eventually create the *Myers-Briggs Type Indicator* test (MBTI) which classifies individuals along 4 dichotomic preferences: *Extraversion vs. Intraversion (E-I),* an indicator of the preferred mode to acquire energy and motivation; *Sensing vs. iNtuition (S-N),* determining the preferred mode to obtain information; *Thinking and Feeling (T-F),* referring to the decision-making mechanism of choice; and *Judging vs. Perceiving (J-P),* which indicates the preferred mode to relate to the world, using T-F or S-N channels, respectively. The four preferences define the 16 *MBTI types*: ESTJ, ESTP, ESFJ, and so on. The MBTI is extensively used in the industry as part of recruitment processes and in group dynamics.

More popular personality classification methods are what we call horoscope signs, of which the most known are probably based on the Sun sign astrology and on the Chinese zodiac. If we distanced ourselves of predictive astrology and from the simple methods to determine an individual sign based on birth, we find an interesting compendium of 12 basic human archetypes, in both systems, which many people very easily can use as a personality classification tool.

The relevance of personality theory to service systems is still to be determined, but we can speculate that methods from this field can be used to make concrete and communicable to the different members of the service system, the personality traits to be present in the human facet of a service system. The over-simplification of the archetype models in personality theory can be an asset on making design, engineering, and management goals concise and straightforward. For instance, it could be set as a goal that *"The service of this hospital should be a Virgo"*, meaning that it should be perceived as nurturing, patient, pragmatic, loving, methodical, dedicated, and flexible — personality traits often associated with Virgo according to Sun sign astrology.

Social psychology is another discipline relevant to the psychological modeling of human beings. It focuses on how social context affect human beings and how people perceive and relate to each other. It is particularly relevant to the modeling of human facets of service systems because it provides a theoretical framework to examine the interaction between the user and the service system. There are two basic currents in social psychology, coming from psychology and sociology traditions. For lack of space, let us only examine basic tenants of social psychology according to the psychological stream, often associated to Kurt Lewin's work[].

Social psychologists often divide the social phenomena into two spheres: intrapersonal and interpersonal. *Intrapersonal* phenomena of interest include the study of attitudes, or basic likes and dislikes; persuasion; social cognition, or how people collect, process, and remember information about others; self-concept, or how people perceive themselves; and cognitive dissonance, the feeling that someone's behavior and self-concept are inconsistent. Among *interpersonal* phenomena often studied, we can list: social influence, or how conformity, compliance, and obedience manifest themselves; group dynamics, including how group identity is created, and how group norms, roles, relations are created and evolve; interpersonal relations such as pro-social and anti-social behavior, aggression, altruism, and empathy; interpersonal attraction, including proximity, familiarity, similarity, physical attractiveness, and social exchange; and interpersonal perception, which includes issues related to the accuracy, self-other agreement, similarity, projection, assumed similarity, reciprocity, etc.

As we see, social psychology can provide models to understand how users perceive and build relationships with service systems, as well as mechanisms that construct and externalize the identity of a service system from within. Under the basic assumption that people perceive service systems as quasi human beings, understanding the most common mechanisms of social relationship is fundamental as a departure point. We are not proposing that all the concepts and models of social psychology apply to the relationship between users and service systems, but instead that it is likely that many of them do; and that it is also fundamental to understand how human-to-human social-psychological structures differ from human-to-service system ones. Moreover, the knowledge created by social psychologists provides good models and methods for understanding issues related to user intensity in interactive service systems. For instance, theoretical work on social influence can help model how to make users (as co-producers) conform and comply to working behaviors expected by the service system, as well as the ideas developed in interpersonal relations studies may help the management of anti-social behavior and aggression when the user is part of the input in interactive service systems.

Emotional communication theory aims to understand how emotions are used in the context of interpersonal communication. Although research on emotions goes back to Darwin in the 19th century, the field experienced an extraordinary growth in the 90s, with a large number of studies about how emotions are categorized, expressed, and perceived (see handbook[]). Several categorizations of emotion types

have been proposed (chapter 1, handbook[]0, and one of the most known is Ekman's (Ekman 72), which proposes happiness, sadness, fear, surprise, anger, and disgust as the basic emotions. Russel's *circumplex* model (Russell 78[]) proposes a continuum representation of emotions according to two dimensions: level of activity (passive vs. active) and valence (negative vs. positive). For example, fear has high activity and some negativity, while frustration has high negativity and a moderate level of activity.

Although studying the physiological and subjective aspects of emotion is important, the more recent research focus on how people communicate their emotions and respond to the emotional display of others during social interaction is of key interested for modeling the human facet of service system, and particularly in interactive service systems. For example, Anderson and Guerrero (chapter 3) identify six general principles of emotional communication: *"Emotions evolved as communicate actions, emotional expression is shaped through socialization processes, the primary elicitor of most emotion is interpersonal communication, schemata [including goals, needs, desires, and expectations] affect how and when emotions are communicated, an inherent feature of emotional experience is emotional expression, and emotion generates other emotions and interaction chains."* pp89, chapter 3. For instance, the socialization process teaches most of us how to fit internal emotions to the social context, using processes such as simulation, inhibition, intensification, de-intensification, and masking (see chapter3). It can be argued that for a service system to successfully manage its interaction with the user, it has to be able to equally to adapt to the interaction context the display of its internal states that are likely to be perceived as emotions according to similar rules and methods. There is also considerable research on the communication, perception, and social norms of emotions such as fear, anger, and anxiety (emotions often expressed by users of service systems) and such as shame and embarrassment, which probably should be displayed by service systems during failures or recovery.

The amount of scientific knowledge accumulated through decades of research in personality theory, social psychology, and emotional communication theory is considerable, and mostly unknown to service practitioners, with the exception, to some extent, of marketing and HR training folks. We believe that there is a real opportunity opened by the framework proposed in this paper of using those concepts and methods in the architecture and processes of the service system, aiming to create systems which handle well, in communications and actions, the expectation of human-like behavior of the service system. As discussed later, we believe that such an approach is not only critical in the case of static and automatic services, which often lack such mechanisms, but also on performance and interactive where the communication, display, and management of emotions is left to the front-stage personnel, often with no integration to the internal processes. Of help is also some recent work in computer science regarding machine recognition and expression of emotions (Tosa, Picard, Breazel).

Dramatic Models

While psychological models of human beings try to abstract principles and methods from real-world human beings and their social and emotional interactions, dramatic models involve techniques to create complex displays of human behavior that do not correspond to a real or existent person. We believe this set of concepts and techniques to be particularly relevant for the ideation and design of service systems, but they also bring insights into areas such as service quality, service management, and human resources training.

A good example of a dramatic model is *character theory,* a sub-discipline of literary and narrative studies. The fundamentals of character theory were laid down by Vladimir Propp, a Russian structuralist who collected and studied about 100 folktales and proposed that there is a typology of narrative themes in folktales, based on common subsequences of 31 basic steps Propp[]. More important for our analysis, he identifies also 8 basic roles played by what he calls *dramatis personae,* or the characters involved in the plot: *hero*, *villain*, *donor* (who prepares the hero for his journey), *helper*, *princess*, *princess' father*, *dispatcher* (who sends the hero off), and the *false hero/anti-hero/usurper*.

Propp claims that all folktales have similar characters and narrative structure, given and take some characters and plot steps, but invariably following the structure. Similar claims can be found in the work of Joseph Campbell on mythology and mythical heroes Campbell[], which identifies similar structures across mythologies around the world. Campbell's work influenced many contemporary directors and filmmakers, and is credited by George Lucas as having a decisive influence in the screenplay of *Star Wars*. A more formulaic presentation of Campbell's work is Christopher Vogler's *The Writer's Journey: Mythic Structure For Writers* Vogler[], extensively used for character and narrative development in the entertainment industry. There are also software systems in the market that embody some of those concepts, helping the writer to keep track of character structure, development, and relationship with other characters throughout a story, such as *StoryWeaver*, *Dramatica Pro* and *CharacterPro*.

The basic contribution that character theory brings to the issue of modeling the human facet of service systems is a typology of traditional roles that, we can argue, people are likely to recognize in the service systems behavior. The interaction of a user and a service system is likely to be construed cognitively and emotionally as a narrative where the user is the hero and the service system may take the roles of donor, helper, or princess' father (the gatekeeper to the user's goals), although, in many times, it may end up being the villain. This is easy to recognize when people tell about a bad experience with customer support: the description of the experience is often reported as hero's journey against an evil, arrogant, and stupid service.

Character theory has some of the concepts necessary to understand not only how to construct the human facet of the service system as a whole but also to define the different roles of the contact elements of the service system in the "fairy tale" encounter with the user. It also provides service designers and engineers with a structure for human interaction with the service system based on powerful, ubiquitous, almost universal, deeply engrained psychological structures built on people from their childhood. Understanding that the relationship with the service system, in many situations, is likely to be conceived on the context of mythical journeys can aid considerably in managing better the experience.

Another important source of methodology for the modeling of the human facet of service systems are the many techniques used for *character embodiment*, such as the *Stanislavski's system*, *method acting*, and *illusion of life*. This set of concepts, ideas, and techniques addresses mostly how to make the human facet look real, inspire trust, and play effectively its role and personality.

Konstantin Stanislavski is often credited as the pioneer of modern acting techniques in theater. Departing from the tradition of reliance on facial expressions, excessive gesturing, and voice manipulation, Stanislavski focused on physical action: *"Acting is doing."* The best embodiments of characters do not pretend to be the characters: they act, move, and speak as the character (see Stanislavski[] and Thomas Richards[]). This is a fundamental idea often poorly understood by the designers, engineers, and managers of service systems. As an example, the carefully scripted apologies used in contact centers during service recovery encounters most often feel artificial and ineffective towards their goals because they are devoid of action: sorry has to be expressed with acts, not merely with (fake) displays of emotion. If a service system wants to be seen as helpful, it has to sincerely try to help the users. People are very good in recognizing fake acting, a fact that most contact service managers seem to ignore.

Stanislavski's system works in a holistic way, fusing cultural, physical action, and psychological work to create and embody characters, in a very complex and time-consuming process. *Method acting*, developed by Lee Strasberg's in the famous *Actor's Studio* based on Stanislavski's system, focus mostly on psychological means to create performances where emotion is perceived as true. This is most commonly used technique in American theater and movies to embody a character. Among other things, it involves training the actor to use her own life experiences, or *emotional memory*, to trigger emotional displays such as crying, laughing, etc; and substitution, where an actor mentally substitutes concepts and actions which are foreign to her with equivalents that are very familiar. Method acting provides a wealth of

knowledge and methodology especially for contact and performance service systems, where human beings have to perform the part of being the human facet of the service system.

Difficult, not easy. See Uta Hagen's book for a great introduction.

For service systems without a human being in their contact faces, the applicability of Stanislavski's and other acting methods is more challenging. An alternative body of knowledge can be used, borrowing from concepts and techniques from *puppetry*. How to create the *illusion of life* and humanness onto inanimate objects is the core issue of puppetry and animation [Disney], very similar to the problem of creating a human facet for an automatic service system such as a web-based service or a catalog. Puppetry deals almost always with the physical limitations of the puppet, with its inability to speak, to move, to have facial expressions, to have complex gestures; and nonetheless, the puppet comes alive, caring, loving, hating, and interacting with other puppets and the public. Automatic service systems have also similar constraints and as more and more services move from the contact to the automatic quadrant (for efficiency, usually) more relevant becomes the issue to create a human facet using inanimate objects and animation. One of the contributions of puppetry to the modeling of the human facet of automatic service systems may be an advanced understanding of what emotions can be expressed and what actions can be performed in the context of limited movement and expression. Hand puppets convey most of their character through talking and limited facial expression; marionettes use mostly gestures; shadow puppetry deals with flat, black and white worlds. And yet, puppetry shows that it is surprisingly easy to make someone believe that there is an intelligent, emotional human being inside the puppet.

In many ways, one way to understand our concept of human facet is to see the service system as a giant puppet, where some parts of the body are people (contact employees) and some are inanimate objects, all of them manipulated by multiple puppeteers with the support of stage hands (back-stage employees), and where the user perceives the giant puppet as a whole, animistic figure, even when dealing with the people-as-body-part. We like this *giant puppet metaphor* for service systems because it captures the need to unify and integrate all the elements of the service system into a single human facet; it shows the difficulties in making such big puppets (and service systems) emotional and responsive; and it gives a clear human dimension of the awe service systems may inspire.

Similarly, there are lessons to be learned from movie and TV animation, although in this area the focus has been traditionally in how to make animated drawings convey emotions and humor. Also, many of the most common techniques involve detailed observation of human beings or animals [Disney's illusion of life] and modifying natural motion to make it more expressive. Some of these ideas have been also explored in the context of *animatronics* [Heiligman], and particularly by Disney Imagineering's audio-animatronics, where computer-controlled mechanical puppets are designed to create real-life renditions of characters. More recently, there has also been considerable advances in emotional robotics [Breazel, Tosa], which examines how emotional response can be inserted in the context of a robotic interaction. In both cases, the basic lesson is that it does not take much for an animation or robot to be perceived as "human", although it is also easy to destroy the effect.

Some of the relationships between service systems and dramatic models have been explored before, albeit partially, in the business [Pines/Gilmore] and computer [Laurel] literatures. Pines and Gilmore discuss the use of method acting in experiential services [Pines/Gilmore], but neglect to acknowledge the difficulty in selecting and training people to do so. Similarly, Laurel's proposal of using theater as a model for computer interaction [Laurel] is somewhat inadequate because of the reliance on an outdated Aristotelian framework for performance.

To finalize this discussion of dramatic models it is important to point out that many of the discussed techniques for character creation and enactment aim to *maximize conflict*, which is a major engine of dramatic success. However, in the context of service systems, we may find often that the desirable human

facet is the one precisely with the opposite property, that is, a human facet that minimizes conflict with the user and with the customer. In that sense, it may be necessary to study, analyze, and repurpose the proposed dramatics models to arrive at models that are appropriate for the design and engineering of service systems.