

MODES OF TRANSITIONS

Developing Interactive Products for Harmony and Wellbeing

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Abstract

People experience transitions throughout their everyday and lifelong encounters, whether it is in the roles they enact or environments they interact with. In transitions, people encounter the paradox of adapting to the changing and the new, while sustaining the unchanging and old situations. Dealing with this paradox, a person faces three possible paths: continuity, progression, or decline in their wellbeing. People oftentimes fall into the decline path, as revealed through chronic stress, emotional turmoil, and loss of order. Not all transitions may be resolved without stress or turmoil – and in some transitions, say, the death of a loved one, being fired from a job – stress and turmoil may be somehow necessary for the person to deal with the changes. But out of any transition situation, the ideal is that a person can emerge with a sense of well-being, and do not experience a lasting decline.

Products play an important role in these transitions, and their outcomes. Think of a teddy bear for a toddler, a mobile phone for a metro-commuter, and a red convertible for a man in mid-life crisis. Products provide a tangible grip for people to hold on to as their situations and environments change around them. Products can increase people's agency, and if they are interactive products, they can build character into the situation, carrying the agency even further. Interactive products hold strong potential for people in transition, with their capability to respond to transitional situations by guiding the user, interacting with her, and engaging her in participation – leading towards greater user awareness and agency, in turn leading towards well-being. This inquiry takes off with this premise, that interactive design for transitions can provide the user with a dynamic agency defined in the situation.

I follow a practice-based design research, by framing the problem space with theory; exploring it with design of concept products; and reflecting on the interaction between theory and practice for emergent qualities. Based on three research projects on people's transitions, a practical design framework emerged, providing the tools for designers to understand, develop, and assess interactive products for transitions. Modes of Transitions (MOT) help designers to grasp transitions holistically – with lens to assess what is changing or unchanging in the transition situation, and then modes – routines, performance, narrative and ritual – as frames with which to generate scenarios, examine current and possible resolutions, and assess the outcome of the design. Modes give paths for the designer, user, and product to form agencies in the situation. It does this by scenari-based design, since it gives the designer to analyze, project, and design possible futures out of the turmoil of changing unknown situations.

The inquiry makes the following contributions: MOT offers a values-driven approach to behavioral and social change issues, whether it be in a lifestage or lifestyle transition. MOT gives a strategic tool for designers to form human-centered and scenario-based design methods, to better reach at creative leaps and innovation. Finally, MOT provides a useful tool to grasp the immaterial materiality and social interaction models while designing new genres of products, providing ways to iterate upon and assess the design. Though there have been successful transition products before – like the teddy bear or the sports car – the field of 'Design for Transitions' has immense potential that is yet untapped. This thesis presents a thoughtful and useful framework with which future designers can approach transitional situations, to work with users to produce designs that will inspire, empower, and accompany a user through a transition – hopefully into a new state of well-being.

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Preface for Practitioner Designers

The worlds people live in are complex, as they are interwoven with people's personal and work, as well as family and social lives. In contemporary life this complexity is taken to a whole new level of entanglements with the advances in communication products. These advances lead people into situations where they have to switch life channels, such as from being a mom to a professor, or police officer to husband, without fully engaging in the moment that they are in. The potential for design lies in mediating the individual's relationships among these different life channels, so they can transition between them with greater agency and well-being.

Modes of Transitions

Modes of Transitions(MOT) is a design framework rooted in the traditions of design. It was born out of the interplay between design activity and theoretical investigation. The framework encompasses a rich set of issues ranging from behavioral change, e.g., quitting smoke, to social change, e.g., ridesharing. In contrast to behavioral change, or, so to speak, positive and negative reinforcement approaches, MOT takes a different track to transition design. MOT relies on an individual's character, a resource that consists of the user's intellectual and moral virtues. As a framework, it gives the designer sensitizing lenses that result in ways of understanding and ways of acting upon a transition situation, that give resources to the user to draw upon her character to transition smoothly, and resolve the conflicts between changing and unchanging dimensions.

By revealing ways in which an individual can construct functional and experiential goals using interactive products, MOT is a contribution to the theories and practice of interaction design, along multiple-dimensions. It presents an alternative to Behavioral, or Social Change approaches. Additionally, the MOT framework puts the priority on Design Driven Research

rather than Human Centered Design. It provides strategies to support **designer's judgment** in any given situation to reach at **creative leaps** for innovation and change. Human-centered design functions as secondary tools to apply these strategies suggested by the framework. Finally, MOT presents design that is 'values sensitive' rather than 'goal driven'. As the challenges of transitions suggest, goals usually do not necessarily exist in a transitional situation; or rather exist as confusion. This confusion has to be facilitated and resolved with a lens of values, and their embodiments in a designed world.

Understanding & Finding Actionable Insights

One of the main challenges in today's design practice is not gathering data, but rather making sense of data. To analyze and synthesize data requires a lens that simplifies the complexity into actionable insights and themes.

Transition Heuristics

MOT allows the designer to understand the transitional situations via the framework's heuristics. Transition heuristics is a tool to identify the conflict in the transition situation with a focus upon determining the **changing and unchanging dimensions of body, role, interactions, habits, and environments**. By mapping these dynamics, the designer can identify where the transition is felt, and see the transition not just as the most apparent changing dynamic – but also underlying transitions in the situation. The framework recognizes that the experience is multi-layered, often with a cascade of transitions and not just a single one. In addition to finding the changing and unchanging dynamics, the transition heuristics provide the designer with tools to discover **four types of transitions, namely, spatial, social role, life stage, and migratory** transitions. This first lens for transition design gives the hinges for the designer to map out the data and look for emergent themes.

Action and Values Themes

The second lens to understanding transitions is the lens of four plots, **routine, ritual, performance, and narrative**. These four plots function as guidance to the human centered design methods, such as interviews and surveys. Action themes give material for the functional goals of the product proposals. Action themes are usually related to the routine plot, where the goal is providing a mechanical functioning of an experience. At their essence, action themes give resources and direction on how the user can build new routine actions and experiences. Values themes give material for the experiential goals of products. Values themes are more related to rituals and narrative plots. They point the designer towards priorities, narratives and beliefs that the user values, and which the designer can provide resources for building into the experience. So the next question would be how to discover the action and values themes. Some of the strongest tools are routine and ritual mappings, social role enactments, and transition stories. Each tool can be applied together or separately.

To look for emergent themes out of the human centered design methods, there are several tools that can be applied during understanding phase.

Routine & Ritual Maps

To understand the dynamics of changing and unchanging dimensions, and to identify the themes that matter to people both in functional and experiential level,s the designer can use several research devices. One powerful method is mapping people's routines and rituals through participatory activities with participants. Life Mapping activity is an exemplar of this activity. the designer prepares a setting, such as a white board or wide size white paper. She then asks prompt questions to the participant to map the general as well as the particulars of a situation. The participant uses very basic tools, such as post-its and markers, to report on the transitional situation. Questions for the session should be crafted according to the specifics of the transitional

situation. However, the modes of routine, performance, and ritual should guide and shape the nature of the questions. An example is given in the table below. These mappings show the action-themes, issues that cause breakdowns in people's routines, or issues that threaten people's stability and continuity. An example for an action theme would be the convenience in a ridesharing, or waking up in the right time in a morning routine.

Transition Stories

One other tool to discover emergent themes to compose a design proposal is transition stories. The designer should look for the conflicting social roles in the transitional situation. Having picked the roles, she should craft her transition story prompts in the two axes of **stress** and **arousal**-stimulation. Stories in this way give the **emotional hook** for the themes, whether it be related to stress or arousal. Think of the 'fear' emotion that could cause an individual to lose her sense of self, or 'anger' for not being respected in the particular role. The questions typically probe into the best and worst memorable events from the past experiences; as well as aspirations and worst-case scenarios from the future projections. This gives the designer at least three things: values that come from past, values that are present, values that are not formed yet. Designer can then use them as the values themes that need to be investigated during the scenarios. At this point, the designer is not married to any of the values, but has a wide selection to choose from to focus upon in the design process. Examples can be 'me-time' during daily commutes, or 'parental moments' for the night time routines.

Action & Designing Resources for Change

Having identified the themes, the designer works on scenarios investigating these themes. Scenarios are crafted with the modes in mind. Contrary to the persona approach where the designer develops the personas before developing the scenarios and concepts, here the designer

begins with the plots themselves. Plots are advancing the themes that are learned in the understanding phase. In a way, rather than fixing the individual with goals, MOT offers an alternative way to peoples everchanging contexts and search for goals. Note that, in a transitional situation, values or goals are usually not formed yet. This is the core reason why people get lost, they lose their life-narrative and their goals during the transitions. Each plot, namely routine, ritual and performance, probes into the action and values themes, or, so to speak, the overarching narratives-goals of the individual who is in the midst of a transition. This also gives the designer the mechanism of how the person is switching in between these different modes, or life channels. In a way, character is developed through these plots, manifesting the actions, emotions, and values themes.

Character-development for Scenario Based Design

In developing product concepts with scenarios, the designer can work on cascading plots, exploring the emergent action, emotions and values themes to resolve the conflict in the transitional situation.

In forming the plots, the designer needs to consider several principles. Each plot needs to follow the dramatic structure of **beginning**, **middle**, and **end**. Each scenario explores a particular plot, for instance routine, should consist of four unfolding scenes of **setting the transitional situation**, **the conflict**, **the proposal**, and the **outcome of the proposal**. In developing plot variations, the designer should explore extreme situations as well as banal situations. This allows the designer to map out a spectrum of possibilities for handling the transitional situations. When the designer presents this range of scenarios to the users, and sees how they would follow the plots or deviate from them, key insights emerge, which can be used to develop the design, or iterate upon it.

Transition Routines

In a transition situation, routines are the most vulnerable plots. Think of a new college student who just moved to a new country for university study. Her challenges are many; but, it all begins with not having routines, and ordering activities. To develop routine plots, the designer needs to translate action themes into design concepts. In a transitional situation, one particular challenge is the threat of changes to the unchanging activities of an individual. These unchanging activities consist of **time**, **people**, **places**, and **coordination** of these activities. To address this challenge, the designer needs to forge the theme of **flexibility** in her scenarios and design proposals to help the individual to probe new routines, and new unchanging activities.

Role Performances & Strategic Interaction

Think of our new college student again. She has just moved out of high-school with little cue of college life. She is in her new role as a college student, responsible for her own life. She heavily relies on the conventions of her new role and the connotations that come with this new role. Research shows that once people gain a new role, they consume significant amount of money on products as props and for their role enactments. In a transitional situation, the designer should be aware of the potential of products as **props** and **scripts** for a particular **role enactment**. However, the designer also should be aware that the individual needs **to improvise** her new role without relying on an unchanging prop or script due to the changing and unknown situations.

To consider both the changing and unchanging roles, the designer should be aware of how people switch between different roles in a transitional situation, what cues and keys they use to do so. In the Life Modes project, one of the findings about role performances was that people use **time**, **people**, **location**, **schedules**, and their **own outfits as cues** for role switches. The

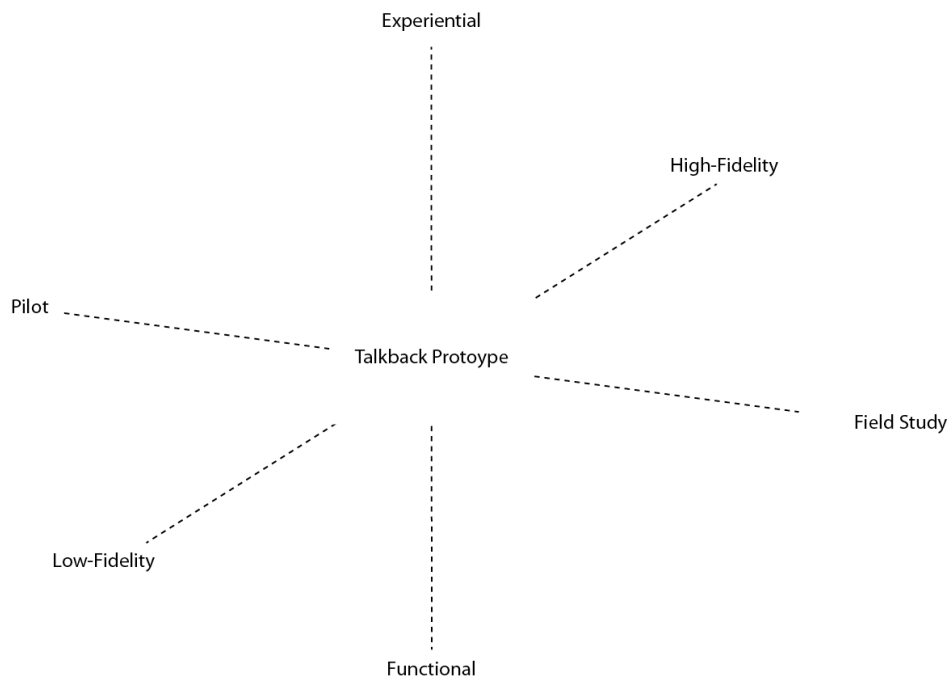
designer, while probing into new roles through products, can think of these cues and explore them in scenarios.

There is also the prioritization of roles and performances. An insight from MOT is that people wear many hats at the same time and focusing on one specific role is not enough to probe the performance plot. This brings us to the notion of **strategic interaction**, coined by Erving Goffman. In a transitional situation, the designer might work on design proposals for multiple role performances in which some of them function more like the guiding or leading roles, some others function more as complimentary roles.

Ritual Moments

Rituals are consciously performed routines where the individual invests emotions and meanings in a particular transition situation. In the framework, rituals are the plots for emotional and values themes. Each ritual, whether it be an intimate personal ritual or a social one, consists of **focused interactions** and **ritual moments**. The designer needs to probe ritual plots, considering these two dimensions and what do with these ritual moments, and focusing on interactions that could embody emotions and values. Think of the personal ritual of a commuter, whether it be listening to a selection of songs on a stereo, or saying prayers with prayer beads. Each ritual in a way embodies certain values. The designer can design props or frames for these ritual moments. In MOT, such ritual moments were designed during the clock project around the bedtime rituals, in the form of a music box for children and parents to engage in.

Assessments & Talkback Prototypes



Having developed design proposals, the designer needs to actualize these proposals with **talkback prototypes**. Talkback prototypes can range from **low-fidelity** to **high-fidelity** as means of their **form and function**, and can investigate the **goals** of the transitional situation in the spectrum of **functional** to **experiential** (See the map above). Based on this range, the designer can choose to run pilot or field studies for the prototype. In assessing the talkback prototype, the designer can use **diaries** and **logs** to assess the routine plot; **transition stories** from interviews to assess the ritual and performance plots; and **surveys** to assess rituals and performance plots. Note that surveys and interview questions need to consider the placebo effect, how the product is perceived and actually used in the situation. To overcome this effect, the designer needs to craft questions sensitively and perhaps ask indirect questions about the influence of the product on role performances and rituals.

To sum up, MOT gives the designer sensitizing lenses and directions to design for the transitional situation. First, it points the designer towards mapping the changing and unchanging

dynamics at work in the user's transition situation, and to identify what type of primary transition is occurring and what underlying transitions are cascading from it. Along with the changing-unchanging mapping, it also equips the designer with the lens to identify action and value themes in the situation. These themes give the designer material to work towards the functional goals the end-product might implement, as well as the values and narratives the designer should be giving the user resources to achieve. In doing the research and building scenarios and designs, MOT suggests four potential plots – routine, ritual, performance and narrative. These bring with them several tools that can be used as ways of understanding, as well as clear directions for crafting ways of action. Finally, MOT leads the designer through the prototyping and feedback stages, with tools for assessment and a priority on talkback and character. Through the combination of these many tools, MOT offers a comprehensive approach to transition design.

Introduction

“Nothing is secure but life, transition, the energizing spirit”. –Emerson

This inquiry began with several of my curiosities. A curiosity about interactive products - and how people develop relationships via their mediation -- led me toward a big life decision, to move to the United States. With the freshness of a culture shock, another curiosity emerged: how can people in this world that is ever changing attach themselves to products and environments, so that they can create a sense of place? And along the way to a sense of place, how can people adapt to even the hardest conditions that they are exposed to, with either ease or unease? Infused with these wonderings, I have been lucky to engage in multiple threads of learning. In one thread, I worked on design research projects that put me into the perspective of everyday life issues, whether it be of a dual-income family or new freshmen at university. In a parallel thread, I studied theories of humanities and social sciences to identify the patterns of an inquiry, seeing the problem, hypothesis, themes, and significance with new clarity. Interweaving myself with these two main threads, I also got the chance to visit other countries for short-term design projects. Within these three threads, transitions have become a felt-life experience for me. Gradually, over the course of my doctoral studies, this became a conscious drive for me to study transitions as a topic for my inquiry.

When I was in England, working at Microsoft Research Cambridge, I biked between home and the lab. One afternoon, on my bike home, I had a moment. It was around 5 p.m, I thought, ritual, routine, performance, and narrative -- these are four categories in a person's transitions. What exactly this meant, I didn't fully know then. It took me several design projects and reading, discussing, presenting and writing to conceive it wholly. But on that afternoon in

Cambridge, I knew that transitions, as a topic, were particularly wicked problem for designers, which I wanted to take on as my particular challenge.

Transitions pervade life – if you follow people’s daily routine, you can see them shift from their home self to their work self, their morning self to their night self, as well as physically changing from their bedroom interior to their outside environment, and then reverse – like, on their bike on the side of an English road. Following a person’s larger arc – like my own, travelling from Turkey to the United States – transitions become even more dramatic. Major life changes in age, family, profession, and geography are transitions that happen in the background, while daily shifts of roles and environments occur in the short-term. I know how momentous transitions can be, from my own experiences and observing those around me. For as much as transitions pervade our life, they hold tremendous potential – for explosive growth in wellbeing or cataclysmic decline. And in this, I saw the space for design to make a real difference – to find insights into how people transition, what the critical factors leading to wellbeing and decline are, and to create products and services that would give a person in transition agency in the situation, to build their own transition experience for wellbeing.

This thesis is my exploration into design for transitions, which followed from that bike ride in Cambridge. Modes of Transition grew into a design framework that gives designers the means to approach transitions – whether they be daily or life-stage, or between roles or environments – to guide them towards sweet spots in transition experiences, which can be leveraged for wellbeing. The framework grew organically out of my own research projects and theoretical study and writings. Each project you will read about pushed me to see transitions in more complexity, and with more flexibility, and the framework has matured in step. In writing this thesis, I have synthesized all of the feedback from my projects, advisors, and colleagues, to produce a framework that is at once instructive and flexible, comprehensive and simple, theoretical and practical.

My research is unique in its blend of the theory with practical research projects. This is due to the excellent challenge of being a design student at Carnegie Mellon. Working with Professor Richard Buchanan along these years taught me to approach any given problematic situation with a unique critical lens, a lens for identifying the steps of an inquiry from the noise and crowd of the phenomena. Working with Professor John Zimmerman gave me the chance to learn and practice design research in the wild, taught me ways in which a design researcher can artfully maneuver between the constraints, resources, and possibilities. Interdisciplinary work oftentimes is a myth that's hard to achieve. However, Carnegie Mellon gave me the environment where such myth can turn into reality. My work with Professor Lorrie Cranor was a good instance of such interdisciplinary and collaborative work. Working with people outside of my realm also gave me the chance to grow other valuable perspectives. During our discussions with Shelly Farnham, I come to realize the core value of social psychology in understanding people and the ways in which design can take lessons from it to enhance people's wellbeing in an inquiry. Being able to understand and communicate with the critical disciplines of the information era, such as social psychology and computer science, is something that was extremely valuable for the thesis as a written document, as a series of research projects, and as a design framework.

My design framework is not totally complete yet. I hope that as other designers deploy it, and as I use it in my future work and research, it will further develop into an even more useful tool. Modes of Transition is more than just a design argument; it is a usable and inspiring means, ready for use immediately. But my hope is that it will spark a conversation with other designers, social scientists, engineers, dramatists, policy-makers, and other professionals. Transition challenges are peculiar in that they are almost so pervasive as to be obvious. With this work, I hope to make these obvious, unseen challenges seen – and to direct more focused research and design practice towards taking them on -- all with the overarching goal of designing interactive systems that give users agency to build wellbeing for themselves.

Chapter I: Transition, Challenge, Opportunity, or Both?

People demonstrate a mysterious yet rich and diverse ways of adapting themselves when the world changes around them, or when their place in the world changes. This thesis takes off with an inquiry into this mystery, and then considers the challenge of transitions through the lenses of design discourses. This first chapter dives into what the problem is, whether it is a problem, what it means to be a problem in particular terms, and what is needed from a design perspective to meet it. It begins by establishing the distinct ‘designerly’ stance of the thesis, before moving on to examine what transitions are and what challenges they present. Once the problem is presented, with its ramifications explained, then the route for the inquiry becomes clearer. The final section builds up the central inquiry of the thesis, and it positions the thesis among existing design products and perspectives while laying out its new contributions to the field.

I. An Experience-Centered Design Approach

This thesis takes approaches design challenges with an eye toward interactive products, focusing on ‘experience’ and ‘situation’ rather than on just the individual, the environment, or the product alone. Products take shape in relation to designers and to a community of use. A designer’s endeavor in making begins with and through products. Products fall into a wide array of realizations, from tangibles to intangibles. As the community of use, people use these products to know the world and engage with it. Products help people to grasp the immaterial nature of their activities, as shaped by language and actions. Moreover, products act as interventions in people’s activities. They can be mediators, like communication and transportation products; and facilitators, as with diabetes-prevention and anti-smoking campaigns. Designers develop product

interventions by means of the design process. A designer's intent is to transform a given problematic situation into a preferred state.¹ But realizing the designer's job is neither a simple nor an obvious undertaking. To truly achieve the transformation of a problematic situation, the designer first must achieve an in-depth understanding of the problem. Real world situations carry wicked problems, those that are not easily defined or comprehended.² Faced with a wicked problem, the designer can devise design strategies to focus on one of three things: people, products, or the situation. This choice of focus stands as a major difference between the various design disciplines, be they engineering, industrial, interaction, or organizational design.

Among the design approaches that center on people, there are four main approaches: those that focus on cognition, on perception, on culture, and on experience. Herbert Simon—with his perception of the human as a complex organism of neurons—focuses on information processing systems and cognitive behaviors that are built on top of those processes.³ This cognitive approach undermines the richness of humanly conditions, insofar as it assumes that a human behaves in the same predictable, rational way that a machine does.

Gibson builds an approach focused on human perception, attending to the implicit processes that happen when a person enacts roles.⁴ The perception approach concentrates on the internal processes of a human, and it recognizes the possibility of more diversity of experience and reaction than does the cognitive approach. But it does not bring a comprehensive approach to the influence that social interactions has upon the human. The ontological approach, on the other hand, relies too heavily upon the environment as influence. It proposes that the social and cultural norms that surround a person will shape the human dominantly. It, like the previous two approaches, makes too large of a generalization in its conception of the human; it proposes an

¹ Herbert Simon, *The Sciences of the Artificial*, The MIT Press, 1996, p.111.

² Horst Rittel & Melvin M. Webber, Dilemmas in a General Theory of Planning, *Policy Sciences* 4, 1973, p.155-169, and Richard Buchanan, Wicked Problems in Design Thinking, *Design Issues*, Vol. 8, No. 2 (Spring, 1992), p. 5-21

³ Herbert Simon, *The Sciences of the Artificial*, The MIT Press, 1996.

⁴ James Jerome Gibson, *The ecological approach to visual perception*, Psychology Press, 1986.

over-determined human, which doesn't account for the inevitable diversity and unpredictability of human activity.

John Dewey's interaction centered approach is more attuned to the richness of human experience.⁵ Dewey perceives human beings to be experience-makers in their interactions with environment, recognizing that a human's thoughts and actions are contingent upon their surroundings. This approach points the designer towards the importance of interactions. By focusing on the doing and undergoing between the individual and the environment in the design process, the designer can come to a holistic understanding of the wicked problems and build products to transform them.

Approaches, like the first three, which underestimate the relationship between the human and environment, fall short in bringing a holistic understanding of design problems. An experience-based design approach is a comprehensive one, with its focus on people, products and environment all together, and with its spatiotemporal and action-centered features. An experience is defined as the form of the self's interactions with an environment, and it is characterized by its practical, intellectual, and emotional qualities.⁶ An experience is more than its sum; consequently, its qualities cannot be reduced to its parts.⁷ This thesis follows in the line of Dewey, embracing a methodology that has designers keeping *experience* at the center of their work, with a constant awareness of the interrelations between the self and her environment.

II. Design for Transition, & the 'Changing – Unchanging' Lens

An experience-based design approach is particularly useful when it comes to transitions. In any experience, a person will struggle between the changing and the unchanging situations in which she exists. No experience is ever exactly like any other one; no matter how similar the

⁵ John Dewey, *Art As Experience*, Penguin Press, 2005.

⁶ Dewey (ibid).

⁷ Dewey (ibid), John McCarthy, Peter Wright, *Technology as experience*, The MIT Press, 2004.

environment, the people, and the products, they are never precisely as they were before or as they will be later. An individual's struggle with this dynamic of changing-unchanging can grow more intense if she undergoes a transition. At its most basic, a transition occurs when a person passes from one state to another.

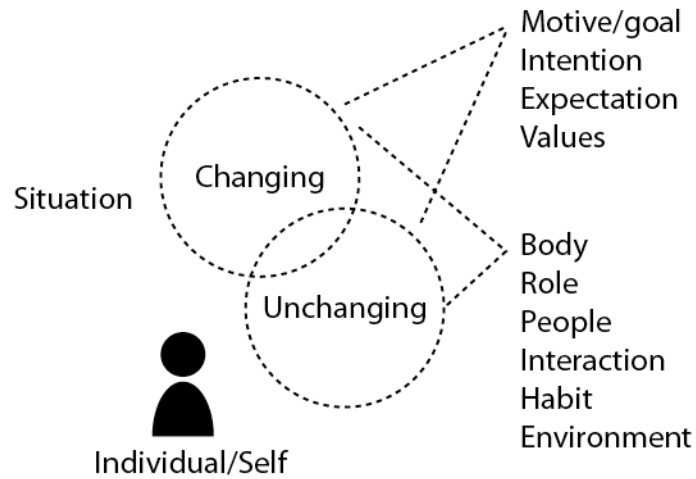


Figure 1: During transition, an individual encounters the tension between changing and unchanging dimensions happening simultaneously, (c) Fatih Kursat Ozenc 2011, All Rights Reserved

For an individual, there are certain categories of factors, which might be ‘changing’ – or in other cases might be remaining ‘unchanged’ – during a transition. Changing or unchanging can occur at a more material, tangible level of a person, or at a more abstract one (see Figure 1). These categories provide a useful initial lens for the designer approaching a transitional wicked problem, pointing them towards the factors, which their design should consider, utilize, and resolve. At the material level, a person's body, her role, her surrounding people, her interactions, her habits, and her environment might change. These factors are manifest in the physical world and are observable to others. At a more abstract, interior level, a person's motives and goals, her intentions, her expectations, and her values are also factors that might be changing, or remaining unchanged. Also to be considered – but more likely to be ‘unchanging’ rather than ‘changing’, except for more extreme transitions – are a person's genetic and cultural codes, and her personal and collective lived experiences.

It can be assumed that any transition, even the most mundane, will involve changes of multiple factors. Some transitions may involve nearly all of them, for example, being diagnosed with a major illness. If a woman is told by her doctor that her test results came back, and that she has Stage 3 esophageal cancer, she is immediately thrown into a tremendous transition. The most prominent ‘changing’ factor is her body, with cells multiplying, forming tumors and disturbing her whole physical system. But with the diagnosis, there is not just one transition of the body; there is a cascade of transitions, involving almost all of the factors identified above. Her days will be spent at the doctors office, she will be surrounded by doctors, nurses and other patients, she will eat differently, she’ll be taking drugs, and she’ll have to change her eating, her exercise, her sleeping, and her relationships to those around her. On an interior level, her expectations of the next months will change, as may well her life goals, what she values, and what motivates her.

Not all transitions will be so dramatic, with so many moving parts. But the designer must be aware, that what appears as one transition may actually contain multiple factors in flux. The ‘Changing/Unchanging’ lens, which points towards these multiple categories, can direct a designer to identifying which factors are in flux, which remain stable, how important they are in relation to each other, and what interrelations can be found among them. This lens defines and maps the transitional situation for the designer, as he embarks upon the design process.

Some transition problems may have, at their core, the challenge of ‘changing’, others the challenge of the ‘unchanging’. Changing situations posit the challenge of unknowingness, but also the stimulation and novelty. Unchanging situations posit the challenge of status quo, but also the comfort of convention and familiarity. For example, if someone wants to transition from being a smoker to a non-smoker, the most crucial factor is their unchanging habit of smoking. While her values and intentions may have changed, her habits have not; and the design must address the ‘unchanging’ factor more than the ‘changing’ one. Changing and unchanging are defined in a dynamic and interchangeable way. People at certain encounters set the goal for

changing, in some other for unchanging, and in some others, they harmonize them both. When assessing the transition situation, the designer should be sensitive to both dynamics, mapping that which is changing, that which is unchanging, and how they interrelate.

III. A Transition Up Close



Figure 2: Deborah and Kirby's life style transition is marked by a devastating stroke⁸. (c) Takaaki Iwabu, newsobserver.com 2011 All Rights Reserved.

A true story from the domain of health care can help clarify the changing and unchanging dimensions, and the potential of design for transitions. The diagnosis of an illness carries with it

⁸ Image taken from "<http://www.newsobserver.com/2011/03/07/1034805/hospital-patient-discharges.get.html#storylink=misearch#ixzz1K7lYWh9M> ", reproduced here for educational purposes only

a whole cascade of transitions, as mentioned previously, some of which are environmental changes: entering the hospital, staying in it for some time, and then being discharged from it. Hospital discharge can be a particularly challenging transition, and it also offers a rich illustration of the changing and unchanging dimensions of a person's transition experience.

It is a common expectation that when people leave the hospital, they have gotten better than they when they had entered the hospital. But research shows that 1/3 of patient population must be readmitted to the hospital after 90 days from their discharge due to the lack of primary care⁹. Consider the case of Debora and Kirby Ellison (Figure 2). Kirby had a shattering stroke in 2010 and, after remaining in the hospital for some while, was finally discharged from the hospital¹⁰. Things got more complicated by then. "The discharge experience for us was not a very good experience - it was confusing," Debora Ellison said, adding that the materials she was given seemed disorganized and that some resources were out of date. "I thought, 'I'm prepared for this. I can do that. I can handle this,' but I couldn't."

⁹ http://articles.chicagotribune.com/2009-04-02/news/0904010850_1_readmissions-medicare-patients-hospital-discharge

¹⁰ Read more: <http://www.newsobserver.com/2011/03/07/1034805/hospital-patient-discharges.get.html#storylink=misearch#ixzz1K7lYWh9M>



Figure 3: DIY intervention built by Debora, partner of Kirby¹¹, (c) Takaaki Tiwabu newsobserver.com 2011, All Rights Reserved.

As Kirby needed a wheelchair for his mobility after the discharge, the couple thought they would easily build a ramp outside of their homes, but instead they ended up with moving to a distant assisted living center. Kirby's physical condition had been upended; his body had changed in so striking a way that it came into conflict with his unchanging home context – the physical structure of his home environment. When they decided to move back home, Kirby needed to continue to physical therapy sessions, but the agencies they tried that used to build ramps no longer were in business. Debora did something unique, with a help of a friend, using online DIY instructions, she built a ramp up to her front door using Home Depot materials (Figure 3). After the ramp, she rolled the wheelchair down the ramp, and brought her husband to

¹¹ Image taken from "<http://www.newsobserver.com/2011/03/07/1034805/hospital-patient-discharges.get.html#storylink=misearch#ixzz1K7lYWh9M> ", reproduced here for educational purposes only

the hospital for the therapy. Kirby's habitual activities that had once been taken for granted – like walking to work or even getting the newspaper from the front yard – are now challenged him and Debra.

As he said before leaving for therapy appointment: "I could sit around and be bored and miserable or I could live each moment, laughing and crying, with the determination that I will get out of this chair." The mobility transition illustrates only the visible part of an iceberg. One can extend the paradoxes to personal, social and cultural levels. Kirby was an experienced sales man, sharing a role with Debra as a breadwinner in a dual-income family. The changing experiences put him into a dependent role. His habits of independency are now at high risk, as are his interactions. His partner had to take time off from her work to take care of him; they became dependent on COBRA support to continue on their lives, which carries the possibility of a downward social mobility.

This example hints at two threads: the entanglements behind transitions – how disruptive and multiple it can be, and the possibility of design even at DIY (do it yourself) level enhancing the transitional situation. To further understand the entanglements behind these kinds of transitions, I deploy another level of lens – this one building off of the changing-unchanging dimensions discussed in the previous section – to look for the commonalities and emergent dimensions and axes to consider in a transition experience.

Human states can take several forms, leading to four primary types of transitions: social-role and life-stage transitions (which occur between role states) and spatial and migration ones (which occur between environment states). Role and spatial transitions happen on the micro level; whereas social and environmental ones happen on the macro one, see Table 1. Some brief illustrative examples are in order, one for each type of transition. These are four stories of real

people in transition, which can illuminate the wicked challenges posed to the designer.¹² They are but a sample of the problematic entanglements that people face during transitions, but these few specific examples of transitions will help ground and color our theoretical discussions. I have changed the names in these stories to preserve their anonymity.

| time span / interaction | micro | macro |
|------------------------------------|--------------|--------------|
| role | social role | life stage |
| environment | spatial | migration |

Table 1: Types of Transitions, (c) Fatih Kursat Ozenc 2011, All Rights Reserved

The Spatial Transition

Lara works at Johns Hopkins Medical Center in Baltimore; she is a social worker for people who have just been diagnosed with schizophrenia. Her hours are fairly normal: shifts begin at 8:30 in the morning and typically end around 5:00 or 6:00 in the afternoon. Lara lives outside of the city limits, in a suburb just on the edge of Baltimore. She really loves her work at the hospital, but the commute can be annoying and frustrating. She chose to live in the suburbs because she was worried about her safety as a single woman in the city. The commute is long, taking almost forty minutes each way – and it can be longer if the traffic is bad. She would rather

¹² McAdams similarly uses narratives to illustrate the transitional encounters successfully in his work on the life transitions. ([Dan P. McAdams](#) (Editor), [Ruthellen Josselson](#) (Editor), [Amia Lieblich](#) (Editor) *Turns in the Toad: Narrative studies of Lives in Transition*, American Psychological Association (APA), 2001.

not drive, because of the cost and the stress, but the public transportation in Baltimore can be dangerous sometimes. She explains,

“There were several times where people would sit next to me & the ride was scary – guys (who may have been high) hitting on me & not leaving me alone. There were a few times where other passengers stepped in to help me out, basically yelling at the people to leave me alone. Those were awful times. You're stuck on this metro train, you can't get off of it, & so you're kind of trapped with the other passengers. When the other passengers are making you uncomfortable...it's really scary.”

Especially if she has to work late, she feels really unsafe when riding the bus home after dark. When she has driven in, the cost of parking in a garage has been very high, but if she leaves her car on the street, she's afraid it will be stolen. Plus, she feels bad driving, when she knows it's not very environmentally friendly or good for her mood. She says, “I don't like the stress of driving in big cities, particularly when I don't know my way around...[and] the thought of driving to work every day in rush hour seems awful to me.”

Lara is happy that her life is compartmentalized between work and home.¹³ She needs a break from the hospital and her responsibilities with her patients. It's better that she lives in a location separate from their neighborhoods, so she doesn't have to bump into them on the street, and that she doesn't feel like work is taking over her life. Still, the transition between work and home is full of problems. The car is not a perfect solution, nor is public transportation. Neither is secure or stress-free, and, as other studies have found, they can result in increased anxiety, lower productivity, greater absenteeism, and even health problems.¹⁴ Lara is faced with the challenge of

¹³ The compartmentalization between everyday activities arose along with industrialization. In the pre industrial areas, the home space “was understood to be a place that incorporated both work and habitual activities of living: eating, sleeping, etc....After industrialization, though, everyday life grew “compartmentalized and the institutionalized compartments are classified as high and low; their values are profane and spiritual, as material and ideal. Interests are related to one another externally and mechanically” (Dewey, p. 21).

¹⁴ Meni Koslowsky, *Commuting Stress: Problems of definition and variable identification*, *Applied*

spatial transitions: how to make the physical journey from her home place to work place in a better way, which suits her needs, concerns, and values. The changing dimension in her transition is her environment and her commute habits; the unchanging dimensions are home and work roles, her intentions, and her values. Her stressors are safety, time, pollution concern, and cost. The central challenge of Lara's transition is how she can deal with changing from her home in the suburbs to her work in the city, while still accommodating her unchanging priorities, mindset, and goals.

The Social Role Transition

Keith is a police officer in New Jersey. He also has four children with his wife Michelle; Matt is one son who is 8 years old and a set of triplets who are all 4. Life is very busy. Michelle is at home with the kids all day, then goes to work at 6pm, after Keith comes home around 5 to take over taking care of the kids. He's responsible for making dinner, getting them ready for bed, washing them up, changing diapers, reading a bedtime story, and making sure they get to sleep. He has to wake up at 4:30 in the morning, because he needs to start his shift at 6am a few towns away.

He knows that once the kids get a little older and grow more independent, life will get easier. But for now, Keith is overwhelmed. He feels caught between home life and work life. He has to behave very differently at work from how he does at home. As a police officer, he has to be authoritative and strict, his career and professional reputation depend on it. Also, nearly every day of work requires a huge amount of concentration and intensity. By the time he heads home, he feels drained and in need of relaxation. Ideally, he'd like to go out with other police for a drink, but he always has to come straight home to take over from Michele. At home, he tries to be gentle with the kids, and he has to share decision-making with Michele. But he has trouble with the adjustment. He says, "It's a difficult change going from my job, where I'm actually in

control, to coming home and having no control. It's tough to have four-year olds walk all over you. I'm just to that point, where I just don't know what to do."

Typically, the problems emerge throughout the afternoon. Not only is he tired, but also he doubts whether he is doing a good job as a father. He explains, "I walk around here aimless, confused and lost. I have a stressful job, so, I come home from that, and I tend to be aloof, preoccupied, thinking about 'Something bad happened' or whatever. It's a difficult transition, you know, going from that to this. It's hard." Work and home always seem to be invading each other. He gets calls from Michele while he is at work, to let him know about what is going on at home – especially when the triplets are giving her trouble. And when he is at home, sometime he gets calls or messages from work, letting him know about cases that are going on or telling him what to expect the next day on the job.

Keith is having a problem transitioning between social roles. Put theoretically, he struggles with the changing roles; though he tries to change between well-defined, separate role enactments, it can be exhausting and often unsuccessful. Being a father and a husband and being a police officer don't work well together; one role invades the space of the other, and then he gets confused and stressed when they blur together. This is "spill-over", a phenomenon that researchers found common in modern social role transitions, in which the moods, stresses and thoughts from one role continues to affect the person in his other role.¹⁵ Technology doesn't necessarily solve this spillover; rather it can exacerbate it by flattening out his contexts and requiring him to be 'present' at multiple roles at once.¹⁶ He can't control when other people require him to be a police officer or to be a husband-father; and he can't give priority to one role

¹⁵ M.C. Marshall, B. A. Chadwick, & B. C. Marshall, The influence of employment on family interaction, wellbeing, and happiness. In S. J. Bahr (Ed.), *Family research: A sixty-year review*, 1992.

¹⁶ As Meyrowitz observed, "Electronic media combined previously distinct social settings, moved the dividing line between private and public behavior toward the private, and weakened the relationship between social situations and physical places" (Joshua Meyrowitz, *No Sense of Place The Impact of Electronic Media on Social Behavior*, Oxford University Press, 1986).

over the other. Finding a balance is a real challenge. One role interrupts the other, and he feels useless to stop it from happening or to fulfill either role fully.¹⁷ He feels like he's not doing the best job with either position, or he constantly feels guilty and stressed switching between them.¹⁸ Keith's changing dimensions are his ever-growing children and behaviors in his father and police roles; whereas his unchanging dimensions are his grown-up habits, his environments, and his intentions to be good at both roles. The challenge in his situation is trying to switch between the roles – or how to enact them both simultaneously – as well as how to accommodate different life-stages in a family setting. Along with his role transition, there is also the conflict of the grown-up's unchanging habits and past experiences versus the children's ever changing and newly forming habits.

The Life Stage Transition

Daria had just submitted her PhD when she found out she was pregnant. Her boyfriend Luke, who was also in the last months of his PhD, was happy, but they were both surprised and scared. Neither had any definitive job plans, and they hadn't planned on having a child yet. Still, he proposed to her, they both defended their dissertations successfully, and they had a baby, Thomas. Together they decided that Luke should look for an academic post, and then Daria would take care of Thomas at home, until he got a little older. They would move to wherever

¹⁷ Mark et al., Hall 1990, Burke 1991, Hecht 1996 all remarked upon the stresses and disturbances that result from one role interrupting another. Especially when such interruptions are unexpected and sudden, they can compromise a person's role performance, work quality, and sense of identity. (Burke, P. J. 1991. Identity processes and social stress. *American Sociological Review*, 56: 836-849.) Hecht, L. M. 1996. Managing multiple roles: The organization of routine activities, chronic role strains, and psychological well-being. Unpublished doctoral dissertation, Indiana University, Bloomington. Hall, D. T. 1990. Telecommuting and the management of work-home boundaries. In *Paradigms revised: The annual review of communications in society-1989*: 177-208. Nashville, TN: Institute for Information Studies.

¹⁸ Gross and Stone observed that role blurring can result in anxiety and even embarrassment when one has to simultaneously perform multiple roles (Gross, E., & Stone, G. P. 1964. Embarrassment and the analysis of role requirements. *American Journal of Sociology*, 70: 1-15).

Luke could find a job; eventually he found one at a state school in Ohio, so they moved from California to Columbus.

Daria knew that life would change after she finished her PhD, but she was not expecting so many changes at once. Becoming a mother was somewhat intuitive, and she read a lot of books about it, but still she isn't sure she's doing everything right for Thomas. Plus, it is strange to be at home all the time. She had promised herself that she would work on her thesis, to get it published in journals, but she never seems to have any free time, and when she does she doesn't have the concentration to work on it. Some days she looks in the mirror and doesn't recognize herself. She gained a lot of weight during the pregnancy, and now it's easier to wear pajamas or tracksuits most days. The only times she leaves the house seem to be to go to the grocery store or the doctor's office, and she's started watching a lot of television. Life seems completely different from a year ago. Daria is really happy that Thomas is in their lives, but if she had to do it over again, she isn't sure she would have chosen it to happen so soon. She misses the independence and community she had when she was a graduate student. Now she can't set her own schedule, and all the conversations she has seem to be about the baby.

Daria is in the midst of a life stage transition. She has moved from being single and childless to being a married mother. Moreover, she has moved from being a graduate student to a stay-at-home mother. This combination of transitions has overwhelmed and confused her; in theoretical terms, she is undergoing a dual transition.¹⁹ She doesn't know exactly how to act in her new responsibilities yet; she misses her old way of living; and she isn't sure exactly who she is anymore. This complexity and heterogeneity of changes to her timeframe and her social

¹⁹ Bengtson and Allen, in their study of life-course perspectives, highlighted the multiple temporalities that people live in simultaneously. Each person is situated in her biological life cycle, her self-generated life narrative, and her broader historical era (Bengtson, V., & Allen, K. (1993). *The life course perspective applied to families over time*. In P. Boss, W. Doherty, R. LaRossa, W. Schumm, & S. Steinmetz (Eds.), *Sourcebook of family theories and methods: A contextual approach* (pp. 469-499). New York: Plenum.

location has instigated major stress, with possible effects on her physical and mental health.²⁰ Though she had some choice in all these changes, she doesn't feel like she's in control of what's happening to her. She doesn't know how to adjust herself to her new place in the world, and all the changes – to her body, her daily routines, her community, her independence, her lifestyle – are have compromised her sense of well-being. There are some unchanging dimensions in her life too -- her past experiences, some of her habits, and her values and long-term goals for herself. Added to this mix of changing and unchanging factors, she's dealing with the stressors of her professional role, having left the PhD behind and not pursued any career after it; the demands of her new role as a mother and ensuring her son develops well; getting along with her new husband and supporting him; and her lessened self-esteem and negative body-image.

The Migration Transition

Errol moved from Istanbul to the UK a month ago. He finished his architecture degree at the top of his class at a Turkish university, and he was lucky to get an entry-level position at a Belfast firm. He knows it will be great experience for his resume, and his initial hope was that it would lead to a more permanent job offer. But the move to Belfast has not been easy. He calls home to speak to his family on Skype every few days, and he chats to his friends back in Turkey online. But Errol feels like he's losing touch with his home, everyone's moving on without him and their lives are growing apart. He can't wait for his vacation time in a few months, when he can go back for a visit, but he's not sure how he'll manage until then. He has made a few friends through the local Islamic center, but most of the guys there are refugees from Kosovo or workers from Egypt. He doesn't have much in common with them; he wants friendships like the ones he has back home.

²⁰ L. K. George, Models of transitions in middle and later life. *Annals of the American Academy of Political and Social Science*, 464, 1982, 22-37.

Errol is in the midst of a migratory transition.²¹ He has changed cultures, moved from his home to a strange country, and is struggling to find his own place in this new situation. Part of the problem is leaving behind his community in Turkey; the other issue is adjusting to his new surroundings, which do not feel welcoming or suitable. The transition has resulted in culture shock, defined theoretically as a “a set of emotional reactions to the loss of perceptual reinforcements from one's own culture, to new cultural stimuli which have little or no meaning, and to the misunderstanding of new and diverse experiences.”²² As researchers have found in other instances of culture shock, Errol is in a state of stress due to his disequilibrium,²³ lack of understanding of cultural cues,²⁴ and the unpredictability of his life²⁵ in Belfast. Even though he had prepared for it, his migratory transition has been unexpectedly stressful, as researchers have often discovered in similar transitions.²⁶ He doesn't know if he will change his eating, drinking, or dating habits to fit into the Belfast way of life, or if he will stay isolated from the communities around him. He's hoping that the stress and shock of his migration will ease soon, but for now Errol is struggling with how alone and out of place he feels in his new home. The changing dimensions in his life are many, including, most prominently, the cultural and physical environment he's in, the people around him, the roles he plays, and his eating and leisure habits. The unchanging dimensions include his past experiences, his religion and values, his roles as a

²¹ A migration transition includes “changes in individual behavior, such as cultural patterns, social and economic achievements, job skills, family status, health and social well-being, cultural and political values, and participation in social and political organizations” (Barry Edmonston, *Statistics on U.S. immigration: an assessment of data needs for future research*, National Academies Press, 1996).

²² P.S. Adler, The transitional experience: An alternative view of culture shock. *Journal of Humanistic Psychology*, 15(4), 1975, p.13-23.

²³ J.P. Spradley, and M. Phillips, Culture and stress: A quantitative analysis. *American Anthropologist* 74, 1972, p. 518-529.

²⁴ Michael Kim Zapf, Cross-cultural transitions and wellness: Dealing with culture shock, *International Journal for the Advancement of Counselling* 14, 1991, 105-119.

²⁵ L.M. Bama, The stress factor in intercultural relations. In D. Landis and R.W. Brislin (eds.), *Handbook of Intercultural Training*, Volume 1, New York: Pergamon, 1983.

²⁶ Adler, 1975; Bama, 1983; Foster, 1973; Kealey, 1978; Kim, 1988; Locke and Feinsod, 1982; McRae, Vittitow, and Mipos, 1979; Seelye, 1984; Spradley and Phillips, 1972; Wyspianski and Fournier-Ruggles, 1985; Zapf, 1989 in Bama Bama, L.M. (1983). The stress factor in intercultural relations. In D. Landis and R.W. Brislin (eds.), *Handbook of Intercultural Training*, Volume II. New York: Pergamon.

son and architect, his halal and non-drinking habits, and his ultimate life goals for himself. His challenges include not knowing how to behave or react in unknown situations, how to find a local community to belong to, and how to remain part of his family and friend circles from a distance.

Out of these four stories, several insights can be drawn. In the first two stories on spatial and social role transitions, the person's situation is for the most part unchanging; they are still rooted in their conventions, and the challenge is to make deal with the factors that are changing with more wellbeing and less stress. In the latter two however, it is the reverse, situations themselves are dramatically changing, with most of the person's actual and abstract factors in flux, and relatively unchanging constants for them. In all four of the transition types, people have intentions and expectations, they do have general plans (and preferred states) for themselves but at the same time do not have concrete plans for how to do what they want to do, and become the person they want to be. The reality of transitions, and the clash of changing and unchanging factors, always pushes them towards reconfigurations and realignments of their life.

In these transition experiences – no matter if they are short term or long, physically distant or close, chosen or imposed –the potential for decline in wellbeing looms. This potential is aggravated when a person faces multiple transitions at the same time. As mentioned above, transitions can occur in cascades. Sometimes, micro- and macro-level transitions can occur simultaneously and increase the situation's complexity and entanglements. Making connections between these micro- and macro-level changes and addressing the entanglements pose a particular challenge.²⁷ With all of these transitions, no matter their differing time spans or originating impetus, the basic challenge is the same. A person in the transition experience is susceptible to overwhelming levels of stress, anxiety, confusion and discontinuity due to the

²⁷ L. K. George, Models of transitions in middle and later life. *Annals of the American Academy of Political and Social Science*, 1982, 464, 22-37.

changing factors, and the clash with the unchanging, and problems that arise. That said, the transition experience presents a two-sided opportunity; it can spur on continuity, growth and progress in a person's life, or it can threaten a decline in wellbeing. A transition, though it may be an innately challenging experience, need not be a negative one.

IV. The Transition Challenge for Designers

Having laid out the problem of transitions and the possibilities of decline versus wellbeing, the argument gradually shifts to the understanding of the problem in relation to design. This design inquiry follows a three-part unfolding: first, development of an in-depth understanding of people's problematic situations, second, searching for artful ways to work with, and finally taking action on their issues. The *understanding path* leads the inquiry to involve theories of humanities and social science, the *artful ways path* leads the inquiry to study the design process, and the *action path* opens up practicing design and making products. In a way, this work is a practice-based design research, consisting of a meaningful composition of these three paths, *theory*, *practice* and *process*.

Weaving such a composition, it takes the promise of Donald Schön's 'reflection in and on action',²⁸ where theory and practice cultivate each other to transform a problematic situation into its preferred state.²⁹ Following from Schön to Dewey, this design inquiry is carried upon five stages defined by the latter in *The Patterns of Inquiry*: indeterminate situation, problem, hypothesis, development, and significance.³⁰ The stories that have been told hint at the indeterminate situation, and the analysis of these transitional encounters revealed the problem. Namely, they are the paradox of changing and unchanging happening concurrently in people's

²⁸ Donald Schön, *The Reflective Practitioner*, Basic Books, 1983.

²⁹ Herbert Simon, *The Sciences of the Artificial*, 1996.

³⁰ John Dewey, Larry Hickman, Thomas M. Alexander, "The Pattern of Inquiry" *The Essential Dewey: Ethics, logic, psychology*, Volume 2 of The Essential Dewey, Larry Hickman Indiana University Press, 1988, p.169-179.

lives, and the tension and confusion that results. So how does design proceed from these first two stages?

Design, with its practice and research tracks, has the potential to foster and sculpt interventions into a transition – mapping out the changing and unchanging factors, addressing them through an intervention, and creating new life paths, modes, and interactions that can harmonize the changing and unchanging, helping the person to move towards well-being. Designed interactive products can function as strategies and interventions in transition experiences, providing support and guidance to the individual. A well-designed product, whether intended for a transitional experience or not, can provide concrete or abstract (yet structured) places for people to grip onto in the world. As Arendt claims, “the things of the world have the function of stabilizing human life,”³¹ and as Csikszentmihalyi states, “objects provide continuity of the self through time, by providing foci of involvement in the present, mementos and souvenirs of the past, and signposts to future goals.”³² Consumer behavior research also hints at the potential of design in transition, with its product attachment theory. Belk proposes that “possessions (products) are part of people’s extended self,” and as such they can support people through the changes in their life.³³ The relationship between individuals and objects can move to one in which products aid the transition to a new world, where the self is distinct from the environment. From there, the person can move from the transition objects to direct engagement with the environment.³⁴

Current Design for Transitions, and shortcomings

Several familiar designed products – including everything from products to services – function as interventions in transitions. Transportation products, like cars or subways, allow

³¹ Hannah Arendt. *The Human Condition*, University of Chicago Press, 1998, p.157.

³² Mihaly Csikszentmihalyi, Why we need things? Steven Lubar and W.David Kingery.(Eds.). *History from things*, Smithsonian Institution Press, 1993.

³³ W. Russell Belk, Possessions and the Extended Self. *The Journal of Consumer Research*, Vol. 15. No.2, 1988, p.139-168.

³⁴ Ibid.

people to achieve mobility when confronted with a spatial transition. Communication products, like mobile phones or Internet phone services, assist people who have migrated to maintain ties with their home contacts while organizing and adjusting to their new space. These kinds of products assist in people's immediate interactions, helping people to advance their temporal and spatial arrangements by altering their changing and unchanging dimensions in ways that reduce some of their stress and inconvenience.

These types of interventions are not perfect, though. At the same time as the products provide greater connectivity and movement, they can also contribute to stress, lack of control, and confusion. Take communication products as an example. Advances in mobile technology provide the opportunity to reach electronic mail, phone calls, and even the Internet while on the go. This creates multitasking and role enactments regardless of time and space, which flatten a person's contexts and quicken her pace of life. These result in stress and decline of the experiential qualities in everyday life. As Frissen found with information and communication technologies, even though people are appreciative of their role in bridging home and work domains, these technologies are still perceived as the cause of control and flexibility problems.³⁵ These products have created "technology paradoxes," in the words of Jarvenpaa et al.³⁶ As these researchers found in their study of mobile device users worldwide, people have problematic relationships with the technology in their life. Their interactions with the products create paradoxical reactions, including empowerment/enslavement, new/obsolete, assimilation/isolation, control/chaos, independence/dependence, fulfilling-needs/creating-needs, planning/improvisation, engaging/disengaging, public/private, and illusion/disillusion. These paradoxes reveal that a

³⁵ J.V.A Frissen, ICTs in the rush hour of life, *The Information Society*, 16, 2000, p. 65-75.

³⁶ S.L.Jarvenpaa, K.R. Lang, and V.K. Tuunainen, Friend or Foe? The Ambivalent Relationship between Mobile Technology and its Users, in *Designing Ubiquitous Information Environments: Socio-technical Issues and Challenges*, Carsten Sorensen, Younjin Yoo, Kalle Lyytinen, and Janice I. DeGross (eds.), Springer Science and Business Media, Boston, MA, 2005, p.29-42.

person's wellbeing may be improved at some level by a design product, but at another level the very same product can compromise it.

Some services also offer interventions for transitions, particularly for more long-term transition experiences. Campaigns that help people quit smoking³⁷; therapy sessions discussing the diagnosis of a serious illness³⁸, and rideshare software that attempt to motivate people to carpool are all examples of products meant to achieve habituation and adoption to a changing situation, by nudging users out of some of their unchanging dimensions. But like with products, services also have their shortcomings as interventions. In the context of service design, the challenge lies in shifting people's ingrained habits. No matter how encouraging the transition products are, their target audiences may not actually deploy them. Garling and Axhausen for example, claim that car drivers with a strong car-use habit have low motivation to participate in public transport. They find that "even when persuasive communication changes attitudes and intentions, in the case of individuals with a strong habit, these changes in attitudes and intentions should have little if any behavioral effect because the habit is not under intentional control but automatically activated by the situation."³⁹ Moreover, Verplanken and Aarts claim that changing habitual behaviors is hard; the best way to change behaviors is to use negative reinforcement methods such as punishing people through financial measures.⁴⁰ But this view doesn't offer much to the designer; it carries all the drawbacks of a behaviorist approach that doesn't necessarily value human dignity or agency.

Experience-Based Interactive Product Design for Transitions

³⁷ Quit-now is an example initiated by the Australian Governmental Agencies, see the website at <http://www.quitnow.info.au/>

³⁸ "I am too young for this" cancer foundation is a comprehensive example, providing people resources at varying levels and scope. It can be reached at <http://stupidcancer.com/>

³⁹ T. Gärling and K. Axhausen, Introduction: habitual travel choice, *Transportation*, 30(1), 2003, pp. 1–11.

⁴⁰ B. Verplanken and H. Aarts Habit, attitude, and planned behaviour: IS habit an empty construct or an interesting case of goal-directed automaticity? In W. Stroebe & M. Hewstone (Eds) *European review of social psychology* (Vol.10. pp/101-134)) Chichester, England Wiley, 1999.

This thesis begins from this point – there have been several types of designs meant to help people through transitions, but there are many ways that they can fail to do so. Design interventions can further complicate transitions (as with mobile products), or they don't consider the problems of transition specifically enough (as with service designs). They do not achieve harmonizing; instead, they put at risk a person's sense of herself, her familiarity with her space, her understanding of her roles, and her relationship with her social and physical environments. As such, the definitive question about transitions – and the central inquiry of this thesis – arises: *how can designers design products and services that will harmonize the changing and unchanging in transitional experiences?* How can the design of such products help people experience transitions with a sense of harmony, promoting continuity and growth rather than discontinuity and decline in well-being?

A better design perspective – developed specifically to the challenge of transitions – is necessary to the challenge of transitions. Returning to the first discussion in this chapter, experience-based design, with its focus on the interaction between the self and her environment, should be the core of this perspective. Interactions between people help the individual to foster habits. In another way, the individual habituates to the new environment through interactions. Interactions lead people through the transition; through habits, a person can form lasting relationships with others and settle into her new life state. She can accommodate herself to that which is changing, and can adjust that which is unchanging as well. Among the abundance of products, interactive products generate interactions more than any other kind and type of products. They do this as interaction and relationships are core to their emergence and existence. To begin with, then, a transition-centered design perspective must prioritize *interactive* products.

New Directions in Interaction Design

Building a design approach for interactive products is a challenge in itself. Traditional design centers more on the creation of products rather than experiences. Buchanan, in his poetical

analysis, proposed a framework with which to conceive of designed products, with the elements of form, material, manner, and function.⁴¹ His analysis echoes the key figures of design in the 20th century, such as Moholy Nagy, who also asserted these four elements should be central in the design process, with an exploration of their technological and social implications.⁴² Existing design perspectives have arisen around these four poetical elements. Some center design on manner, in the shape of technology, like engineering design does. Others focus design on material qualities, like art and craft communities do. But when the design concerns interactive products, the traditional analysis of form, manner, function, and material proves inadequate. It is too centered on the physical embodiments of products; it doesn't recognize the importance of action and interrelations between a person, the product, and the environment. With interactive products, the nature of design has changed, from physical to immaterial, from product to experience. To address such a shift, a new set of design tools is needed to keep up with it.

State-of-the-art theoretical approaches offer a variety of interpretations of what an interaction is, and how designers should conceive of it as the material of experiences. An activity theory perspective, with its focus on the achievement of a task, considers interactions as operations to achieve a preferred state.⁴³ A person uses a product to reach her desired goal. But its view of interaction is too limited. It does not consider how extensive or complicated interactions can be between a person and a product, and it does not value the experience of the person during this interaction. It views interactions too much as a means to an end, rather than seeing the opportunities for promoting human well-being within the interaction itself. The distributed cognition perspective also considers interaction, this time as a process and interplay between two machines – the human and the technology product.⁴⁴ Just as with activity theory,

⁴¹ Richard Buchanan, Design Research and the New Learning. *Design Issues* Vol. 17, No. 4 (Autumn, 2001), pp. 3-23.

⁴² Laszlo Moholy-Nagy, *Vision in Motion*, Chicago: Paul Theobald, 1947.

⁴³ Bonnie A. Nardi, *Context and Consciousness: Activity Theory and Human-Computer Interaction*, The MIT Press, 1995.

⁴⁴ Bonnie. A. Nardi, *Studying Context: A comparison of Activity Theory, Situated Action and*

the cognition perspective is too materialized. It supposes that interaction can be planned and programmed, but it does not recognize the randomness and improvisations of people and environments. Its view of interaction is not useful; it oversimplifies the human experience and does not pay sufficient regard to promoting well-being.

There are several other, more promising design perspectives that point to a better way of framing interactions. Situated action approach offers a critique of the previous two perspectives.⁴⁵ It argues against the notion that people are computers, that they are predictable or knowable. Instead, it advises designers to be aware of the randomness that their products will exist within, and that people will improvise their way through situations. Building from this understanding, an interaction design perspective puts the focus on experience.⁴⁶ A designer should consider the dynamics of experiences, rather than just the products. It urges designers to create products that are not only practical, helping people solve straightforward problems, but also human-centered, fostering in them emotional and intellectual satisfaction. A critical design perspective adds another dimension to the conversation. It positions design as a means to make implicit processes more explicit; to challenge assumptions held by other designers and society at large; and to create conceptual products that are radical arguments and dedicated more to advancing conversation than achieving practical ends. Like with the work of Dunne, critical design shows that products now go beyond traditional categories and poetical understandings; they can be immaterial, intangible, beyond standard physical embodiments.⁴⁷

This thesis draws on these three perspectives, with their focus on making human-centered interactive products, which work towards fostering experiences, which recognize the situation and improvisation within interactions, and which offer new and challenging understandings of

Distributed Cognition. *Context and Consciousness: Activity Theory and Human-Computer Interaction*, The MIT Press, 1996.

⁴⁵ Lucy A. Suchman, *Human machine reconfigurations*- 2nd edition of Plans and situated actions, Cambridge University Press, 2007.

⁴⁶ John Dewey, Having an experience. *Art as Experience*, Capricorn Books, 1958.

⁴⁷ Anthony Dunne, *Hertzian Tales*. The MIT Press, 2005.

life with conceptual products. These perspectives help to make the shift from a traditional design analysis to one that focuses more experience than products. Such a shift requires a new set of themes to design with. Aristotle's form, matter, material and function are not adequate to capture the richness of experience in interactive design. Instead, a focus on the action within transition becomes critical; it is action that is the core material of any experience. A new, dynamic framework – centered on action, and considering immediate and long-term interactions together – is necessary.

V. Roadmap

This thesis works to build such a framework. In the following chapter, I consider what the designer's undertaking must be, in more specific terms, when it comes to designing successful interventions in a transition. The concept of *character* promises to be key. If a designer can foster character in the interaction between the person, the product, and the environment, the transition will be a harmonious one. Traditional design notions of character are updated to fit interactive products, with an emphasis on building products that *talk back* to their users. This discussion leads into Chapter 3's consideration of what tools designers can use when designing for transitions. It introduces the *modes of transition framework*, which identifies routine, performance, narrative, and ritual as the four crucial themes, around which designers must orient their work. The framework offers a new design perspective for transition products, providing a flexible guide for analyzing transition problems and synthesizing interventions for them. Chapter 4 then puts the framework into action. It overviews several concept products built to address transitions, and it identifies how the design perspective operates in these particular situations. Finally, Chapter 5 offers a re-evaluation of the framework in light of these design experiences, and it returns to the broader question of harmony, with a consideration of how the framework can help promote character, continuity and growth during transitions.

Chapter II: Character in the Situation

Unveiling the challenge and opportunity of transitions, this inquiry's primary motive is to provide the designer with a lens for transitions that can be used to address the changing and unchanging dimensions of the experience, using interactive products to foster well-being. But how, practically, can this be achieved? In other words, what should the designer's secondary motives be? This chapter argues that the key lies in 'character'. A designer must encourage *character in the situation*, in order to achieve the preferred state. No matter how in flux a person and her situation is, character can guide her through the transition by encouraging her to behave according to her own virtues and priorities – to act as the person she wants to be.⁴⁸ It is the designer's secondary mission, then, to intervene with products that stimulate this character in the interactions between the individual, the product, and the environment (Figure 4). Unlike in previous understandings, character here lies not exclusively in one of these three, but rather in the interrelations and interactions among them.

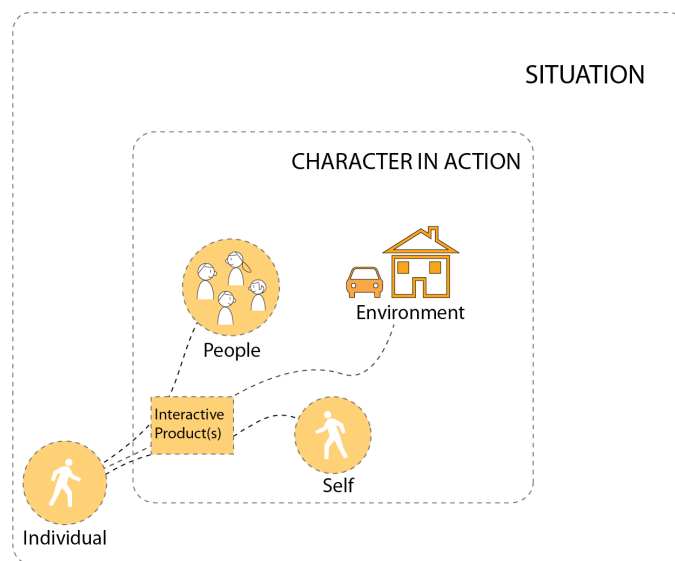


Figure 4, Character In Action, (c) Fatih Kursat Ozenc 2011, All Rights Reserved

⁴⁸ Richard McKeon, Character and the Arts and Disciplines. *Ethics*, Vol. 78, No. 2 (Jan., 1968), pp. 109- 123, The University of Chicago Press, 1968.

Prior work on the concept of character and transitions has identified four distinct approaches to explain how a person experiences a transition: the human nature-coping approach; the dramatic-persona approach; the ethos-virtue/habit approach; and the social turn approach. Each of the four employs a distinct understanding of ‘character’, and based on this understanding, each presents a unique conception of how a person undergoes a transition. Implicit in these understandings is a suggestion for what kind of interventions will best address the challenges within the transition. The first half of this chapter examines each of these perspectives, to identify its underlying principles, its conception of character, and its potential for improving a person’s transition experience. It finds that the ethos-virtue/habit approach and the social turn approach are the most comprehensive among the four; with the most to contribute to a new approach to designing for transitions. Their understandings of transition can be put to use in the next chapters, when the thesis considers how, practically, to build character in interactions.

The second half expands this conversation of character in the human experience of transition to a design perspective. There is a new generation of interactive products and services that have the potential to substantially improve the quality of transitions. But, first, a new conception of character must be built, that will better fit the interactivity and immateriality of these products. The chapter will attempt to do just this, before the next chapter returns this discussion back to the question of how designers can intervene in transitions for well-being.

Human Character in Transition, a literature review

Before considering the character that can emerge in the designed situation, first we must better understand the concept of human character. Throughout literature⁴⁹ the concept appears, both as an explanatory tool (i.e., human character determines how people transition in their roles

⁴⁹ Literature on character is diverse, including developmental and social psychology, anthropology, philosophy, rhetoric, and performance arts.

and circumstances) and as an intervention (i.e., human actions in transitions take shape with their relation to character). At its most basic, human character is the quality that emerges out of the combination of a person's traits, mindsets, and actions. Character is reflexive; it both influences a person's actions and is influenced by them. People are not necessarily in control of their character,⁵⁰ nor can they fully define it. It is the collective outgrowth of their deliberate and unconscious actions, along with their belief systems, personality traits, and worldviews.

More specific definitions of character, and its role in transitions, depend upon the theoretical approach one takes. There are four discernible camps of thoughts on what character is, how people undergo transitions, and what role character plays in their experience, see Figure 5.

1. *Human Nature – Coping Approach*: Character is an actor's unchanging body features, temperament and personality traits. In a transition, a person will use them as tools to cope with the stress of the changes.
2. *Dramatic – Adaptation Approach*: Character is a set of interchangeable personas. In a transition, a person will choose the most suitable persona for her new surroundings and change herself to it, acting it out to in order to best adapt.
3. *Ethos – Virtue/Habit Approach*: Character is a combination of a person's unchanging virtues and her changing habits. In a transition, she will turn to her virtues as a guide to how she will change her habits to adjust to the situation.
4. *Social Turn Approach*: A person's character – whether it takes the form of traits, personas, virtues, or habits – is substantially influenced by the long-standing values and practices of her society. In a transition, she will rely upon these stable social norms to guide her through the change and provide support.

⁵⁰ As McKeon observes, “all actions, even erratic and neurotic actions, are reasonable, since they have discoverable causes of which the agent is frequently explicitly conscious.” (McKeon, *ibid.*)

I argue for an approach that builds off the final two approaches, with a focus on the interplay of virtues, habits, and social context. This combination offers a more holistic perspective than the either of the first two, while encompassing their understandings of coping and adaptation. It also provides a rich tool with which to understand and design for transitions.

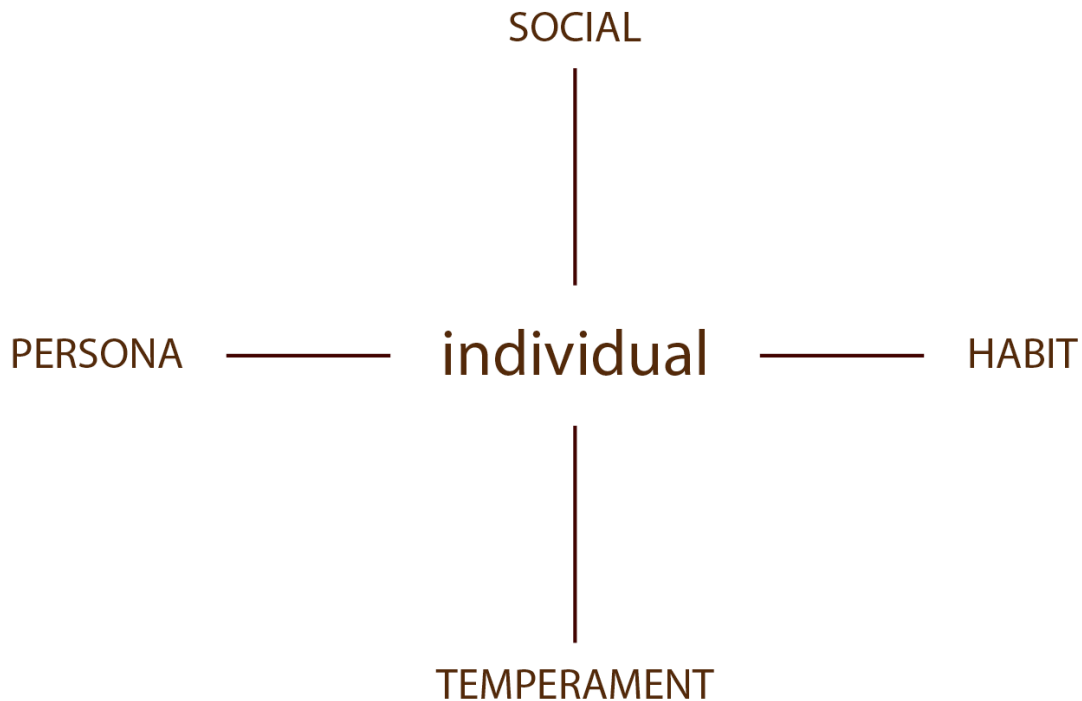


Figure 5: Four perspectives on an individual's transition, (c) Fatih Kursat Ozenc 2011

Temperament – Coping Approach

The temperament approach offers a conservative view of a person, in which each human has a relatively stable and pre-determined set of traits. Human nature consists of unchanging dispositions rooted in people's instincts, which later develop as the *unconscious* and *conscious* portions of the *ego*.⁵¹ Keirsey follows this psychoanalytical reading with the notion of

⁵¹ Sigmund Freud, *The Ego and the Id* - First Edition Text, Martino Fine Books, 2010.

a temperament model. Instincts are sensual or perceptual qualities that form the temperament types. These are inborn unchanging traits that are actualized through use.⁵²

In the context of transitions, a focus on human nature, temper, and unchanging traits leads to a coping approach. This approach proposes that transitions are primarily matters of coping, in which people encounter stressors and arousals and deploy their fundamental traits (or, coping traits) as tools to overcome them. How coping traits operate depends on one's reading of the cause-effect relationship between the occurring events and the individual with the environment. Historically and conceptually, there are two kinds of coping approaches: a physiological one, with a response-stimulus, and a psychological one, with cognitive-relational stress model. The physiological model of stress refers to "an orchestrated set of bodily defenses against any form of noxious stimulus....Programs based on the response definition discuss stress reactions such as distress, anxiety, irritability, or physical ills and teach methods such as relaxation, meditation, biofeedback, and exercise to control reactivity."⁵³

Based on the cognitive-relational model, researchers developed an appraisal-coping model of dealing with transitions. According to this model, stressors are classified as global (universal) or situational stressors. Once the person assesses the various stressors and focuses on solving one, she can deploy her character traits for either problem-focused or emotion-focused coping, as theorized by Folkman and Lazarus.

People use both problem and emotion focused forms of coping in virtually every stressful encounter, however, in general it is appropriate to rely more on problem-focused coping in situations in which there is a potential for changing the outcome, whereas it is appropriate to rely more on emotion-focused coping in situations where there is little the individual can do to change the outcome.⁵⁴

⁵² David Keirse and Marilyn Bates. *Please Understand Me: Character and Temperament Types* (Paperback) Intj Books, 1984

⁵³ Susan Folkman, Margaret Chesney, Leon McKusick, Gail Ironson, David S. Johnson, and Thomas J. Coates Translating Coping Theory into an Intervention, *The Social Context of Coping*, edited by John Eckenrode. Plenum Press, New York in eds John Eckenrode, *The Social context of coping*, Plenum Series on stress and coping, Springer, 1991.

⁵⁴ Richard Lazarus Susan Folkman, *Stress, appraisal, and coping*, Springer Publishing Company, 1984.

Problem-focused coping strategies are confrontational and interpersonal, and they involve planning out solutions to problems. Emotion-focused coping strategies include distancing, escape-avoidance, accepting responsibility or blame, exercising self control over the expression of feelings, seeking social support, and positive reappraisal.⁵⁵ All these variations of coping are useful to design for transitions, since research into them investigates how to modify circumstances that precipitate stress, as well as how to control and relieve stress itself.⁵⁶ Accordingly, coping strategies could provide groundwork for developing a design that would relieve the stresses within transitions.

But the coping approach – with both its physiological and psychological models – falls short in explaining the richness of character in transition. It doesn't adequately address the complexity of individuals' tension between stressors and arousals. An individual is not only bound to passive stressors, but also arousal, such as stimulants for pleasure. It doesn't adequately account for the complexity of an individual, varieties in her environment, and her social interactions. Individual complexity arises from the myriad roles she enacts and her differing motives and expectations when engaging in these enactments. Depending on a person's attitude and needs, she may react to a transition experience in remarkably different manners. Take the example of a freshmen student: in her case, the transition stress may be a positive experience. The challenge of choosing a major at university can lead to personal growth, and so may be a desirable process – which is not accounted for in the coping approach. The approach also neglects the importance of environment and social interactions. For instance, people in transition often rely upon social support, which is unaccounted for in emotion-focused coping models.

Another problem with the coping approach arises from the distinction between its categories of problem- and emotion-focused coping. A division between these two suggests that a person has

⁵⁵ Ibid.

⁵⁶ L. Pearlin, M. A. Lieberman, E.G. Menaghan, T. J. Mullan The stress process, *Journal of Health and Social Behavior*, 22, 1981, 337-356.

two kinds of traits: those that are changing, and those that are unchanging. As such, it characterizes emotion as an unchanging and passive coping strategy. This distinction is problematic, because a person's problems during a transition are emotional by nature. It is impossible to disentangle emotions from problems, in order to establish reason as the active strategy. Lazarus and Folkman identified these shortcomings of the model and constructed a new model based upon their critique.⁵⁷ Their key innovation was reframing coping as a process of mediating emotions, with concern for how a person's attention and meaning changes in a transition. This renewed model postulates that perception is a driving force of transitions; the level of stress and reaction to stress depends upon what a person pays attention to and what meanings they ascribe to their situations. The model's shift in focus also points out the concept of adaptation as another useful perspective on character in transition, which can add to coping-centered understandings.

Dramatic – Adaptation Approach

An adaptation approach is based upon a more flexible view of a person. Rather than unchanging traits defining how a person will react to a transition experience, a person will remodel herself in order to better adjust to her changed circumstances. Working within this approach, Goffman situates human character in role performances, arguing that a person is constantly switching between role enactments for the sake of presentation.⁵⁸ For him, human character is a set of personas, each consisting of its own personality traits. Character is a closet full of different personas; a person dresses herself in the one that fits the occasion and will change as the situation (or her assessment of it) does.

If in a transition, a person will adapt to the changing circumstance by switching between personas, or adaptation. Adaptation is defined as “the modification of an organism or its

⁵⁷ Richard Lazarus and Susan Folkman, *Stress, appraisal, and coping*, Springer Publishing Company, 1984.

⁵⁸ Erving Goffman, *The Presentation of Self in Everyday Life*, Doubleday, 1959.

parts that fits it better for the conditions of its environment.”⁵⁹ Bateson depicts adaptation as a process of acquiring habits, which will result in automatized habits and routines.⁶⁰ Lave and March take on the doing and undergoing aspect of transition,⁶¹ whereas White refers to the compromise aspect in between doing and undergoing.⁶² Ashford and Taylor build their own adaptation definition on top of these, with a fuller understanding of adaptation in transition.

Adaptation is the process by which individuals learn, negotiate, enact, and maintain the behaviors appropriate to a given organizational environment. "Appropriate" indicates some degree of fit between the behaviors demanded by the environment and those produced by the individual such that the individual is able to achieve valued goals.⁶³

Appropriation requires a set of adaptation tasks, the first of which is learning and preparation. In this initial stage, the person first recognizes the transition; then identifies the demands, constraints, and opportunities of the environment, and finally learns how to assess the transition process. This preparation stage is followed by a decision-making one, in which the person negotiates with the conditions of environment and takes necessary steps to adjust her personality and behavior to them. The person will regulate these decisions based on the responses coming from the environment. In taking these steps, the self also deploys stress management tools in order to decrease possible emotional turndowns.⁶⁴

Regarding transitions between work roles, Nicholson introduces a ‘modes of adjustment’ theory.⁶⁵ He proposes that a person employs personal and role development strategies, based

⁵⁹ Retrieved from <http://www.merriamwebster.com/dictionary/adaptation?show=0&t=1299979156>

⁶⁰ Gregory Bateson, *Steps to an ecology of mind: Collected essays in anthropology*, University of Chicago Press, 1972.

⁶¹ C., Lave, & J. G. March, *An Introduction to Models in the Social Sciences*. New York, NY: Harper and Row, 1975.

⁶² RW White - *Strategies of adaptation: An attempt at systematic description*, Basic Books, 1974.

⁶³ S. J., Ashford, & M. S. Taylor, Adaptation to work transitions: An integrative approach. In G. R. Ferris & K. M. Rowland (Eds.), *Research in personnel and human resources management*, vol. 8. Greenwich, CT: JAI Press, 1990, p.1-39.

⁶⁴ Ashford and Taylor, Ibid.

⁶⁵ Nigel Nicholson, A Theory of Work Role Transitions, *Administrative Science Quarterly*, Vol. 29,

upon her prior occupations and motivational orientation, organizational/socialization processes, and role requirements. He identifies four modes of adaptation: replication, absorption, determination, and exploration. Replication and absorption have a person engaging in stable changes in the new environment, whereas determination and exploration involve more dynamic changes. The theory adheres to the notion that a person in transition will make identity changes and behavioral adaptations, with affective outcomes emerging out of these.

Cowan similarly posits that a person must alter themselves profoundly when confronted with a transition. He differentiates between inner and interpersonal views and suggests that a person must shift both in order to adapt to her changing context. A shift in inner views requires a person to undergo “a structural change shifting in the psychological sense of self, world-view and affect regulation.”⁶⁶ Changing interpersonal views requires a person to go “through role reorganization, developing personal competency, and the management of emotions in relationships with others.”⁶⁷ In other words, the transition experience requires a person to change herself, in both her inner and outer life, if she is to meet its challenges of the changing dimensions around her successfully.

These various adaptation approaches all are based upon the notion of a person actively perceiving the conditions of the transition experience, and then responding to them by acting out the persona she feels best fits the conditions. This almost places too much emphasis on the mind processes and neglects the interactions defining the relationship with the environment. One of the challenges of thinking in terms of mind processes during transitions is the simultaneous nature of transitions – as mentioned in the previous chapter, cascading transitions -- which may be happening at different magnitudes and levels at the same time. The mix of transitions, with its almost non-linear flow, requires more than processual thinking. The adaptation approach also

No. 2 (Jun., 1984), pp. 172-191.

⁶⁶ Philip A. Cowan, Eileen Mavis Hetherington, Family Transitions Advances, in *Family Research Social Structure and Aging*, Psychology Press, 1991.

⁶⁷ Cowan, *ibid*

does not pay sufficient attention to either emotional qualities or social interactions, leaving them both ambiguously defined and without a major role in the transition process. It also overdefines people as changeable – that there are few constants in a person, and that they can change between personas with ease – and does not recognize the unchangeable dimensions that often go along with a person – and may limit their ability to simply switch between personas. The major problem of this approach is that it glosses over the nuances of context, emotion, interactions and different enactments people perform in their roles.

Ethos – Virtue/Habit Approach

To better theorize the complexities of transition, it is necessary to consider more than the coping approach's unchanging traits and the adaptation approach's role enactments. Another concept of human character – one that emerges out of an interplay of 'virtues' and 'habits' – can be crucial in understanding how a person experiences a transition. Rather than simply applying one's traits to the transition experience, or deploying a persona appropriate to the context, an ethos-centered approach proposes that a person consults her virtues and adjusts her habits in order to achieve a harmonious transition. It accounts for the simultaneous unchanging (i.e., the virtues) and changing (i.e., the habits) nature of a person in transition.

The notion of character, as defined by McKeon, is a personal ethos, or "the structure of feelings, motives, and conceptualizations by which actions are caused and to which responsibility for their effects is imputed."⁶⁸ A transition challenges a person's character along the axes of her rational, emotional, and social stability. But it is a person's virtues that direct her towards a strategy of transition. Virtues are moral and intellectual dispositions, which constitute tendencies towards certain deliberative action. They are flexible guidelines, which a person can apply to her changing context and use as tools to determine her best course of action. These virtues are not inborn or fundamental, as the human nature approach would suggest. Rather, they exist in a

⁶⁸ Richard McKeon, Character and the Arts and Disciplines. *Ethics*, Vol. 78, No. 2 The University of Chicago Press. (Jan., 1968), pp. 109- 123.

symbiotic relationship with habits. A person establishes her moral virtues through practicing habits in situations. During a transition, the virtues she has established previously will guide her as to which old habits to preserve and which new ones to adopt in order to best harmonize the experience. In this approach, the person not only adapts to the environment (like in the adaptation-personal approach) but she makes the environment adapt to her ethos, and uses her character as a guide to how she will act in this new situation.

The Social Turn Approach

A final approach to character in transitions is one that prioritizes the influence of the specific social context in which the person exists. Unlike the previous three approaches, it emphasizes the role that surrounding communities have in shaping a person's experiences during a transition. It theorizes a person's character to be, at least in part, defined by her social environment. McKeon defines this social aspect of character as "tropos", or a 'turn of character', building off the biological concept of 'tropism', used to describe the 'turn' of an organism for growth.⁶⁹ In regards to character, tropos refers to the social turn of a person towards the common sense and values of their community. The person adjusts her virtues and behavior to what is acceptable to the community in which she lives, and the community imposes these guidelines as a way "to preserve and strengthen their values and to train members to perform the functions essential to their continuation and to their resistance to external dangers."⁷⁰ The social turn approach highlights this interplay between the individual and the community, and it recognizes that the character that she forms (and that she will employ in making transitions) will have grown out of a mutual growth process between the two.

In part, this social turn approach returns to the first approach, with its emphasis on unchanging traits. But here, it is the society, not the individual, which possesses unchanging, fundamental traits. The society offers some more permanence, in the form of the virtues and

⁶⁹ McKeon. *ibid*

⁷⁰ McKeon, *ibid*

habits it recommends to its members, to people who are more prone to being in flux. Over time, the society's guidelines may change, but it can be expected that this change will happen only slowly, and for the most part, their most fundamental traits will remain static.

To summarize, human character can be approached along four distinct themes: the inborn temperament of each person which helps them cope, their multiple personas enacted to adapt to changing circumstances, their unchanging virtues which guide their changing habits, and the social values which turn them towards certain mindsets and behavior. These four themes each hint at how people can negotiate harmonious transitions.

Looking at these four perspectives, several overarching principles about transition and character emerge. At the center of a transition, there is a person in a dialogical relationship with the environment. Transitions occur within this relationship, as the self's interactions with the environment fluctuate between the changing and the unchanging. As described in the previous chapter, this flux challenges the logistic, emotional, and social qualities of people's lives at differing magnitudes. To address these challenges, the ethic and social approaches offer the most holistic understanding of how character can help a person transition. Unlike the first two approaches, these two offer a better guide to account for the confusion of the experience and acknowledge a participatory role of the person in it. These approaches also give fuller regard to the nature (or inherent)-nurture (or constructed) aspects of character in transition. The temperament approach regards only the nature aspect, and the dramatic approach only the nurture aspect. But the ethical and social turn approaches consider character to result from the interplay of nature and nurture through interaction(s); a person, in these two approaches, is both changing and unchanging simultaneously. These two approaches also are more holistic in regards to the person; they provide for an individual's virtues and character traits, rather than just personality traits. A person contains both changing and unchanging dimensions; while her character has some

constancy, it also can evolve, in response to both factors internal to her and those external around her.

The notion of ‘character’ holds more promise for transition design than does the notion of ‘personality traits’. Character allows a person to devise strategies and interventions specific to her situation, based upon her core ethos. It is a dynamic, interactive process, rather than a static set of traits or an ever-changing set of personas. She can consult her virtues and beliefs, which will lead her to a certain course of action, that are both flexible to the changing situation and allegiant to her unchanging self. It fits with Bakhtin’s notion of ‘self as an event’. A person is in constant dialogue with herself, through spoken and unspoken utterances.⁷¹ Her character is formed as she asks herself what she ought to do, she responds to herself with her preferences (some of which may come from ‘the social turn’, some of which emerge from her own experience and worldviews), and she acts accordingly. This understanding of character is both more accurate in describing the complexities of an individual in transition, and more promising for designing a better transition experience.

Character in Design

Character does not exist only in humans. Design theory has illustrated that people perceive and construct character in products and environments as well. As Buchanan observed, “There is a deep reflexive relation between human character and the character of the human-made: character influences the formation of product and products influence the formation of character in individuals, institutions, and society.”⁷² Applied to the question of transitions, character facilitated through products opens a promising avenue for improving an individual’s transitional experience. Products can mediate the changing and unchanging qualities in a

⁷¹ Mikhail Bakhtin, *Toward a Philosophy of the Act*. Ed. Vadim Liapunov and Michael Holquist. Trans. Vadim Liapunov. Austin: University of Texas Press, 1993.

⁷² Richard Buchanan, Rhetoric Humanism and Design, in R. Buchanan, Victor Margolin (eds), *Discovering design: explorations in design studies*, 1995, p. 23-69

transition, by bringing character into the experience and encouraging the ‘self as event’ style of self-dialogue, consultation, and change to occur in the transition.

Then the question is, how precisely can ‘character’ work in products for transition design, that would intervene in a person’s situation to help them deal with the ‘changing’ and ‘unchanging’ clash in their life? In the following section, I will give examples for transitional products that currently exist, which carry with them unchanging or changing qualities that people can use during their transitions. These product examples will shift the inquiry to the potential of interactive products in a transitional situation. As this thesis hypothesizes later in detail, as the person and the product interact in their environment, character is defined in the situation, out of which the preferred state of well-being will emerge.

Products with Unchanging Qualities

Take, for example, the teddy bear. When used as a transitional object, it can provide tangibility to an individual undergoing a transition, offering her something physically stable with constancy -- or, unchanging qualities -- to hold on to while she is surrounded by unstable and changing circumstances. The teddy bear can engage a person, offering some of the guidance outlined in the previous section’s discussion of virtues, habits, and social values. It can encourage a better experience of transition, by providing physical, emotional and social support to the transitional individual through their reflexive relationship.

To give another example, consider a convertible car (Figure 6). Even though it has an unusual form and sculptural quality, one can read the manifestation of its character through its unchanging qualities, such as material, form, function, and details of hand-made craftsmanship. The social context where the car is placed completes its functional element regarding the experiential qualities. Similar to the teddy bear, this car is a typical transitional product, allowing an individual to transition from place A to place B, but it also allows a mid-age man a grip to hold on to during his transition to another life stage. In a way, it is the new unchanging for his changing body and roles. This is a relatively stable product – its elements, including its material

and form – remain stable throughout its lifespan. Its character is readily identifiable and not subject to dramatic change, unlike the man’s situation.



Figure 6: Red convertible car as transitional product for mid-age crisis man, (c) Brent Flanders, 2011

Products with Changing Character

There is new genre of products, namely interactive products, that shows a different character thread. Neither their material nor their form is readily apparent, and their character emerges more out of their interactions with the person and the environment than from their unchanging qualities. The indefinable and impermanent quality of interactive products could be interpreted as a problem – that they are too changing, too malleable, and too impermanent to provide stability to a person navigating the turmoil of a transition. But they also offer an opportunity for designers to sculpt transitional experiences, exactly because they can be designed as responsive, reactive and autonomous.

To better consider the changing ‘character’ in interactive products, I will use two examples as continuation of previous examples.



Figure 7: Teddy bear, © Simon Law 2007

Returning to the example of the teddy bear (Figure 7), if it was transformed from a traditional to an interactive product – with it talking back to its owner, encouraging her to be in dialogue with it, and connecting her to an online network of contacts, advice, and resources – it becomes a new kind of transitional product. The interactivity creates character in the transition situation. Take the example of Fuji teddy bear social robot⁷³. The bear is designed to make a thorough transition for both young children and the elderly. With its built-in camera and thirteen different sensors, it is designed to express more than 300 hundred gestures on an emotional space with axes of pleasure-displeasure and sleep and consciousness. As the user enters into dialogue

⁷³ <http://www.youtube.com/watch?v=6OAMENS6WQA>

with it (and the designer), and she receives talkback from it, the user becomes more aware of the choices that face her during the transition, can better consider her values or create new ones, can connect to others to receive support, and can make more conscious, deliberate actions. The talkback stimulates this awareness, and thereby gives the user more control over and support for her transition. Character emerges through the interactions, the user develops a relationship that brings out her virtues and changes her behavior accordingly.

Now, take the example of Zipcar (Figure 8). At its basic level, it is a car sharing service that provides car rentals to its members for a number of hours. But upon closer investigation, one can see that Zipcar is a leap from the traditional understanding of a car. People once owned a car; they drive their same car to many different contexts. The standard car doesn't allow the flexibility of adjusting to a particular context. Shortly put, the car is an unchanging transitional product. However, Zipcar changes the meaning of the car, and proposes a model that allows the individual using different cars for different contexts. Zipcar from this perspective is a changing transitional product. It allows the person to enact different roles, i.e., using a convertible for dating, using a truck for moving stuff, and a four-door for work. Note that, Zipcar still keeps the unchanging qualities of brand, the physicality of the cars and the driving from point A to B.

Both examples from traditional to the interactive products hint at the potential of products as mediators of changing and unchanging qualities in transitions. Some designers have succeeded in making transitional products that work, but from a more informed perspective, one can say:

- (1) There is a lack of theory in the design research field that would explain or guide designers while approaching transitions. They may be able to improvise successful transitional products, but it would be ideal to have a more thoughtful and considered framework to sensitize design process, and explicate the thought processes.

- (2) Some products have succeeded at facilitating transitions -- but not all have. There are many products that fail in their aim to resolve a transitional situation. Think of a cell phone or a social media product, which are not considerate to different life contexts.
- (3) There is so much potential in transitions that are not being harnessed. So many wicked transition problems exist -- whether it is with new immigrants to America, patients with a bad diagnosis, kids growing up, or beating traffic in the morning.



Figure 8: Zipcar, one of the new genre products with changing roles, Copyright (c) Zipcar, 2011

Character in Interactive Products Dialogue & Talk-Back

There is a need for a new design framework, which goes beyond the fuzzy understanding of character, and elaborates on how character is perceived and constructed in a transitional situation. The traditions of rhetorical inquiry prove useful here. Horst-Rittel's rhetoric approach focused on the dialogue in the design process. He conceived of a product as an argumentation, in which the designer converses with the stakeholders involved in the situation and contributes his own argument to it, in the form of the product.⁷⁴ In this approach, the product does not merely exist for users to implement; the product talks to and among the stakeholders. Donald Schön's reflexive approach adds to this understanding. It spotlights the dialogue that occurs between the designer and the product, throughout the design process and its use in the field. Schön observed that designs could talk back to the designer, that there is an ongoing conversation with each other.

[The designer] is in a kind of progressive relationship; as she goes along, she is making judgments. Sometimes, the designer's judgments have the intimacy of a conversational relationship, where she is getting some response back from the medium, she is seeing what is happening – what it is that she has created – and she is making judgments about it at that level. One form of judgment in which I'm particularly interested is the kind that I call backtalk, where you discover something totally unexpected: "Wow, what was that?" or "I don't understand this," or "This is different from what I thought it would be-but how interesting!" ... The designer's response may be "This is really puzzling," or "This outcome isn't what I expected-maybe there is something interesting going on here."⁷⁵

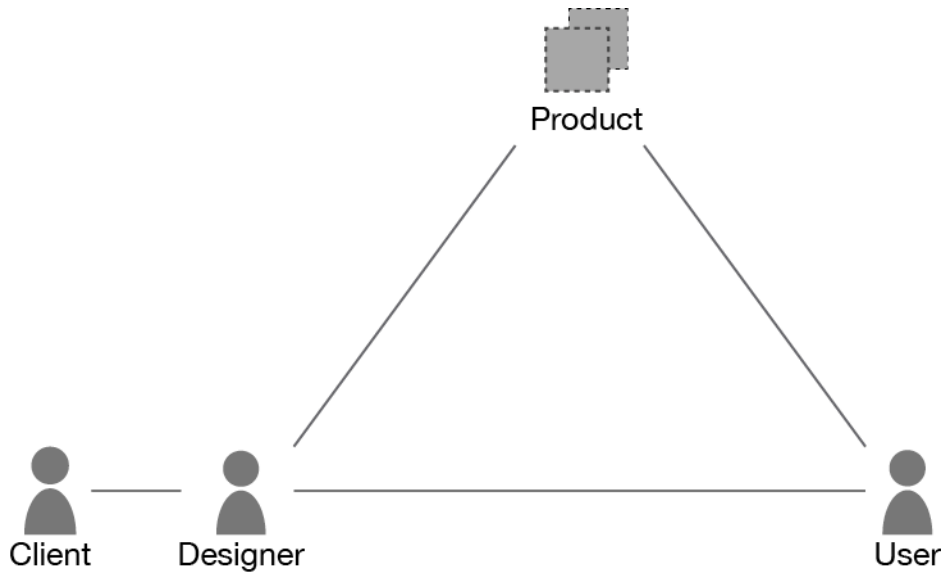
Designers enter into a reflexive dialogue with their product, with a feedback cycle growing between the two and pointing the designer towards a better kind of intervention. Moreover,

⁷⁴ Horst Rittel, Second Generation Design Methods, in N.Cross (Ed) *Developments in Design methodology*, Umi Research Pr. 1984.

⁷⁵ John Bennett, Reflective Conversation with Materials, An interview with Donald Schön by John Bennett, *In Bringing Design to Software*, Addison-Wesley, 1996.

Schön found that a product also could talk back to its users. He finds that the product is not merely what the designer has designed, but rather it emerges out of a “conversation with the users”. He sees that community of use takes the designed product as an argument to which they can respond, taking the designer’s message and transforming it into an improved form. Ideally, the designer will then respond to this transformation with a revision of their product, resulting in the best possible intervention.

This dialogue-focused understanding of the design process is informative for comprehending interactive products in transitions. Here the conversation between the designer, client, the user, and the product becomes even more central and explicit. In fact, these reflexive relations mean that the voices of the four not only communicate with each other but merge together into a unified whole. For example, on social media products, like YouTube, Flickr, and Wikipedia, the distinctions between the three roles in shaping the experience become blurry. The designer takes the lead in framing the product. But the experience takes shape by the audience and the designer, and the product shapes how this ongoing design occurs. All three are in dialogue with each other; the product talks back to both the designer and to the user. As such, the character of an interactive product exists in the interaction and in the dialogue, and its nature depends upon the characters of the user, the designer, and the product. *Interactive products blend unchanging and changing qualities in the situation.* YouTube, or ZipCar, or Starbucks service possess the character elements of the traditional design product, but they merge it with the human character of the designer and of the user. Then the character is defined in the situation through the interactions of the stakeholders. The designers of interactive products, then, must attend to the unchanging character in design while considering the changing elements in the situation.



**Figure 9: Designer as the facilitator of dialogue in the design process, (c) Fatih Kursat Ozenc 2011,
All Rights Reserved**

It is in the three-way dialogue – in this *talkback* – that the potential for interaction design exists. It does not exist in the product itself, but in the conversation and interaction between the designer, the client, the user, and the product, see Figure 9. For the designer of interactive products, talkback stands as both a methodological tool and a benchmark of success. By listening to the talkback from the products (both in the initial design phase and the testing one), the designer can make products that better fit to the user. More importantly, by creating products that generate talkback with the user, the designer can foster better experiences (like, in the context of this thesis, harmonious transitions). If an interactive product is a co-creative endeavor, it gives the user more direction. In traditional design, the user possesses the agency, and the product possesses a passive agency. But with interactive products, the product exerts a dynamic agency; it enters into dialogue with the user and the designer and talks back to both of them. This dialogue depends on the guidance of the designer's judgment, how to turn problematic states to preferred ones. Preferred state is situated, depending on the variables of the situation.

Designer needs to consider the variables: values or valuelessness, agency (increase/decrease), and awareness /submissiveness of the self, either changing, unchanging or harmonizing them is the goal, either stress or arousal is the motivation/challenge

By generating and participating in this dialogue, the well-designed product can facilitate a challenging experience, like that of transition. It offers a way to reinforce and build character in the person undergoing a transition. As the person dialogues with the product and receives talkback from it, she can better navigate her transition. Ideally, the product will stimulate her virtue-action process of character, by encouraging her to changing and unchanging values and priorities as she chooses how to act. It can also feed into the “social turn” process, supporting her with the resources of her surrounding communities as she undergoes the transition. With products that can talk back, the transition experience can be less problematic. A person will have more awareness of the transition she is in, more social guidance and support to navigate it, and more fidelity to her own values throughout it.

Thus, for designers with a primary aim of harmonizing transition experiences, their secondary goal must be to build products that provide talkback. The character that emerges out of the talkback is the thing that can provide a person the guidance and stability she needs to steer through her transition. Moreover, the product must make implicit transitions explicit, ensuring the person is more fully conscious of the changes happening, or the unchanging dimensions she wants to change, so that she can make more deliberate choices about them. The next chapter then considers how, practically, this character-in-talkback can be designed. The chapter identifies and explains a new methodology framework – centered on the modes of transitions, which offers the means

by which designers can generate interactive products that talk back and sculpt better transitions.

Chapter III: Modes of Transitions

Having presented the wicked design problem of transitions, and then having laid out the objectives of the designer in building products to address it, now the question is ‘how’. How can designers harmonize transitions? How can they create interactive products that will provide talkback to their users, bringing human character, social guidance, and stability to the situation? This chapter provides practical frameworks and methodologies to explain the ‘how’.

I. Defining the Modes of Transition

In traditional design, a designer experiments with physical materials to create a product. But the designer of interactive products works in a different way, which is concerned more with the immaterial⁷⁶ than the material. As explained in the previous chapter, the designer aims to build constructive dialogues between the product, the user, and the designer, rather than building the product alone. With interaction design, the designer’s material becomes actions-interactions, and his form becomes behaviors. With this shift in mind, put simply, *the designer builds frames for experiences out of actions.*

⁷⁶ When designing novel GUI controls, interaction designers are challenged by the “immaterial” materiality of the digital domain; they lack tools that effectively support a reflecting conversation with the material of software as they attempt to conceive, refine, and communicate their ideas. To investigate this situation, I, and my colleagues at Carnegie Mellon University, conducted two participatory design workshops. In the first workshop, focused on conceiving, we observed that designers want to invent controls by exploring gestures, context, and examples. In the second workshop, on refining and communicating, designers proposed tools that could refine movement, document context through usage scenarios, and support the use of examples. In this workshop they struggled to effectively communicate their ideas for developers because their ideas had not been fully explored. In reflecting on this struggle, we began to see an opportunity for the output of a design tool to be a boundary object that would allow for an ongoing conversation between the design and the material of software, in which the developer acts as a mediator for software. More can be read from the paper itself, Fatih Kursat Ozenc, Miso Kim, John Zimmerman, Stephen Oney (2010), How to support Designers in Getting hold of the Immaterial Material of Software, 28th ACM Conference on Human Factors in Computing Systems (CHI2010).

To build frames for experience, the designer needs to form a plot. A plot is a composition of actions that are causally and structurally related to one with other.⁷⁷ Plot brings unity to an experience and emergent qualities from actions. To form causal and structural actions to form a plot, I propose four ways, or modes, of actions: routine, performance, ritual, and narrative. All the modes address the challenges that are identified in the first chapter, namely the changing and unchanging in body, roles, habits, and environments. They are interwoven in layers, from routine to narrative. Every experience is composed of several or all of the modes in action, and together they provide frames to compose an experience for harmonious transitions. I will first introduce each mode of actions, with a preliminary discussion of their importance for transition experiences, and differentiate their distinct qualities, as well as their inter-relations.

Transition Routines: A routine is a mechanical or habitual performance of an established procedure.⁷⁸ Prior research shows us that routines are automated actions that people unconsciously perform; they are unremarkable in character, the glue of everyday life.⁷⁹ Routines are shaped creatively; they can be social; and they can become predictable.⁸⁰ A routine's relationship with the other qualities is a crucial one. In her routines, an individual can perform her roles. And routines can be the building blocks of a person's narrative and ritual, giving her material actions with which to view and self-narrate herself. In a transitional situation, routine is the first lens to wear, it is the plot for habits and automated actions; it is unchanging, it provides order for the person in a transitional situation. It is either challenged with changing situation (moving to a new city), or needs to be challenged with changing interventions (acquiring a new habit) Routines are the materials to form character in situation.

⁷⁷ Brenda Laurel, *Computers as Theatres*, Addison-Wesley Longman Publishing Co., Inc. 1993.

⁷⁸ Routine, retrieved from <http://www.merriam-webster.com/dictionary/routine>

⁷⁹ Peter Tolmie, Unremarkable computing In Proc. of CHI 2002, ACM, 2002, p.399-406.

⁸⁰ Ron Wakkary, L.Maestri, The resourcefulness of everyday design, in Proceedings of Creativity and Cognition 2007, 2007, p. 163-172.

Role Performances: Performance by definition means the execution of an action. For human experience, it is the self's enactment of roles in various contexts. It may be conscious or habitual, depending on the role and the situation. Erving Goffman defines performance as "the activity of an individual occurring during a period marked by his continuous presence before a particular set of observers and which has some influence on the observers."⁸¹ Suchman interprets these performance situations to be ones in which a person's actions are highly contingent, founded on local interactions with her environment and based on her improvisations.⁸² This notion grows out of the concept of 'personas' in Chapter 2; a person performs a chosen role depending on her assessment of her situation. A performance can occur through routine or ritual acts, and it can supply material through which a person forms her narrative. It is the plot for role enactments and improvisation; it is changing, it provides flexibility in a transitional situation. It gives the improvisation aspect in a changing situation; it gives the role enactment according to a script and audience in an unchanging situation. Performances are manifested through personas in design process, helping designer to foresee enactment possibilities in scenarios. Performances are the process or set of techniques of building character in a situation.

Rituals: A ritual is an act, similar to that of routine, but imbued with meaning⁸³. It is a habitual behavior, of which a person is conscious – perhaps more conscious than any

⁸¹ Erving Goffman, *The Presentation of Self in Everyday Life*. Doubleday, Garden City, New York, 1959

⁸² Lucy A. Suchman, *Human machine reconfigurations, 2nd edition of Plans and situated actions*. Cambridge University Press, 2007.

⁸³ Ritual is an overarching theme studied widely in social science fields. Catherine Bell suggests that there are three main schools of thoughts in ritual scholarship: those looking at the *origins and essence, social function and structure*, and finally *cultural meanings, symbols and practice*⁸³. The origins and essence school, as its name implies, inquires into whether myth or ritual is the essence for religion and culture, in its particularity, bringing evolutionary, sociological and psychological approaches to ritual. The social function and structure school inquires into the purpose and function of the ritual. The last school of thought emphasizes the meaning making aspect of ritual and how people create meaning while embodying rituals. Rituals can be communal, when they act as a "mechanism of mutually focused emotion and attention producing a momentarily shared reality, which thereby generates solidarity and

other act, that has a distinct meaning for a person's sense of herself – whether it be in a personal, social, moral or other sense. More precisely, rituals are expressive and symbolic activities composed of several sets of performances, which happen in a repetitive manner.⁸⁴ As stated before, rituals can grow out of routines and they can be a location of performances. They are key components in the narrative process; since they are such conscious and meaningful acts, they provide especially strong material with which people can narrate their lives. Ritual is the plot for meaning making, it is both changing and unchanging, and it provides a liminal space for harmonizing changing and unchanging. Think of an interaction ritual, each time the person greets someone; the ritual is changing because the context is different, but the ritual is also unchanging, since it carries the same script and enactments during the performance. Or think of a graduation ceremony. During the ritual the person is still a student, and unchanging by following the rules of student conduct, but the person is also a graduate now and represents the changing. Ritual provides the focused interaction, sweet spots and ritual moments for engagement. They can be manifested through scenarios. Rituals are forms/behaviors of character in a situation.

Life Narrative: Narrative means narration of a story, or the representation in art of an event or story. In a transitional situation, it can occur in one's inner dialogue, her dialogue with other people, or in her interactions. Every person, whether she is conscious of it, assembles her experiences and thoughts into a narrative. Ricoeur's idea of 'emplotment' details this notion, explaining that people plot their routines, performances,

symbols of group membership.”⁸³ Levy classifies rituals into spiritual, cultural, group, individual, and biological types.⁸³ Rituals differ from routines in their meaning-making aspects. Family rituals, for instance, encourage engaging in family activities and enhancing personal identity.⁸³ Fiese et. al. found that the meaningful aspect of family rituals is related to adolescent identity⁸³ and marital satisfaction during early parenthood,⁸³ whereas the routine practice alone is not related to the identity and marital satisfaction directly.

⁸⁴ W. D. Rook, (1985) Ritual Dimension of Consumer Behavior Research, *Journal of Consumer Research*, 12, p. 251-264.

and rituals to generate unified wholes.⁸⁵ McAdams's identity theory also finds that a person makes sense of her life and constructs her identity by means of composing her life-story.⁸⁶ Narrative operates at the highest level of the four modes; a person's self-narrative may guide her routine, ritual and performance acts, and in turn these three feed into her story of herself. Life-narrative is the plot for identity/character construction in a dynamic manner. An individual can harmonize the changing and unchanging situations based on her values, and agency variables. Think of a new graduate's life story in a new job situation. She carries her unchanging lived experiences in college while trying to construct changing life-narrative within the constraints and possibilities of her new situation. Life-narrative is the functional element of character in a transitional situation. It helps the individual to reconfigure/realign herself based on the outcome of the transition.

Before elaborating on the modes of transition framework in transition experiences, a few further words are necessary to craft how the modes connect to each other (Figure 8). People's actions in their daily life define patterns in time through repetition. Repetition helps people, creating certain steps and procedure in their experiences. In their social context, routines can provide social order, helping people to find stability and navigate what is expected of them. Routines oftentimes are transparent, and only can become opaque when there is a breakdown. To coordinate and order routines, people need a degree of planning, since "the emergent properties of action mean that it is not predetermined but neither is it random."⁸⁷ Lucy Suchman suggests the term situated-action "to explicate the relationship between structures of action and the resources and constraints afforded by material and social circumstances."⁸⁸ Inquiring into the structures of action, she suggests looking at the contingency and unexpectedness of situations. Every situation

⁸⁵ Paul Ricoeur, *Time and Narrative*, University of Chicago Press, 1990.

⁸⁶ Dan P. McAdams (Editor), Ruthellen Josselson (Editor), Amia Lieblich (Editor) *Turns in the Road: Narrative studies of Lives in Transition*, American Psychological Association (APA). 2001.

⁸⁷ Lucy A. Suchman, *Human machine reconfigurations, 2nd edition of Plans and situated actions*. Cambridge University Press. 2007.

⁸⁸ Suchman, *ibid*.

has its own dynamics, affecting people's actions in certain ways. For each situation, whether at home or in the office environment, people act differently, performing different roles. In their performance, people use language and enactments to foster a ‘mutual intelligibility’ that grounds the common sense of their actions.

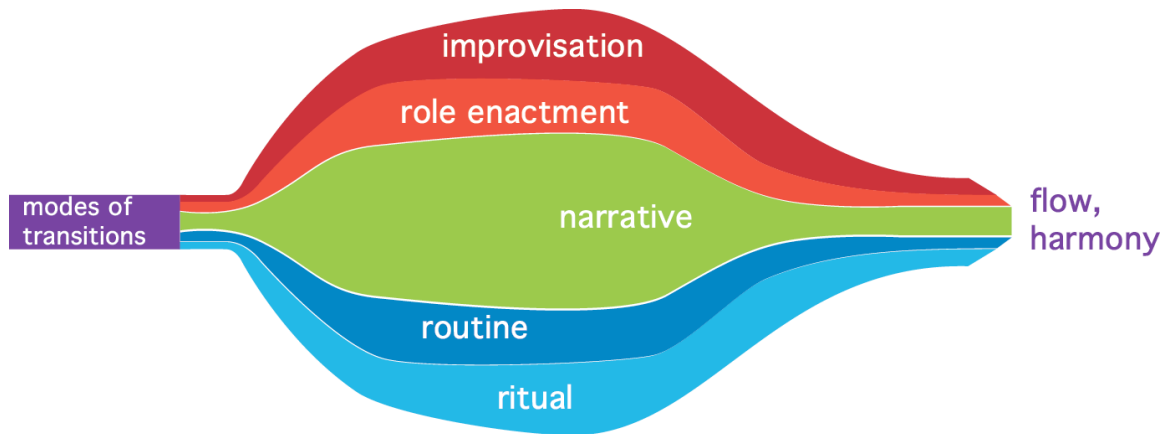


Figure 10: Modes are layered paths to the transitional experiences. Routine mode is the layer of order; performance is the layer of enactment; ritual is the layer for engagement; and narrative is the layer of emplotment. (c) Fatih Kursat Ozenc 2011, All Rights Reserved

Over time people carve their own meanings from the mutual intelligibility. This happens through rituals. Rituals, either at micro or macro level, help people to converge into continuity. The term ‘interaction ritual’ is good to cover both the micro and macro levels⁸⁹. To form a social ritual, participants need to have co-presence, and share a mutual focus of attention. Once people have these in common, their engagement creates an emotional energy and solidarity among the community. A narrative as the overarching plot unfolds itself in two kinds of temporalities: a chronological one and a historical one. Routines, rituals, and performances occur in the chronological temporality. People, in their meaning-making endeavor, plot routines, rituals, and

⁸⁹ Termed first coined by Goffman, and extended by Collins.

performances, to form a unity as a historical temporality of their selves. This happens over time through repetition. Historicity offers the unity and continuity of past, present and future, helping the individual (or a community) to form life-stories and identities.

II. The Structure of Modes of Transitions

The four modes of routine, ritual, performance and narrative constitute plots for harmonious transitions (see Figure 10). Each mode is a path through which people form their experiences – and through which designers and their products can provide frames and structure. Taken together, the four modes offer opportunities to build transitional experiences with character and talkback.

The modes of transitions framework is structured on an action-centered conception of design. It focuses on how the self acts – with agency – to compose a harmonious transition experience.⁹⁰ As Goffman stated:

Social frameworks provide background understanding for events that incorporate the will, aim, and controlling effort of intelligence, a live agency, and the chief one being the human being...what it does can be described as "guided doings". These doings subject the doer to "standards", to social appraisal of his action based on its honesty, efficiency, economy, safety, elegance, tactfulness, good taste, and so forth. A serial management of consequentiality is sustained, that is, continuous corrective control, becoming most apparent when action is unexpectedly blocked or deflected and special compensatory effort is required. Motive and intent are involved, and their imputation helps select which of the various social frameworks of understanding is to be applied⁹¹.

The four modes offer frames for “guided doings” to balance the level of agency. Ideally, the designer can use these themes of action to make a person aware of – and in deliberate control of her – transition. The process of agency requires several steps: awareness, character-in-action, talkback, and strategy making. In the process of agency, products first must develop awareness

⁹⁰ To unveil the dramatic structure in people’s motives, Kenneth Burke suggests a pentad, five key terms, act, agent, agency, scene, and purpose in his seminal piece, *Grammar of Motives*, University of California Press, 1969.

⁹¹ Erving Goffman, *Frame Analysis: An Essay on Organization of Experience*, Northeastern, 1986.

of the transition in the user. The product helps make the transition explicit to the self. In this awareness, the self can then be more sensitive to the situation around her. She can recognize how her virtues and priorities apply to the transition, and consult her communities for further guidance. In the case where she is not aware of her values or priorities, design can guide the person in that awareness as well. By using the modes-driven product, the individual talks back to the transitional situation with her character. This dialogue gives way to strategies. The self gradually builds and acts out her own strategies,⁹² using the resources offered by the product and the modes. In this way, the self gains agency to compose her own harmonious transition. She becomes more aware of her transition, and engages in talkback dialogues with the product and her environment, which in turn encourages her character and strategy making. This offers an action-centric model of transition design, in which design products offer a means of providing greater agency to the self.

Transition Design Strategies & Interventions

In part, the Modes of Transition framework grows out the previous transitions research. A comprehensive framing of transitions identified two means by which transitions can be facilitated: strategies and interventions.⁹³ Strategies can be defined as a person's courses of actions that deploy her flexibility and resources to successfully maneuver in a transition. Strategy as a tool has been used in military, economics, business, social science and sports and games contexts in predicting the unpredictability of future situations.⁹⁴ Goffman bridges the economics and social science approaches while he investigates the social interactions. He suggests the term

⁹² Strategies can be defined as a person's high-level actions that deploy her flexibility and resources to successfully maneuver in a transition.

⁹³ L. V., Allen, A Role Theoretical Perspective on Transitional Processes, In Vernon, L., Allen, E. Van de Vliert (Eds) *Role transitions: explorations and explanations*, Plenum Press, 1982.

⁹⁴ In military context, strategy is "the art of distributing, and applying military means to fulfill ends of policy." In economics, it is the pattern of objectives, purposes, or goals and major policies and plans for achieving these goals, stated in such a way as to define what business the company is in or is to be in and the kind of company it is or is to be." (Robert F., Grattan, *Strategy Process: A military-business comparison*, Palgrave Macmillan, 2002).

‘strategic interaction,’ which he uses while magnifying the nature of social interactions. His focus is on marginal situations such as emergencies or games, but the discussion of strategies can be bridged to transition experiences. From the self’s perspective, strategic interaction unfolds itself consecutively, along a similar path as that described in the previous paragraph. The self begins with an assessment of constraints; makes decisions among the choices that are available; initiates a course of action (or moves) based on the decision; and receives the payoffs for the moves.⁹⁵

Greiner and Cummings witness a similar unfolding of strategy making in a business context. In the early conception, strategy includes setting objectives and goals, analyzing the situation, using judgments, and carrying out action. Strategies are contextual, and each strategy is unique and needs specific consideration to fit the situations. Positioning the agent in sweet spots and looking for capabilities and resources are critical to the formation of strategies. Then they suggest dynamic strategy making, which involves an ongoing dialogue between key stakeholders in shaping future actions⁹⁶. This dynamic strategy making is similar to character harmonizing the changing and unchanging aspects, in the sense that it can be both formed in a structured unchanging situation, and also in an open and changing situation. Strategies, simply put, are processes that engage an agent through the awareness (of the situation), judgment (making decisions based on character), moves and payoffs (talkbacks to the situation). They are guided doings and orient the agent in the turmoil of transitions.

Interventions, on the other hand, are the planned set of activities executed by outsiders to improve the emotional and social functioning of an individual or social group. Some previously studied strategies and interventions include rituals, anticipatory roles, transitional roles, role-

⁹⁵ Erving Goffman, borrowing ideas from game theory, defines strategic interactions consisting of four steps assessment, judgment, moves, and payoff. Each step is a way to enact certain roles in front of certain audience and the goal is to reach at harmony and integrity (character). Erving Goffman, *Interaction Rituals: Essays on Face-to-Face behavior*, Pantheon Books, New York, 1967).

⁹⁶ Larry E. Greiner and Thomas G. Cummings, *Dynamic Strategy-Making A Real-time Approach for the 21st Century Leader*, Jossey-Bass, 2009.

playing, social support mechanisms, therapy, education direct training, and mutual help groups.⁹⁷

Both of the notions support the framework's action-centric approach. They spotlight that a person can facilitate her own transition, especially with products to orient and guide them.

Timing Transition Design

'When' such a design intervention should occur in a transition is another question.

Growing out of a dramatic understanding of them, transition experiences are not single occurrences. Van de Vliert proposed that transitions proceed in five consecutive stages: antecedent conditions, role transition, role strain, reactions, and consequences.⁹⁸ This characterization of transitions as episodic stages might be useful up to a point; however, transitions might happen in more simultaneous ways. To better conceive the organizational qualities of transitions, dramatic notions of plot – the beginning, middle and end (or the prior, during and after) – might give better framings of the transitions. In addressing transitions, the focus can vary according to the plot. An intervention could aim to change the antecedent situation(s); facilitate the transitions during the beginning, middle and end; reduce the role and environmental stress; alter the reactions; or optimize the consequences.⁹⁹ Among these approaches, the facilitation of transitions during the beginning, middle and end fits to the modes of transitions framework.

With this harmony between approaches, I adapt Van de Vliert's use of strategies and interventions to the discussion of how the modes of transitions facilitate people's transitions with talkback and character. Put simply, the modes of transitions function as harmonizing plots to guide a person through the changing-unchanging experiences. The choice of which plot will help the person go through the transition depends on her specific conditions. She can build her own strategies based on her situation, using a combination of the action frames. Generally, though, we

⁹⁷ L. V., Allen A Role Theoretical Perspective on Transitional Processes, In Vernon, L., Allen, E. Van de Vliert (Eds) *Role transitions: explorations and explanations*, Plenum Press, 1982.

⁹⁸ Allen, Ibid.

⁹⁹ Allen, Ibid.

can expect routine and performance will open up talkback in the micro level transitions, whereas narrative and ritual will do so in the macro level transitions. Routine, performance and ritual have more weight prior to and during the transitions. Narrative has more weight while the transition resolves.

III. The Modes of Transition as Design Perspective

Returning to the question of ‘how’, these four frames provide a *design methodology* for the designer in a transition situation. In the analysis phase, the designer investigates the experience as routine, performance, ritual, and narratives, and identifies the emerging themes. Once the analysis phase is completed, the framework functions as design strategies in the conceiving, refinement, and evaluation phases— both for the designer and for the user. It can guide scenario generation for design exploration and can situate the concept design for design refinement. For the design exploration, scenarios function as part of investigation, whereas in the refinement and evaluation, they function as part of the resolution. The evaluation part is when people respond to the proposed scenarios and begin the conversation. The framework at this point facilitates the strategy making, helping people to nurture character in the situation for habitual change.

The ‘modes of transition’ framework offers two main tools for designers: an analytic one and a synthetic one. Just as traditional design’s four causal categories offer means for comprehending and intervening in a situation, the four modes provide similar tools within the design process. As a tool for analysis, the modes act as principles for understanding any given transitional context. As tools for synthesis, the modes act as strategies of composition, to frame both methods and products. Put shortly, the modes of transition supply a designer both *ways of understanding* and *ways of composing*. See Table 2.

| Ways of Understanding | Ways of Composing | | | |
|------------------------------|--|---|---|--|
| Transition Products | Situation analysis Identifying the issues around the transitions | Conceiving Modes of routine, performance, and ritual as strategies for composing transition scenarios | Refinement Modes of routine, performance, and ritual as strategies to situate the proposed product in transitional situations | Evaluation Modes of transitions as strategies to initiate talkback in situations |

Table 2, Modes of Transition process, giving direction, scope and depth to the design

Ways of Understanding

As a way of understanding, the modes of transition offer a framework of principles, themes, and categories to guide designers. Each of the four modes stands as a fundamental, overarching element of the transition experience. From each mode category, other, specific types of experience will follow, depending on the person's context. Routine, ritual, performance, and narrative offer the designer a basic map of the transition experience.

The framework also suggests principles with to approach the problem of transitions. At the center of a transition, there is an experiencing self in a dialogical relationship with the environment. The experience occurs with a person swinging between changing and unchanging factors. Her perceptions of herself, her interactions with the environment, her emotions and reasons – all are in flux. And they are in flux at both immediate and long-term time intervals. This state of flux affects the logistic, emotional, and social qualities of people's lives at differing magnitudes.

The framework offers a path through these challenges and potential risks of transitions. Its modes – if put to use through well-designed strategies and interventions – can promote character and harmony in the experience. The habitual (narrative) and social (ritual) modes of transitions offer a holistic grasp on the rational, emotional and social dynamics in transitions.

Routine and performance provide the means to understand immediate interactions, whereas the narrative and ritual provide the means for long-term interactions.

Understanding Existing Transition Products

To demonstrate the framework as a ‘way of understanding’, existing interactive products have been studied to reveal the relevance of the four modes in transition design. It is important to note that these products and services are not categorized currently as ‘transition products’, but once we look at them through the lens of this thesis’ framework, it is clear that they should be. They aim to improve spatial, social role, life-stage and migration transitions, and they are built with an eye towards the four modes. Designers have been attempting to address all four of these transition problems, and they have been prioritizing routine, ritual, performance, and narratives to foster better experiences. In some products, changing, and in some others, unchanging qualities of transitions are the focus of attention. Similarly, some products are situated in pre-transitional interactions, whereas some others are during or post-transitional interactions. Bringing a critical lens over these products, one can discover drawbacks as well as the potential of the existing products.

1. Routine and Performance Products

In the area of spatial transitions, a whole new ecology of products has blossomed recently. It has emerged out of the marriage between advancing transportation and communication product domains. These products help people *plan*, *coordinate* and *use* the transportation services with the support of communication products. In most of these products, the focus is on the logistics of the transportation (i.e., helping people find matches regarding where, when, and with whom to go).

Travel planning, ridesharing, and car-sharing websites are some of the branches of this new generation of products. From a Modes of Transitions perspective, these products usually are situated in the pre-transitional phase, where the individual hasn’t encountered a spatial transition.

In their framing, these products address routine and performance frames; however, they do need to bring narrative and ritual frames to balance unchanging factors with the changing in a transitional situation.

Think of Orbitz, Kayak, Expedia, and Airfare for travel planning and arrangement products. In these travel planning websites, one challenge people encounter is the gap between changing and the unchanging factors in a transitional situation. Usually these websites provide maximum flexibility to the user, from selecting the airlines to seat preferences; however, at the end of all complicated interactions, what user really wants an unchanging factor of travelling from A to B. Since these websites are only interfaces to the actual airline, hotel, or car companies, they are lacking unchanging qualities by themselves. This lack of an unchanging brand value makes these websites vulnerable as means of character. With plethora of alternative website options, people can easily shift to other products. From people's point of view, the websites also posit a problem of unchanging quality of accountability. Once the arrangements are made, and the person purchased the travel option, usually these websites do not give service support, since they're not the actual service company. Once users encounter a problem during the spatial transition, such as a delay in their flight, it is mere frustration for the person, the company usually refuses to support if the ticket is purchased from a third-party company or if there is a mix-match of airlines. The person has been left unattended and left to her destiny in the midst of turmoil. What these websites lack from the modes perspective is the unchanging brand value and accountability, undermining during- and post-transitional phases in the transition, and relying only on the changing qualities. What these products can do to build unchanging qualities and brand value is to invest in new meanings, through ritual and scenarios-narrative frames in the context of traveling. Instead of being a mere travelling planning tool, they can provide narrative frames for people to build longing relationships with the product.

Now let's shift our focus to ridesharing websites of another breed of routine & performance products. Goose-networks¹⁰⁰ provide a commute trip planner tool, with flexibility to include public transportation and shuttles. Zimride¹⁰¹ does the same in campus environments, Nuride¹⁰² provides reward incentives to those using alternative ways of commuting, and Goloco¹⁰³ facilitates ridesharing among groups attending a specific event together. In these products, there are several challenges: addressing unchanging/convenience of the solo driving and sharing rides with other people. To address both challenges, these products situate their services inside a company, or campus setting. This gives them two things, first through an unchanging database; they can reach at an audience. By creating a connection through affiliation, they also can overcome the stranger barrier for ridesharing. What these products are missing from the Modes of Transitions perspective is narrative and ritual frames to balance the changing and unchanging factors. Given the unchanging solo driving habit, a transitional product should give a rich set of changing scenarios-of-use so that the individual can find ways to build seeds for new routines, so to speak, new unchanging situations.

Given these examples, several observations can be drawn. These interactive products all relate back to routines and performances as the means by which users construct their experience. The user can deploy ridesharing products as a means to establish commute routines, or travel planning websites allow the individual to perform certain roles. The routines and performances mean experience is built through the planning, coordinating and repetitive use of these interactive products.¹⁰⁴ This helps the transitioning person to build order in everyday life. The performative manner of an experience is the mechanism that enables a person to enact different roles and scripts in order to form consistency among routines and rituals. People use routine and

¹⁰⁰ Goosenetworks (n.d.) Retrieved January 18, 2010, from the <http://www.goosenetworks.com>

¹⁰¹ Zimride. (n.d.). Retrieved January 18, 2010, from the <http://www.zimride.com/>

¹⁰² Nuride.(n.d.). Retrieved January 18, 2010, from http://nuride.com/nuride/public/sneak_peek.jsp

¹⁰³ Goloco. (n.d.). Retrieved January 18, 2010, from <http://goloco.org/greetings/guest>

¹⁰⁴ Ron Wakkary, L. Maestri, L, The resourcefulness of everyday design, in *Proceedings of Creativity and Cognition* 2007, 2007, p. 163-172.

performance constructs in a dialogical relationship and in experimental ways. For instance, once the person finds resources for building routines, she can practice it with small performances. If the performances fit to the context of the transition, the person gradually builds the routines and performances together to form experiences. The challenge for routine and performance products is then to provide narrative and ritual frames to turn the changing enactments and improvisations to new unchanging, reliable routines and habits. These products most immediately address the spatial transition challenge, but if they are developed giving thought on changing and unchanging dynamic, they could also be a building block in another, more macro-transition, like that of life-style or life-stage.

2. *Ritual Products*

Another ecology of transition products is being built for people who are in the midst of a life-stage or role transition. *Ritual* products have become a particularly prominent branch of this ecology, offering support and guidance for people who are experiencing (or trying to instigate) dramatic change in their lives. These products range from those that try to facilitate a persons' shift towards healthier ways of living to those that ease the difficulties of a person who has suffered the loss of a loved one. All of them aim to bring a sense of well-being to the person in transition, specifically by deploying the ritual and narrative modes. Either challenged by an unchanging, or changing dimension, these products are supposed to give a liminal space so that the individual can balance the changing and unchanging accordingly.

Direct-life is one such care product. It is a personal care service that can track people's health and exercise records, to help them build a healthier lifestyle. This service works over the long-term and is highly interactive. It talks back to its user, reminding her about personal goals and priorities, evaluating performance, and spurning on further change. It establishes routines and rituals, and encourages a person to narrate her own change into a healthier lifestyle. Other

similar services include Emwave¹⁰⁵ and Helicor Stress Eraser¹⁰⁶. They operate on a shorter term, aiming to decrease stress by having the user reflect on her breathing. They have a person record her breathing patterns before her bedtime, show her irregularities or problems, and suggest her to become more attuned to her health. Again, the products provide talkback to the user through use, while also establishing routines and rituals for her to follow, in order to guide her through the transition. This genre of products addresses the challenge of unchanging with the proposals for new changing situations. They do this by providing means for ritual moments and personal reflections. What they might be missing from the MOTs perspective is the social turn aspect, which is crucial to build character and wellbeing in life-style transitions.

There are also care products that focus on unintentional and dramatic changes, such as the death of a loved one. *Good Grief Center*¹⁰⁷ is a bereavement service located in Pittsburgh, which gives personal and social support for people who have experienced the recent death of someone close to them. For personal care, Good Grief Center provides care packages that include a handcrafted journal, a music and meditation CD, and good grief cards that supply reflection pieces (Figure 11). For social care, they provide social support groups and organize workshops and meditation sessions for people who are in transition. There are variations to this service, like the Center for Loss and Life Style Transitions¹⁰⁸, The Compassionate Friends¹⁰⁹, and Healing Hearts for Bereaved Parents¹¹⁰.

¹⁰⁵ Emwave.(n.d.). Retrieved January 18, 2010, from <http://emwave.com/>

¹⁰⁶ *Helicor Stress Eraser*. (n.d.). Retrieved January 18, 2010, from <http://stresseraser.com/>

¹⁰⁷ Good Grief Center. (n.d.). Retrieved January 18, 2010, from Retrieved from <http://www.goodgriefcenter.com/>

¹⁰⁸ Center for Loss. (n.d.). Retrieved January 18, 2010, from <http://www.centerforloss.com/>

¹⁰⁹ Compassionate Friends. (n.d.). Retrieved January 18, 2010, from <http://www.compassionatefriends.org/home.aspx>

¹¹⁰ Healing Hearts for Bereaved Parents. (n.d.). Retrieved January 18, 2010, from <http://www.healingheart.net/>



**Figure 11: Good-Grief Center helping people in bereavement through ritual frames. Copyright ©
2006 Good Grief Center for Bereavement**

These transitional services use narrative and ritual modes to steer a person through the emotional turmoil of the experience. It has the people express themselves, order their thoughts and memories, and compose a narrative of the experience, either through communications with a social group or writing products. The services try to build these narrations into rituals, which the person will regularly participate in, to transform their passive feelings into activities. With these modes, the services help to make the transition more explicit, and to put the person more in control of their emotions by increased awareness, narration, and interaction.

3. Narrative Products

A third and final example of new genre of transition products concern community building. These products are intended for people going through long-term, life-stage transitions. They take the priorities of care products to another level, encouraging people not only to interact but also to participate in the means for change. They achieve this through expression, with the ritual of narration allowing them to participate and become part of the community, and work through their transition with a sense of well-being. It brings the “social-turn,” discussed in Chapter 2, to bear on the transition. The community’s values and experiences can inform the individual’s, providing

her with examples, advice, and guiding principles. In other words, they use the modes of transition to build character into the experience.

The *I'm Too Young For This! Cancer Foundation* (i[2]y) can be characterized as a community product that positions itself as an advocacy organization that serves the next generation of cancer survivors and their caregivers in their late teens, 20s, and 30s (Figure 12). i[(2)]y sets its mission as “empowering young adults affected by cancer, by reducing late detection, ending isolation, improving quality of life, and providing meaningful survivorship. i[(2)]y uses music, the arts and social media to organize, energize, mobilize and activate young adults to the cause, build community, end stigma and make it hip to talk openly about stupid cancer.”¹¹¹ i[2]y takes the narrative medium with a broader perspective and use these media as functional frames for individuals and for the community.

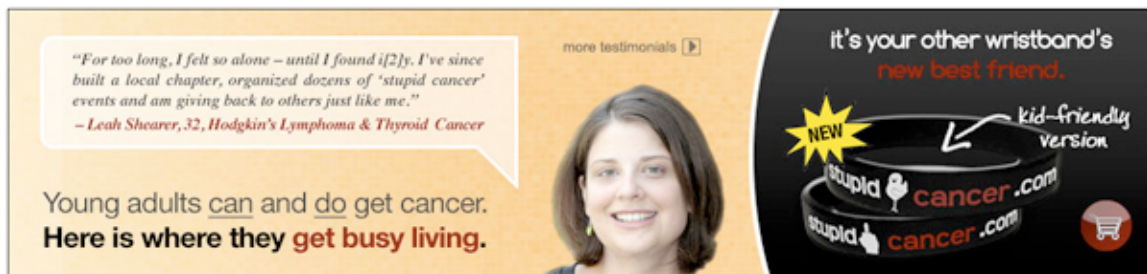


Figure 12: i[2]y functions through narrative frames, ©2011 Stupid Cancer™

Lotsa Helping Hands is another narrative product, which aims to create a platform for caregivers, volunteers, and people who are in transitions. The service aims to be a facilitator, providing communication resources to support family caregivers and volunteers by empowering their community circles that want to help those in need. *Patients Like Me*¹¹² is a disease based community platform for people to congregate and share stories around diseases. *Cure*

¹¹¹ i[2]y I am too young for this, Cancer Foundation. (n.d.). Retrieved January 18, 2010, from <http://i2y.com/index.shtml>

¹¹² Patients Like Me.(n.d.). Retrieved January 18, 2010, from <http://www.patientslikeme.com/>

*Together*¹¹³ and *Community-Revolution Health* also use narrative frame constructs to engage people in conversations. The community products deploy the narration mode in diverse ways. Revolution-Health Service, for instance, provides blogging resources for people to express themselves and share their stories. Others facilitate chat rooms, newsgroups, email, and other communication means, sometimes even facilitating face-to-face meetings with other people in the user's area. Their overarching theme is allowing people to tell their stories, get feedback from other people experienced in the area, and to build a community among all the users.

Once again, these products can be understood as transition products through the lens of Modes of Transition framework. They aim to make people more conscious of the changes happening to them, and to build character into the experience. By encouraging narration and performance, and by generating frequent talkback (whether from other users or during the person's own self-narration), these products work to harmonize these very difficult transitions. When a person is blogging or chatting, she enters into the virtue-habit process of character (as explained in Chapter 2), and she experiences the 'social turn' element of character as well. In this way, she becomes more conscious of her own abiding values and those of her new, product-inspired community, which together offer a means by which to choose how she will transition and also to understand the experience. Faced by the dramatic changes, users of this service are no longer sure of the future, and even possibility of the new unchanging. One possible drawback for the narrative products is how they might provide means for new unchanging situations, namely for routines. They might be good for projecting future scenarios, but they need to have more focus on the routine frames, so that people troubled with the changing can find ways to probe routines, and even construct them.

¹¹³ Cure Together. (n.d.). Retrieved January 18, 2010, from <http://www.curetogether.com/>

These are not the only kind of interactive transition products available now, but they offer a useful insight into these burgeoning ecologies of design. Utilizing the Modes of Transition framework as a ‘way of understanding’, we see that these products and services (though not explicitly designed or marketed as ‘transition’ ones) are in fact forming experiences out of the ritual, routine, performance and narration modes of action. However, they have not wholly explored the potential of modes, especially the multiple modes blending immediate and long term interactions, changing and unchanging factors in transitional situations. It is important to note that the modes often overlap and intersect; and a product may prioritize one over the others, but typically there are multiple modes being used together. But as seen with the existing products, they fall short in scoping different modes at the same time. They (like this thesis argues transition design should do) need to encourage people to transition with character, and they need to do so by considering changing and unchanging, character, and talkback. These products are centered on human experience at various levels, need to be better designed so that they can encourage people to become more aware of their situation, make more informed and deliberate choices about it, enjoy a sense of control over it, and proceed through it with harmony and well-being.

Ways of Composing

The modes of transition can also be deployed as a tool of synthesis, a design perspective. The framework does not suggest either ‘inside’ or ‘outside’ approach to design. It follows Donald Schön’s idea that design can occur both in the designer’s ‘inside’ thought processes and ‘outside’ making experiences. For Schön, both the conception and action of design are necessary, for the formulation, experimentation, and reformulation of a design problem.

When someone reflects-in-action, he becomes a researcher in the practice context. He is not dependent on the categories of established theory and technique, but frames a new theory of the unique case. His inquiry is not limited to a deliberation about means, which depends on a prior agreement about ends. He does not keep means and ends separate, but defines them

interactively as he frames a problematic situation. He does not separate thinking from doing, ratiocinating his way to a decision, which he must later convert to action. Because his experimenting is a kind of action, implementation is built into his inquiry. Thus reflection-in-action can proceed, even in situations of uncertainty or uniqueness, because it is not bound by the dichotomies of technical rationality.¹¹⁴

A design activity focusing on transitions has the same dynamic interactivity between means and ends of design, changing and unchanging traits, and inside and outside of designers. In order to develop strategies for transitions, and relevant interactive products and services, designers can work upon the modes of transition frames and types of transitions interactively. Since there are no rigid boundaries between them, designers can work on them keeping *inside and outside of designer*, *micro and macro transitions*, and *changing and unchanging traits* in mind. Since designers need concrete utterances to work with, they pick the micro or immediate interactions of roles and environments, essentially *routine and performance frames*; however, they can also sketch out possible *narrative and ritual frames* for long-term interactions. Modes of transitions use scenarios as a tool to concretize the strategies and how products can take part in people's transitions. As Carroll stated:

Design theories and theories of human activity are bound to scenarios, and type of scenarios; we can both apply and develop those theories by reusing and evaluating their characteristic scenarios...Making explicit use of theories of human activity and of design genres is potentially a far more powerful method for scenario generation than analogical reuse or heuristic typologies.¹¹⁵

Scenario-based design is a design approach where the designer uses scenarios throughout the design process from analysis to synthesis and evaluation. It aims to make explicit the users'

¹¹⁴ Donald Schön, *The reflective practitioner: how professionals think in action*, Basic Books, 1983.

¹¹⁵ John Carroll, *Making Use: scenario-based design of human-computer interactions*, MIT Press, 2000.

implicit needs and desires before actually building the design products.¹¹⁶ Scenarios address a variety of roles that the self can perform; a set of possible environments that the self can interact with; and the emotional and social motives and consequences of self's interactions with the product. Scenarios have been widely used in the design fields as they provide a concrete yet flexible framework for all the stakeholders in a design process: designers, products, people using the product, and clients.

Modes of transitions take on this promise of scenarios and put emphasis on both the designer's designing experiential frames and the people's composing transitional experiences using the product. By externalizing the dynamic strategy making of the key stakeholders of design, modes give embodiment on how character is built through an ongoing dialogue in the situation through scenarios. In the situational analysis, scenarios work as a means of understanding the issues regarding the transition. The designer can employ design methods such as interviews and surveys, which are crafted using modes of transitions to initiate stories. By analyzing them through the lens of modes and the grounded theory¹¹⁷ methodology, the designer can identify the emerging themes. There are two kinds of themes: *action themes* and *values themes*. Action themes provide the setting and specific instances of the activities for the situation, whereas values themes provide guidance for virtues and priorities while people making judgments and moves. An action theme can be the listening to radio while driving; a values theme can be 'me time' when the person wants to be alone while driving the car. Then she can translate the themes into design concepts using scenarios. Having assessed these scenarios by deploying methods such as speed dating and focus groups, the designer can refine the ideas through prototyping. Prototypes are embodied scenarios for people to assess, judge, act out and respond back. When prototypes are presented to the people, the dialogue has a turn. The designers'

¹¹⁶ John Carroll, *ibid.*

¹¹⁷ Barney G. Glaser, Anselm L. Strauss, *The discovery of grounded theory: strategies for qualitative research*, Aldine de Gruyter, New York, 1999

intention and people's expectations met each other. Interactive products bring the possibility to facilitate such an encounter. People, by situating the product into their routines, performances and rituals, can respond to the product through their own constraints, judgments, moves and assessments. If the conversation takes off through use, products can help people to build strategies for harmonious transitions.

For the designer, assessment of talkback is not easy. She needs to craft methods such as surveys and interviews with the talkback and the modes in mind. Talkback will have two layers to the conversation. One layer will be the match between the intentions of designer and the expectations of the users. The other layer will be the unintended outcomes, and the mismatch between the designer and people's intentions. This layer to the talkback can be perceived as constructive, helping the designer to reframe the product according to the conversation. In sum, modes of transitions function as frames for the designer to deploy different design methods to navigate through the composing phases. Modes also function as frames for people to build strategies to go through the transitions using products.

The next chapter will take the modes of transition into the fields of design activity. Looking at several different instances of transition problems, one can learn better how the modes of transitions function as a tool for ways of understanding and composition. I will use the framework to form specific strategies to compose methods and products that address the problems inherent in transitions.

Chapter IV: Plots for Character

This chapter will manifest the ways in which interactive products support people to build character in transitional situations. The modes of routine, ritual, performance, and narrative suggest unique yet complimentary plots to understand and act on transitions. In weaving the plots of the modes, I maneuver in between the perspectives of the designer, community of use, and products. I begin with the routine and ritual plot, continue with performance, and conclude with the narrative plot. Each plot unfolds its own stories based on the three projects that are situated in the transitions between work, home, and third places. Each plot follows its unique ways to form a path through transitions with its own possibilities and constraints. However, there is an underlying conversation between the actors of the plots, namely, the designer, community of use and the product. While holding the conversation there is a typical unfolding of the design process -- consisting of understanding, conceiving, refining and evaluation, as well as a dramatic unfolding of beginning, middle, and end. The designer and the community of use work towards constructing character in the situation by engaging with the product through different means. From understanding to designing phase the designers looks for the changing and unchanging factors and try to balance them based on the emergent themes. From the user's perspective it is the awareness of the changing and unchanging, and setting priorities and goals while approaching them. The product in this conversation provides four different plots to act on for both stakeholders: routine, ritual, performance, and narrative to form character in the situation.

The framework offers a useful set of tools of understanding and action to the designer. Human-centered design by itself does not equip the designer with specific pathways or devices by which to innovate. Human-centered design needs guidance, to help designers make the leap from understanding to action, to strategize successful interventions in wicked situations. The Modes of Transition framework makes this leap, allowing the designer to form human centered design

methods and processes, by giving them conceptual tools with which to design their research, targets to aim for, sweet spots in which to intervene, and criteria by which they can assess their designs.

Introduction to Three Transitional Challenges

I identified three transition challenges and designed three design interventions accordingly. My goal was to understand the stressors and problems of the situation, identify sweet spots of opportunity for interventions, and design a product that would address these stressors and take advantage of the sweet spots. In the Reverse Alarm Clock, the focus was on how people navigate through their morning activities using an interactive product. This project is an emergent project for the framework. Thus it defines and moves the inquiry toward the MOT framework. In the Life Modes project, the focus is more on how the emergent framework functions in the design process, with consideration to how a designer can achieve his intermediate and ultimate research goals using the transition design framework. Finally, the Adapt-A-Ride project's focus is on the manifestation of the framework in a product, with consideration to how the product can facilitate a conversation between the designer and the community of use. Together, they demonstrate the framework's strength in facilitating the user's agency in a transition experience and the designer's analysis and synthesis processes.

In developing the projects, I have followed the steps of a *design inquiry*, which uses rhetoric and poetics as strategies to inform the process¹¹⁸. Poetics allow me to bring both the

¹¹⁸ Buchanan in the Strategies of Design Research situates the strategies of rhetoric and poetics as follows: "The third strategy seeks an explanation in the experience of designers and those who use products, without recourse to the theoretical abstractions of dialectic or design science. On the one hand it emphasizes the inventive and creative power of the designer and his ability to effect social change through argument and communication, whether in words or in products. On the other, it may emphasize the discipline of designing, based on analysis of the essential elements of products and the creative synthesis of these elements in the various branches of design, with appropriate regard for how products are produced and distributed as well as for how products evolve in human

analytical and synthesizing views of designing, whereas rhetoric allows me to bring the voices of designer, community of use, and the product to the discussions. While shaping the research, I follow a research through design¹¹⁹ approach and make intense use of human-centered design methods.¹²⁰ These concept products function as manifestations of the design knowledge, so to speak; they embody the modes of routine, performance, ritual, and narrative.

The Home-Work-Third Places Transition Challenge

I created the three design research projects using the Modes of Transition framework. Each of the three projects relates to the everyday life of working professionals, who represent a significant and growing demographic within the United States and Europe. Among these projects, Reverse Alarm Clock (RAC) project is the critical one, as the framework has grown out of this project through reflecting in and reflecting on action. In the projects after RAC, the emergent themes of the modes have been used in the whole design process. Mapping out their routines, their rituals, their narratives, and their performances – not only surrounding their problematic situations but throughout their life – allows the designer to identify sweet spots, around which he can build a design intervention.

For example, routine and ritual modes became clear during the Reverse Alarm Clock project while exploring the daily routines of working professionals. Understanding how to reduce

use within a community. This is the strategy of design inquiry, unfolding in two closely related but distinct lines of investigation. The lines are closely related because they both emphasize human experience as the basis of explanation. However, they may be distinguished by their emphasis and point of focus. One line focuses on communication and the imaginative power of the designer, while the other focuses on the discipline of making, within the framework of products and their use. One is a strategy of Rhetorical Inquiry; the other is a strategy of Productive Science or Poetics-from poesis, the ancient Greek for all activities of human making, and from Aristotle's specific use of the term for the science of made-things or the artificial." Richard Buchanan, *Strategies of Design Research: Productive science and Rhetorical Inquiry*, *In Design Research Now*, Board of International Research in Design, 2007, Part 2, 55-66

¹¹⁹ John Zimmerman, Jodi Forlizzi, and Shelley Evenson. Research through design as a method for interaction design research in HCI. In Proceedings of the SIGCHI conference on Human factors in computing systems (CHI '07). ACM, New York, NY, USA, 2007, pp. 493-502.

¹²⁰ Catherine Courage, Kathy Baxter, *Understanding Your Users: A Practical Guide to User Requirements Methods, Tools, and Techniques* (Interactive Technologies) Morgan Kaufmann, 2005.

the stress of morning getting-out-the-door rushes, first, I focused on the morning routines, however throughout the process, I realized that young children are waking their parents in the early morning. This helped my team to shift the focus of the inquiry not only to morning routines but also to the night time, so the bedtime rituals.

Before diving into the projects in detail, I would like to describe contexts in which the projects are situated. From their interviews with working parents, Beech et al. identified 5 phases, many of which are transitions, in their everyday lives.¹²¹

- **Home-AM Phase:** The period of time from first getting up to leaving the house.
- **Home - Work Transition Phase:** The period of time where working parents are mainly mobile getting from home into work. This may include a number of “transitional stops” or places where working parents spend a short amount of time (mainly to drop off children at school or nursery).
- **Work Phase:** The period of time spent mainly in the work place or at work related sites engaged primarily in working activities. For some working parents, this includes trips out during the day either to attend to domestic chores, or for work meetings or lunches.
- **Work - Home Transition Phase:** The period of time where working parents are mainly mobile getting from home into work. This includes a number of different transitional places before arriving home including picking up children from school, nursery, or the child minder and stopping at places such as shops.
- **Home-PM Phase:** The period of time from first getting home to going to bed. While I will define “getting home” as first arrival at home after work, many working parents then go out for a number of domestic reasons such as going to the shops, dentist, taking the children to music lessons, walking the dog, or going to the gym. Occasionally they also

¹²¹ C. N. Darrah, J. English-Lueck, J. Freeman, Families at work: ethnography of dual career families, Final Report for the Sloane Foundation. 2001.

may go out for work reasons, including going to evening meetings or visiting clients.

Among these phases, I chose the ‘home-AM’ and ‘home PM’ phases in my first project, and the ‘home–work’ and ‘work-home’ transitions in my second one, and the overall phases in my third project on social media. As Beech et al. found in their work, stress is diffused into these situations at different magnitudes.

I designed three conceptual interactive systems situated in three transition situations. They address the disjunctions between home, work and third places, and they involve micro (role and spatial) and macro (life-stage) transition experiences. The Life Modes project’s situation concerns transitions of people who have many different areas/modes in their lives and are engaged in social media products. I address their challenges of transitions and their online mapping of offline world through a concept design situated in their social media experience. The Reverse Alarm Clock project’s situation concerns the everyday lives of dual–income families with young children. I address their stressful home to work transitions, and by situating a concept design in their routines and rituals, I discovered the product also needed to be framed for children’s life-stage transition. The framework emerged as a strategic tool in this project, helping designer and users navigate through a complex set of interactions. The last project, Adapt-A-Ride, concerns the situation of the everyday lives of solo drivers who need to commute in between home, work and third places. I address their problems of stress and finding ride-mates through a concept design situated in their commuting routines and rituals. Again, the framework was instrumental in the design process and product. It helps the designer to navigate from the beginning of the design process till the end, by framing the design methods and, in so doing, the product itself.

The Life Modes transition project

Life Modes¹²² is a design research project exploring the phases of everyday transitions and how people organize, transition and share between these different phases in context of social media products. The Life Modes project looks at the flux that happens while people organize their lives between home, work, and third places in the context of both offline and online activities. While the person's situation and roles have changed, the social media product remains unchanged, and this can cause frictions.

The project goal is to investigate how to leverage the natural models of social organization from people's lives to improve their experiences of social media streams. In this project, I performed a study to examine how people might best a) organize their social life both offline and online, b) transition between different areas of their lives online, and c) focus their sharing and consumption of online content within these areas. I conducted qualitative interviews with 16 people who were selected through an online screening questionnaire that asked about age, gender, Internet usage, identity faceting, sociability, and work status.

At the end, I designed a conceptual online social media service that helps people to organize different areas of their lives, coordinate events, share and consume content, and transition in between their contexts. The priority was to have a social media that changed along with the user's changes in roles and environment – that was flexible, manageable and smooth to use in a person's many different situations. See Figure 13 for the interface.

¹²² Fatih Kursat Ozenc, Shelly Farhnam, Life Modes in Social Media, CHI 2011 Conference on Human Factors in Computing Systems, Vancouver, Canada, 2011.

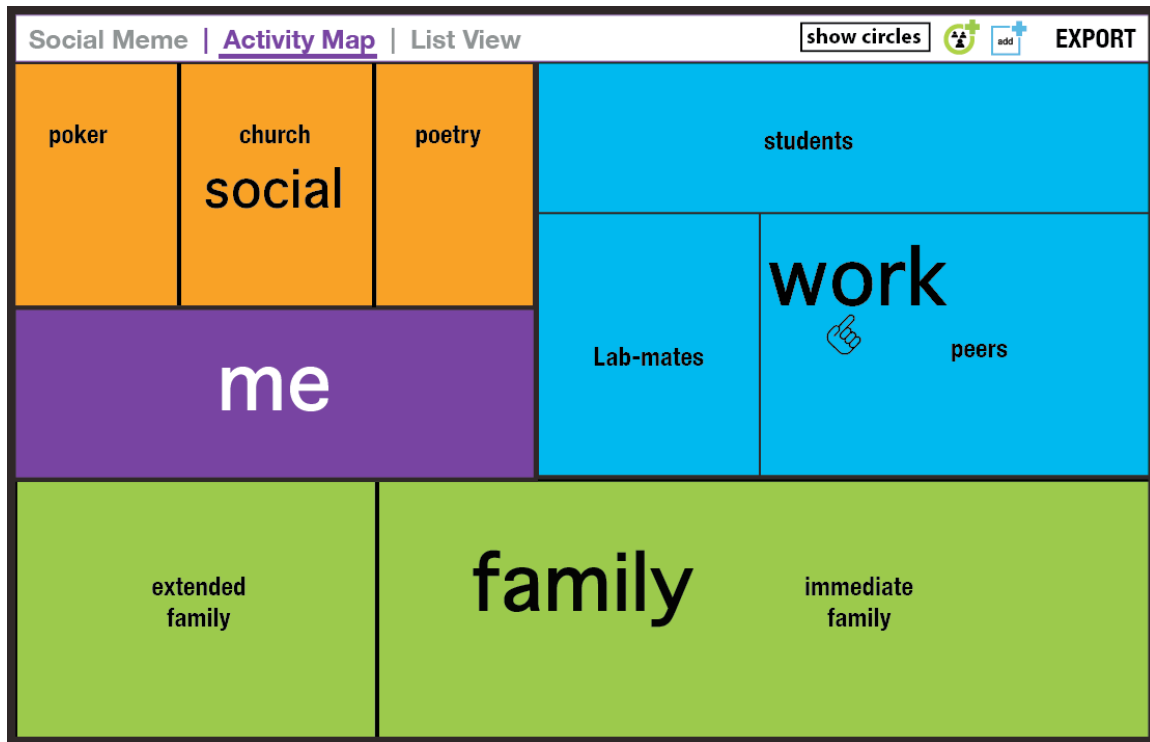


Figure 13: Life Modes Interface, organizing people by activity map. (c) Fatih Kursat Ozenc 2011, All Rights Reserved

The concept design addresses the visualization metaphors for the different life modes (Figure 13), which offer ways to help people share and consume activities in the online platforms, as well as cues and keying for online transitions. In its organizing people features, the design supports both the manual and automatic sorting of people, aiming at finding harmony in the agency of the situation.

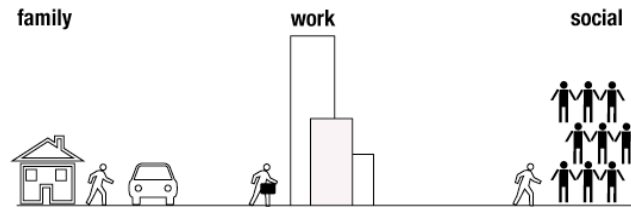


Figure 14: Life Modes, home, work, social, (c) Fatih Kursat Ozenc 2011, All Rights Reserved

The Reverse Alarm Clock project

Reverse alarm clock is a research project developed to address the morning stress of dual income families with young children. This kind of family possesses a dynamic structure, with its spectrum of grown-up parents and developing children. Compared to their parents, who have stability, research shows that developing children (in particular toddlers) have a development cycle of six months.¹²³ Every six months, they fluctuate between equilibrium and disequilibrium. In these disequilibrium times, parents have a hard time keeping order in their family lives.

At the end of the project, I designed a conceptual interactive system for these families to keep children from waking their parents before the designated wake-up time (Figure 15). At the beginning, the goal of the project was to help parents to have a better morning experience, to increase the parental satisfaction, and to increase the emotional and social quality of family life affecting the rest of the day. Through research through design and reflecting on the process, I realize the design provides the following: (i) the resources for repeated parental role *performance*; and resources for parents and children to participate in family *ritual*, (ii) increased parental competency over the complexities of the daily *routine*, (iii) increased child agency, and (iv) fewer nights of interrupted sleep for the parents. However, these were unknown to me as I began the project. Using design research as a means to generate knowledge allowed me to discover the

¹²³ http://www.centerforparentingeducation.org/programs_articlesresource_ucstages.html

emergent themes of the framework. Reflecting back, I can see the modes in action, also in the way I understood and approached the design, and I can also see character and talkback in the situation of the design. The product and system engaged the families, and

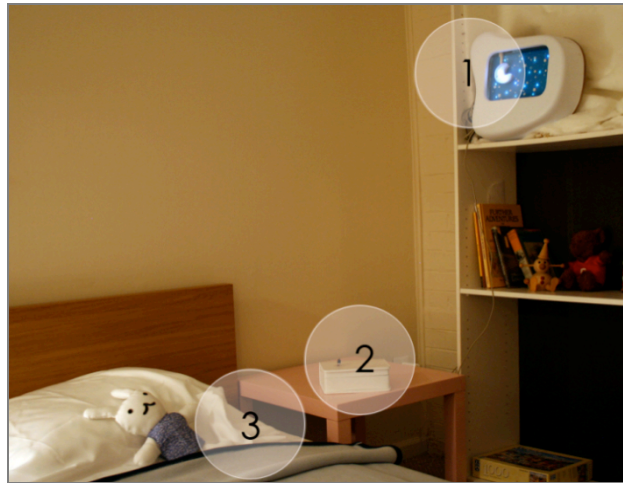


Figure 15: System elements: 1. Sky display, 2. Treasure-chest, 3. Bed sensor pad, 4. Parental Controller: The Reverse Alarm Clock, with its four system elements, offers different resources and capacities for action for the dual-income family members. (c) Fatih Kursat Ozenc 2011, All Rights Reserved

The Adapt-A-Ride project

Adapt-A-Ride is a design research project to unveil the solo driving problem and home-work-third places transition in the context of commuting. Research shows that there are 240 million cars in the United States, about 1.2 cars per licensed driver. Solo driving represents 78% of the work commutes in the United States.¹²⁴ Solo driving is then framed as a problematic transition situation in contrast to healthier yet sustainable commuting options. The wicked problem here is the unchanging dimension – the entrenched habit of solo-driving – and the challenge is how to change it in favor of more socially and environmentally responsible – if not individually satisfying – commute habits.

¹²⁴ C. Reschovsky, Journey to Work, U.S. Department of Commerce, Economics and Statistics Administration, 2000.

To assess this problematic situation, I began qualitative interviews with participants to understand their transitions during home to work and work to home time frames. At this point in my research trajectory, I had begun to develop my framework out of the Reverse Alarm Clock project, and was guided by the Modes of Transitions lenses for understanding the commute experiences. I recruited the participants who commute to and from university campuses and professionals who travel between the suburbs and the city of Pittsburgh. I interviewed 30 participants including faculty, staff, and student populations, making sure that females and minorities were represented.¹²⁵ At the end of the project, I designed a conceptual service that helps people coordinate casual ridesharing and provides an incentive program for them to engage in habitual change. It provides a website to match drivers and riders and a reward card for collecting incentive points.

The design was built around the idea of displacing the unchanging, to change into a new stable habit of sharing rides. Change, in this project, was a positive and a goal. To achieve this transformation, I followed the insights that emerged out of my research. In our interview and survey results, I identified five profile features that people care about in their ride mate preferences: age group, gender, affiliations, social networks (Facebook, IM, Twitter, etc.), and interest groups. I designed a profile page, where people can input their preferences for their ride mates. The design means to put character into the commute situation – allowing people to represent themselves with the service, interact with others' profiles, and participate directly and personally with the site. It is not merely about finding the most convenient and cheapest ride, but about generating relationships, hearing talkback from the site and other users, and sparking a conversation between the user and the site. The product is not just an instrument for the user to find what the user has searched for – it also responds with new suggestions, that do not completely match the user's preferences but push them, change them, and open them up to new

¹²⁵ Of these 30 people, 8 currently carpool and 22 do not. Among the commuters, there were 14 bus riders, 8 carpoolers, and 8 solo drivers.

options.

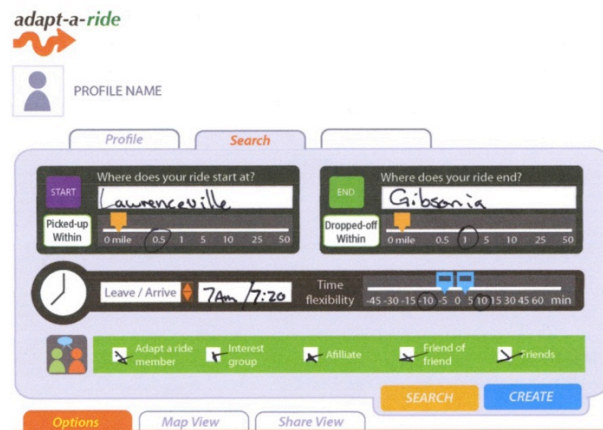


Figure 16: Interface for Rideshare search, flexibility controls, (c) Fatih Kursat Ozenc 2011, All Rights Reserved

To explore the flexibility in depth, I designed flexibility controls of ride search on three dimensions: time, location, and ride mate (Figure 16). People can input their time and location flexibility both for departure and arrival. They can also indicate whom they want to ride with, including friends, friends of friends, affiliates, interest groups and service members (strangers). I envisioned an algorithm that can respond to individuals' flexibility preferences with dynamic scenarios, providing people flexibility choices including time, location, ride mate, and incentives.

The Modes of Transition Framework in the projects

As discussed throughout the thesis, transitions as phenomena can posit two situations: flux¹²⁶ and order¹²⁷, changing and unchanging. On one hand, transitions contribute to the stability or unchanging, such as in daily transitions of commuting between home and work. On the other hand, transitions bring a state of flux, or changing, such as in the life-stage transition of a young

¹²⁶ Flux can be defined as the quality of the ever changing.

¹²⁷ Order can be defined as the quality of the unchanging. Ruth Lorand, *Aesthetics of Order, A philosophy of order, beauty and art*. Routledge, 2000.

child becoming independent. The Modes of Transition framework allows the designer the tools to spot these moments of flux and order; and to figure out how to position their intervention to reconcile the conflicts and stress that arise out of them. It is a sensitizing lens for the designer, for finding key insights into users' experience and then crafting design interventions around these sweetspots.

Routine Plot

The routine plot is key plot for the designer in structuring the inquiry, understanding the interviews and observations he compiles, and acting on this understanding. In both situations of changing and unchanging, routine is the material gestalt of a transitional experience, giving a holistic understanding of the ordering and continuity aspects of any defined activity around transitions. By looking at the changing and unchanging dimensions of users' routines, the designer can find what their value and action themes are. It is a rich source of understanding them holistically, and finding the sweetspots upon which designs can be constructed. The designer can then use these understandings as paths for action. It is by developing new routines, displacing old ones, or changing and editing them, the designer can develop better transition experiences.

1. Routine as a Way of Understanding

I inquired into routine while considering both sides of the coin, addressing a challenge of changing dimensions and the challenge of unchanging ones. By focusing on routines, I was looking for better ways to identify what the heart of the wicked problems are, how best to frame them, and what sweet spots exist for possible designs. To inquire into the challenge of the changing, I used the Reverse Alarm Clock and Life Modes projects, and applied the research through design approach as described above.

moments. This resonates with Goffman's theory on social interactions and how people switch between social contexts.

Participants' transitions from one area of life to another were most often concurrent with external transitions such as moving through time or moving from one place to another, which shows the relative importance of time and location coordination in thinking of the routine plot. The person's daily routines, like their routines of waking up, preparing themselves for the day, traveling to and from work, and preparing meals, are also sweet spots for their online lives and transitions. These routines were not just practicalities; they carried with them highly-charged shifts in roles and behavior. The designer can use these routines as means to better understand the potential for stress and well-being throughout the day, as well as possible points of interventions, where a design could hook into the user's routines.

The Reverse Alarm Clock project also was based heavily around routines, as a means to reconcile changing and unchanging in dual-income families with young children. I specifically looked at these families' day and night routines. To form a plot, assessment of the situation was necessary before making any judgments or design moves. To understand the complexity of waking up activities, I conducted contextual interviews with four dual-income families in their homes.¹²⁹ As part of the interviews, I asked participants to create a detailed map of their morning routines allowing them to see and explain the many simultaneous and mutually dependent activities going on between the family members (Figure 18). I wanted to use their routines as a means of understanding their life patterns, to identify where stressors arrive and how they cope with them currently – as well as how they could be developed or revised to improve their daily transitions.

¹²⁹ Kursat Ozenc et al., Reverse alarm clock: a research through design example of designing for the self. In Proceedings of the 2007 Conference on Designing Pleasurable Products and interfaces, ACM, New York, NY, 2007, 392-406.



Figure 18: An example of a morning map, (c) Fatih Kursat Ozenc 2011, All Rights Reserved

The visualization of the waking up activity (see Figure 18) shows the immediacy of the mutually dependent events in the sense that any missing part (a missing shoe, a lost homework) or any lost time causes a breakdown in the routine. When something goes wrong it disrupts the delicate morning choreography and causes a cascading set of failures. Unexpected changes to the expected morning routines can disrupt the transition, and have negative consequences for the rest of the day, as well as longer-term relationships and responsibilities.

This reveals the interdependency of routines across time, people, and location, as well as a need for an explicit deliberation on the coordination aspects of the routines. Routines, though relatively stable from day to day, are actually quite fragile. Small occurrences can break a routine down one day, and the family – who relies upon the routine to keep order in the morning and keep their stress levels down – can spiral into chaos quickly. One day the routine may work fine, but the next day it could crumble. The wicked design challenge, then, is all about routines: how to intervene to solidify these morning routines, so that they break down less often, or even if they do break down, that the family can recover and move on fluidly. Shortly, how to make these daily routines of morning changes more stable, more predictable, more unchanging? Without immersing myself in the design research processes, it would have been impossible to reveal these

insights, and develop the framework.

While the Reverse Alarm Clock and Life Modes project stem largely from the challenge of maintaining a sense of well-being through periods of flux and fragile routines, Adapt-a-Ride is different. This project on ridesharing looks at the challenge of displacing ordered routines with new ones, in the context of transportation routines. The challenge of the Adapt-A-Ride project was not just to build new routines to guide people through flux situations, but to disassemble stable routines in favor of more socially responsible ones. People have already established order in their commutes, with established ways that they regularly use for transportation. They drive to work, home and third places by themselves, despite the fact that driving solo is expensive, can be tiresome during peak traffic hours, and creates significant amounts of carbon dioxide emissions. Interviews revealed that people decide on their commuting choice on the basis of flexibility. People still want routines, but they do not want rigid routines. They want the products to support them if they need to adjust their daily transit routines, if some unexpected occurrence happens. If, for example, they have to stay late at work, run to the store to pick up something for dinner, or drive a co-worker home, the user wants the flexibility deviate from their usual routine. Like with the families in the Reverse Alarm Clock project, these ‘pop-up’ interventions could cause enormous stress and chaos if the products do not support the user’s flexibility. Unexpected changes throw their spatial transitions into trouble, and they are not easily prepared to cope with them.

This partially explains why people prefer solo-driving. Flexibility is a central strength of their preference for routines built around solo driving. It is also a major weakness for other – more socially and environmentally advantageous alternatives like ridesharing or public transportation. The underlying forces defining flexibility are time, people, location, and cost. People chose solo driving since it provides them flexibility that they want and structure that they need to rely on. Having a car to herself, always available to her and at her service, allows the

user to adapt to any unexpected change that arises. Even if their routines are fragile – and unexpected events ‘pop up’ throughout their day – their personal car allows them the opportunities and support to smoothly adapt, preventing the rest of their day from being derailed or stresses from arising. Though not the most responsible or satisfying means of transportation, solo-driving has succeed as a design because it is an unchanging factor that a person can rely when faced with any sudden change to their daily routines.

It is notable to observe from the interviews that routines are flexible yet structured activities. It resonates with Lucy Suchman’s argument on plans and procedural actions. In her seminal work¹³⁰, Suchman stated that:

The foundation of actions by this account is not plans but local interactions with our environment, more and less informed by reference to *abstract representation of situations and of actions* and more and less available to representation themselves. The function of abstract representations is not to serve as specifications for the local interaction but rather to orient or position us in a way that will allow us, through local interaction to exploit some contingencies of our environment and to avoid others. (Italicized by author.)

The observations from the interviews and Suchman’s work suggest that design’s role in forming a plot for the routines happens with providing resources for action through abstractions and representations of the transitional situations. This framing of ‘resources of action’ is one of the core ideas to facilitate transitions and achieve flexibility. It carries out of the Adapt-A-Ride project, into my framework more generally. For a design intervention to engage the user, it should provide them with resources for improvising their own routines, whether it mean keeping them the same, revising them, or inventing new ones. The designer does not dictate these new

¹³⁰ [38] Suchman, Lucy A. 1987. Plans and situated actions: the problem of human-machine communication, Cambridge University Press, New York, NY.

routines with the product, but gives suggestions and resources – via talkback and character – that let the user have agency over her routines in the transition.

2. Routines as Way of Action

To move from understanding to taking action in the transitional situations of the three projects, I explored ways of providing resources for action and flexibility in all the projects, including the Reverse Alarm Clock and the Adapt-A-Ride.

With the Reverse Alarm Clock, young children's bedtime routines turn out to be a critical location for an intervention. It was in this project that I realized that routines are key sweet spots: they are stable, predictable stages on which a design could build new interactions. Using these routines as staging points, Reverse Alarm Clock provides flexibility and resources for action through its interfaces and the new time routines it encourages. Working around the unchanging general bedtime routines, the design could introduce some changes that would improve the smoothness and user agency of the transitions. The Reverse Alarm Clock features a sky display, which uses abstractions of time and representations of the natural signifiers of sun, moon, and sky, (see Figure 19). The *sky display* (Figure 19) mimics a puppet theater with a starry background and two puppets: the moon and sun. The moon lights up and enters the stage when the system is activated, triggering the *bedtime* state. The moon exits the stage when the system enters the *in-between* state. When the system is in the *wake-up* state, the sun lights up and enters the stage. See Table 3 for their relations. Through the use of natural elements (sun, moon, stars), the sky display abstracts time into three states that a young child can understand. It builds a new sleeping routine for the childhood, having hooked into the previous routines of going to bed, setting a clock, and looking to clocks in the morning at wake-up times.

| | Sky Display States | | |
|-----------------------------|---------------------------|-----------------------------|---------------------------|
| Display Elements | (Home-PM) Bedtime | Transition | (Home-AM) Wake-up |
| Moon [puppet, light] | Puppet on stage, Light ON | Puppet off stage, Light OFF | - |
| Stars [light] | ON | ON | OFF |
| Sun [puppet, light] | - | - | Puppet ON stage, Light ON |
| Music | - | - | ON |

Table 3: Embodied Scenarios of the Sky Display: 1. Moon and stars (bedtime) = stay in bed, 2. Stars only (in-between) = can get out of bed, 3. Sun rise (wake-up) = must get out of bed

A parental controller also supports the abstract representations of time, helping the parents to have flexibility over the ever-changing sleeping habits of their child. It lets the parent set the timings nightly, integrating this arrangement into their own nightly routine times. The controller expands upon their agency, helping them to create more stable routines that are more explicitly defined.

Adapt-A-Ride is designed explicitly considering the flexibility of the person in terms of time, location, people, and cost. It sets up a new routine that the user can deploy when making commuting choices. The designed interface establishes this new routine: the Adapt-A-Ride system's user can input the flexibility choices over a search console (see Figure 16), and the system responds to these choices with alternative commuting scenarios. This is the talkback, in which the character in the situation emerges. A dialogue is sparked, in which the user is challenged and engages with the product to decide how to act in the transition. At the material level of the experience, in both these projects, the designer needs to resolve the functional goals of the system. While aiming to craft character and talkback at a higher level, the designer must also keep focused on the other level, of the very practical, concrete goals. For the Reverse Alarm

Clock, this is the solving the problem of children waking their parents up in the morning. For the Adapt-A-Ride, it is finding a ridesharing mate.

Before building a plot to nurture any emotional and social quality, the design needs to address the functional goals of a designed piece. It must build useful routines, that provide the desired functionality, that cultivate character in the situation, and which ideally can grow towards a higher level – that of rituals. Once the designer meets the functional goals and a product becomes seamless and part of people's routine plot, the product is then exposed to a repetitive use and engagement, which can transform and elevate the interactions between people and product into another plot, the plot of ritual. There is a thin line between routine and ritual. Routines are transparent, meaning that outsiders can understand and engage in routines easily. Rituals on the other hand are opaque, they are difficult for outsiders to perceive, and they require focused interaction and reflection from their participants. They carry more meaning and significance that the designer must take even more care to uncover.



Figure 19: Representations and abstractions, moon, sun, and stars as ways to initiate actions, and form a routine and ritual plot, (c) Fatih Kursat Ozenc 2011, All Rights Reserved

Ritual Plot

The framing of ritual in this inquiry is a non-traditional one, and sits in between the ‘functional’ and the ‘cultural meaning’ approaches. This is due to the two promises of ritual in a transitional context. First of all, ritual is functional, finding harmony between the changing and unchanging by maintaining the unchanging as well as transforming the situation with changing. Second, ritual is a performance, helping the person to construct new meanings out of the situation.

With these two features, following Bell’s argumentation, I frame ritual as a practical plot, which is situational and strategic in the way it finds harmony between means and ends of the transitions. The situational aspect involves a ‘ritualization’, a specific way of acting, which is focused, and involves forming a plot with gestures and body movements through products and structured environments. Catherine Bell puts the principles of ritual in this way:

In effect, the real principles of ritual practice are nothing other than the flexible sets of schemes and strategies acquired and deployed by an agent who has embodied them.¹³¹

Note that the practice-oriented ritual is flexible and open to change, contrary to the accepted notion of ritual in traditional origins and essence approach. It is through rituals that people construct what is meaningful to them, and express what they value in their lives. Rituals give affordances¹³² and constraints¹³³ for people to enact meaning while they are going through their daily experiences. Affordances provide the cues and keys for people to grasp the functional

¹³¹ Catherine Bell, *Ritual: Perspectives and Dimensions*. New York: Oxford University Press, 1997

¹³² James Jerome Gibson, *The ecological approach to visual perception*, Psychology Press, 1986.

¹³³ Horst Rittel, and Melvin Webber; "Dilemmas in a General Theory of Planning," pp. 155–169, *Policy Sciences*, Vol. 4, Elsevier Scientific Publishing Company, Inc., Amsterdam, 1973. [Reprinted in N. Cross (ed.), *Developments in Design Methodology*, J. Wiley & Sons, Chichester, 1984, pp. 135–144].

routine elements and enact meaning out of their activities. That is where I discovered routine and rituals as the two layers of an experience embodying the action and values themes of an experience. Action themes give the person a way to act on the basics and routine elements of an experience whereas values themes give the person the guiding frames to construct meaning out of the action themes. The design should achieve this through building character into the situation, engaging the user in a talkback dialogue. It is through rituals that you can find both the action and values themes at work. With this framing of experiences, the projects gave both instances of action and values themes.

Designing Ritual Frames in the projects

On the question of how to design for rituals, one can say the acquiring and deploying parts in rituals are mediated through the design process, particularly through the designer's deliberative actions in the understanding and the action phases. In the interviews for the three projects, I have asked participants to explain their routines and rituals and discover what I characterize as action and value themes. For instance, in the Adapt-A-Ride project, I discovered a values theme called 'me-time'. For several commuters, me-time is when they can relax and think about nothing except themselves. Mark for instance, stated that it is a "nice feeling sometimes to drive by yourself. I can listen to radio." and David stated "I don't want to talk to others before getting the day started [sic] and having my coffee." The small daily moment is also another values theme that makes commuting pleasant, including activities such as watching for falling leaves in the autumn, changing routes in order to observe animals on the road, using chanting beads for praying, stopping for bagels and a cup of coffee on the way to work, or listening to a favorite show on the radio.

In a similar vein with the Life-Modes project, I asked participants about their rituals in between different areas of their lives. Participants' transitions from one area of life to another were most often concurrent with external transitions such as moving through time or moving

from one place to another. I found some participants had rituals that facilitated changing modes while transitioning. Susan for example used her shower as a ritual for mentally preparing for the day every morning.

“In the morning before I go to school, I take a shower, it is just like mandatory, in the shower, think over things -- what I am going to do at school, what am I going to wear. The kids are already gone to day care so that's out of the way. It is just transitioning from being mom to being a student about that time, during the shower.”

Participants often incorporated media into their routines and rituals when transitioning. From work to home, for example, Mary watched her favorite TV show, “I come home, turn on Judge Judy and start making dinner.” Joe played video games and Alice took off her shoes and listened to music to “wind down”. From her personal mode to family mode, Sarah needed “winding up” with coffee and cheerful music before her niece visited her. Deepak and John used meditation and breathing exercises to transition from their work mode. Deepak, Matt, and Michael transitioned through behavioral enactments of their modes, changing their language and outfits when they were with their coworkers, family or friends. Interviews in both projects highlight the functional and meaning-making aspects of rituals during the transitions.

When I turn to the action and conceiving phase, the Reverse Alarm Clock project offers a good instantiation of a ritual plot. Reflecting back on the project, several insights emerged. At the design phase, through conceptualization on themes, I crafted an environment through the design elements of sky display, bed sensors and the treasure-chest music box. Reflecting on them, I realized that they act as ‘keying’ and ‘cues’ for the parents and their children. The ‘parental moments’ and the ‘childhood memories’ are the embodiments of the values themes where people craft their meanings from their everyday routines. When the parent and child interact through the reverse alarm clock, the product creates affordances for unique parental moments for the parent, and perhaps future childhood memories for the child. This is a moment when character in the situation emerges. The elements of display and the treasure-chest music box provide affordances for focused interaction. The *treasure-chest music box* (Figure 20) lets the child select the music to

play during the *wake-up* state, when the sun puppet enters the stage and it is time to get up and start the day. This is done by placing music tokens inside the box and pressing the button on its top. Every music token corresponds to a music play list, which can be configured by the child and parents together.



**Figure 20: Treasure-chest music box as affordances for routines and rituals, (c) Fatih Kursat Ozenc
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A ritual plot also plays a central role at the end of a design process, where the designer needs to assess the product in a real life situation as well as where the user needs to engage in the product and talkback. This happens by explicitly situating the product in people's rituals. The designer crafts these situations by carrying out the ritual aspects of the proposed design from the conceiving and refinement phases and by designing an assessment study highlighting the elements of routine and ritual themes. Usually, I designed the research study in three stages, before, during and after, similar to the dramatist perspective of beginning, middle and end. The granularity of the design product and prototype do not prevent the designer from applying the

principles and routine and ritual plots. I will give two examples depicting how one can move forward using the modes approach. The first instance shows assessments of routine whereas the second one the ritual plots.

In the Adapt-A-Ride project, having finalized the concept design on a ridesharing service, I designed an assessment study involving a low-level paper prototype. To assess the product and get the most out of it, I developed a commuting habit diary for the participants to fill in prior to their attendance in the paper-prototyping evaluation sessions. They log in their weeklong commuting habits, including their routines, rituals, casual and one-time commutes. Once they came for the study, the researcher used this variety by situating the service interface into these modes, helping both the designer and user to anticipate the possibilities and constraints of the proposed design. See Figure 21 for the diary.

The diaries in the Reverse Alarm Clock moreover let me compare the nights when the child used the clock to the nights when the child did not use the clock. If the clock had an effect, statistical evidence would arise that sleep quality differs between those two kinds of nights, and will show that the clock provides enough resources and affordances for the family to form a routine plot. Again, this analytical strategy cannot assess whether the effects of the Reverse Alarm Clock would be generalizable to a wider population. Instead, it merely examines whether – in this particular small sample – there was a difference associated with use of the clock.¹³⁴

For the two children who consistently used the clock, the presence of the Reverse Alarm Clock decreased the number of nighttime awakenings¹³⁵. These results suggest that the Reverse Alarm Clock reduced the number of periods of nighttime wakefulness for the children in this study and the clock helps the family to change their sleeping routine for good. Of course, the

¹³⁴ This analytical strategy is similar to that often-used in case studies with clinical populations, where generalization to wider samples is not the primary interest. Instead, the goal is to determine whether a research program has an effect on a particular people or small group of people (e.g., XX).

¹³⁵ Without the Reverse Alarm Clock, parents reported that their children woke an average of 1.3 times ($SE = 0.1$) per night; with it, children woke an average of only 0.7 times ($SE = 0.1$) per night. This difference was significant, $F(1, 54) = 4.62, p < .05$.

results must be interpreted with caution, as they are parental reports of sleeping and wakefulness, not direct measures of sleep. It is possible that the Reverse Alarm Clock exerts a placebo effect on parents, positively distorting their recollections. Note, though, that prior research has found self-report to be valid for identifying many sleep parameters such as total sleep time and sleep onset latency¹³⁶ and highly correlated with more objective measures.¹³⁷ As such, the results from the diaries provide strong support for the hypothesis that the Reverse Alarm Clock was helpful for the children in this sample who had difficulty sleeping through the night and left me cautiously optimistic that the Reverse Alarm Clock would have an effect for a wider sample and for families to form a routine plot.

Child's Sleeping Habits Diary Log

Put to sleep by
 Mother ☐ Father ☐ Other ☐ Child ☐

Wakeup 1.) ☐ called at ☐ got up

Time : :

Reason :

Total time of wake up : :

Today is Friday

| TRIPS | START | END | START TIME | DURATION | COMMUTE TYPE |
|-----------|-------|---------------|------------|----------|--------------|
| TRIP 1 | Home | Work | 6:50 AM | 20 min | Car |
| TRIP 2 | Home | Restaurant | 6:00 PM | 30 min | Car |
| TRIP 3 | Home | Movie Theater | 8:00 PM | 15 min | Car |
| Other (s) | Home | Friends Home | 11:00 PM | 2 hrs | Car |

Figure 21: Snapshot from Sleeping Diary study showing people's commuting patterns, (c) Fatih

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¹³⁶ E. Libman, Catherine S. Fichten, S. Bailes, R. Amsel, Sleep Questionnaire Versus Sleep Diary: Which Measure Is Better. *International Journal of Rehabilitation and Health*, 5, 3, 2000, pp. 205-209.

¹³⁷ A. Gaina, M. Sekine, X. Chen, S. Hamanishi, S. Kagamimori, Validity of Child Sleep Diary Questionnaire among Junior High School Children. *Journal of Epidemiology*, 2004, 14, pp.1-4.

In Reverse Alarm Clock, assessment of the ritual plot is again realized with a high-level prototype. In the pre-launch phase, I asked the participants to log their child's sleeping habits in a diary similar to the Adapt-A-Ride project. This time however, the function of the diary is different; it is more to identify the differences before and after we introduce the product in participants' homes. This high-level prototype is explicitly meant to be part of the family's bedtime rituals. When researchers visited the families in their homes with the products, they asked them about their children's favorite songs that they listen to, and uploaded these songs inside the prototype computer. Once they did this, the next step was situating the prototype in the rooms of the young children. The families guided the researchers how and where it would be appropriate to situate the product. Once the product was installed, the family members used the product as part of the bedtime rituals where the product can make a difference by engaging them in the functional and meaning making aspects of rituals. By suggesting framings as flexible as possible, the design is suggesting ways in which people can embody the rituals in the way they want and proceed. It sets the stage for character to emerge, and lets the user direct it with participation and interaction.

Reflecting back on the ritualization of products in the assessments, one possible drawback can be the placebo effect that the product can possibly initiate. To overcome a placebo effect, the designer might need to deploy supplementary modules to the research study, such as surveys and interviews that have the potential to unveil the underlying motives in people's interactions with the product. In the Reverse Alarm Clock, these supplementary modules were the surveys that I designed to inquire into people's rituals. In designing these surveys, I derived questions both from the psychology literature and my own Modes of Transitions framework, asking explicit questions about people's meaning making processes. To compliment these surveys, the designer also needs to be aware of the duration of the study, and adjust it based on

the specific situation that the design is addressing¹³⁸. Inquiring into the meaning making aspect of the ritual, the enactment (or, the performance) aspect of ritual becomes as critical as the routine plot. Put simply, ritual is a performance¹³⁹ where people enact their meanings with or without an audience. In the case of personal rituals, the person treats herself as a separate other person, reflecting on the situation while acting in the situation. In the case of an audience, the people enact the roles and identities of the proposed design. This carries the discussion to the plot of performance during transitions.

Performance Plot

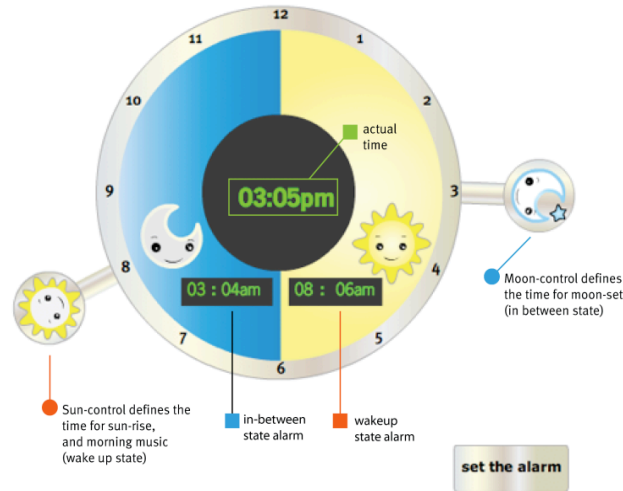
The routine plot stands for ordering, whereas the ritual plot does for meaning making in transitions. The performance plot complements the former plots with its harmonizing of changing and unchanging, transitioning and meaning making. Prior research on social identity gives a comprehensive map of the performance plot. People enact social roles based on the situation defined by the audience, time, and place, attuned to the character that emerges out of the situation. Social norms and cultural constructs are also core dimensions that build the situation for the role enactments. In the Life-Modes project, the life-mapping activity validates prior work that family, work, and social are the three main universal contexts in which people enact their roles. Among the three, the social depicts a diversity of representation. People also have secondary contexts and roles that supplement these universal modes. When reflecting on what they draw on the map, people perceive their enactments as changing modes of an unchanging self; they are hesitant to see themselves changing their identities depending on context. The performance plot, however, is at the heart of such a swing. It works in the unchanging contexts of home, work, and

¹³⁸ In a recent work Prototyping Social Interactions, Suuri et al mentioned four dimensions to successfully communicate design resolutions. These are ordinary social setting; naturalistic research design and methods, openness, and sufficient time span. (Esko Kurvinen , Ilpo Koskinen , and Katja Battarbee. Prototyping Social Interaction, *Design Issues* 24, no. 3, 2008, 46–57.

¹³⁹ Victor Turner, W., Bruner, M., Edward, (Ed.), *The Anthropology of Experience*, University of Illinois Press, 1986.

social; however, it also swings back and works in the changing contexts. To depict this swing, or harmonizing, I will again turn to the Reverse Alarm Clock and Adapt-A-Ride projects.

In the Reverse Alarm Clock, I address the role of the parents, child, and family in the design process. The parental role is the core of the design focus since they are the ones who will be facilitating the transitions.



**Figure 22: Controller to increase parental agency in routines and rituals, (c) Fatih Kursat Ozenc
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To increase the agency of the parents, and to support their performance of the parental role, the clock system suggests a parental controller that gives flexibility and control to the parents. The *controller* (Figure 22) lets parents set times for the clock transitions: the *in-between* (moon set time, leaving the stage) and *wake-up* (sun rise time, entering the stage) states. The controller uses a blend of analog and digital representations of time, and gives immediate feedback when parents are sliding the handles. Ideally, the controller is a physical object that is mounted on the wall near the light switch. It will not only facilitate their performance of parental roles, it will spur it on.

For this initial field study, I developed the controller as a Flash application running on a laptop computer. The child on the other hand has another challenge in the system, transitioning from a dependent sleeper to an independent sleeper. To address this, the treasure chest music box and the bed pad give agency to the child. They are tools for their performance as a growing child. As she picks up the idea of the clock, she gradually builds up her role from toddler to a young child. The *bed-pad* detects the child's presence on the bed. If the child leaves the bed during the *in-between* state (the moon has exited the stage, but the sun has yet to enter), the sensor pad transitions the clock to the *wake-up* state (sun enters and music plays), regardless of the time set on the parental controller.

In these processes, the product gives the affordances for both parents and the child to enact their roles. The clock in this sense bridges what is unchanging and changing in the family. Parents perceive their roles as unchanging whereas their child's are changing. The product harmonizes the changing and unchanging in its own ways-- for the parents, transforming the parental role from unchanging to changing, for the child, stabilizing the ever changing -- that will contribute to continuity and well being in the family. Reverse Alarm Clock in its context, is defined and developed around the universal context of home and the well-defined identity of parenthood.












| Options | | Map View | | Share View | |
|-----------|---|---|---|---|---|
| Rideshare |  |  |  |  |  |
| Ride 1 |  | Pickup | Drop-off | ___min | Adapt a Ride member |
| Ride 2 |  | | Drop-off | ___mile | Share costs |
| Ride 3 |  | Pickup | Drop-off | ___min | Friend-of friend |
| Ride 4 |  | Pickup | | ___mile | Activity group |
| Ride 5 |  | Pickup | Drop-off | | Adapt a Ride member |
| Ride 6 |  | Pickup | Drop-off | | \$50/pmile |
| | | | | | \$3 /p mile |

Figure 23: Flexibility Choices, (c) Fatih Kursat Ozenc 2011, All Rights Reserved

With the activity of commuting, the Adapt-A-Ride project spans across home, work, and social areas and provides a rich set of contexts for the performance plot. The challenge in this project is to transform the solo-driving role into the ridesharing role. To support such a role shift from unchanging to changing, the proposed design uses performance as an improvisational plot, giving alternative scenarios for the person to enact different set of ridesharing roles. See Figure 23.

Each rideshare option provides dynamic information on whether the person is taking or giving a ride, ride-mate candidate, time and location proximity and the cost of the ride. I devised a range of ride-sharing options to see which ones the users would gravitate towards.

Ride 1: the participant would give a ride to a stranger and who would share costs; however the driver would arrive later than their specified arrival time.

Ride 2: the participant takes a ride from a friend of a friend but needs to meet the other person at a certain distance from their starting point.

Ride 3: the driver participant gives a ride to a person from her interest group but waiting for a certain time at the starting point.

Ride 4: the rider participant takes a ride from a stranger driver but be dropped of at certain distance from the arrival point.

Ride 5: the driver is using his/her own car

Ride 6: the participant takes a taxi. In each scenario, the system provides a new role enactment for the person, changing the time, place, and the audience.

This flexibility of the performance plot gives the person the opportunity to adapt to the ridesharing role in different circumstances with the promise of changing the long term commuting behaviors. I took this flexibility choices interface and assessed it with the solo commuters based on their commuting diaries. While participants were studying the scenarios to

make decisions, they constantly weighed the flexibility choices, leveraged past experiences and personality preferences, made assumptions, and imagined their ridesharing contexts to make decisions. While weighing the context, they identified the priorities and set some assumptions. Then they forecasted possibilities using the constraints stemming from priorities and assumptions. The last step was making decisions. This active engagement in the system illustrates the improvisational aspect of the performance where the user deploys strategic interactions¹⁴⁰ to adapt her to a transition and reach at harmony, while still in tune with their values.

The performance plot can also be composed through a persona crafting process where the designer carves out possible role enactments to probe the future possibilities for the transitional situation. In a previous project on college freshmen students, I co-developed *transition personas* to address different stages that the freshmen go through in their transition from high school to college student. In this creation of transition personas, I made intense use of the social identity theory structuring the research studies and identified key touchstones in a semester long transition of the students. Having identified the key turning points for the students, I then created transition personas addressing each of the stage that they go through in one semester. The design team then takes on these transition personas and creates scenarios and concepts addressing the challenges of each stage in the transitions.¹⁴¹

The projects that I worked on during the inquiry show that transitions do happen in layers and in a simultaneous manner. The Clock Project showed that there occurred at least two transitions in the everyday lives of dual-income families with young children, one regarding the daily transitions from home to work, and second, the young child from dependent sleeper to an independent one. Similarly, the ridesharing project shows that it is both the spatial transition from

¹⁴⁰ Goffman uses the term strategic interaction while he is reading social encounters between people. He derives the term from the game theory where people assess, judge, make moves and pay off when they are performing strategic interaction.

¹⁴¹ For more detailed version, see Zimmerman on supporting role transitions, John Zimmerman, Kursat Ozenc, Bong-keum Jeong, *New Methods for the Design of Products that Support Social Role Transitions*, *Artifact*, 2(3&4). Taylor and Francis, 2009, 190-206.

home, work, and third places, and the role transition from solo driving to a ridesharing role. This simultaneous nature of transition hints at a need for another perspective on transition, which will provide a look at both linear and non-linear temporalities at the same time, the plot of the narrative. Narrative gives the inquiry a way to identify the underlying structure of how to be a mother and a professor at the same time without chaos.

Narrative Plot

There is a natural match of narrative frame with the design process¹⁴². Following the model Ricoeur suggests in his inquiry, pre-configuration in a narrative model maps to the understanding, configuration maps to the conceiving and refinement, and reconfiguration maps to the evaluation phases¹⁴³. Narrative in these steps is embodied through scenarios. Scenarios are tools manifesting the action and values themes. In pre-configuration, it does this through the interviews and questionnaires; in configuration, through scenario generation; and in re-configuration through talkback scenarios.

The pre-configuration phase begins with the questions in the form of surveys, interviews, and diaries. In the Adapt-A-Ride project, the interviews with the 30 participants involve questions on commuting stories. I asked them to tell their best and worst experiences during their commute

¹⁴² Narrative, like ritual, is an overarching theme that has been studied from a diverse set of perspectives in literary and cultural studies. In my inquiry into transitions, I take narrative as the transitioning person's dynamic life story, which is not only depicting the unchanging but also the changing self. It gives the person the unity and the harmony that the person strives for during the turmoil of the transitions. According to Paul Ricoeur, narrative has three consecutive steps, pre-configuration, configuration, and reconfiguration. The pre-configuration step is the understanding step where the person unveils the questions of what, how, why and whom. The configuration step is where the person looks at what is possible. Borrowing from Ricoeur, configuration is the kingdom of the 'as if'. People configure their objects, agents and events into an imaginative order, *emplotting* their enactments and figuring out the possible futures. It is the phase where the chronological time is interwoven with the experiential time, creating a unity in the experience. The last phase is the reconfiguration where the 'fictive' imaginative order in the configuration meets the actual world and lived experience. The reconfiguration helps the person to reflect on the narrative, help to construct a dynamic life story and identity. The narrative plot is cyclical in the sense that when the new experiences are introduced to the person's life, the narrative begins with the pre-configuration phase again.

¹⁴³ Paul Ricoeur, *Time and Narrative*, University of Chicago Press, 1990.

time. I explicitly made the question indirect and tried to understand the emotional and social aspects of commuting. There emerged values themes from these stories; the narratives unveiled important points of understanding and then action.

“Socializing-time” is, for instance, one of the emerging values-themes. For some, the daily commute is an opportunity to reconnect with family members or friends in a close quarters environment. For families with children, it is the time for parents to talk to and occasionally play word games with their child. For spouses, it is a time for relaxation. Margaret (Participant 4) stated, “I have a punch-buggy game. The winner yells at or hits the other...I watch what other cars doing. I like to observe the activity and come up with stories, some humor is needed.” Similar to family time, people who commute with friends use the time to catch up on each other’s lives, making the commutes pleasant. One of the participants characterizes the commuting time as something like a seminar discussion with his carpool-mate: they both gain new perspectives on the IT business. For a family carpooler who occasionally carpools with a colleague, commuting is a chance to start a new friendship apart from a purely professional acquaintance; these carpoolers discover their common interests during the commutes. The commute can also work as a stress reliever, as Sarah (Participant 8) claimed, “When you have people (in the car), it decreases tension, you forget about things you cannot control.” These little narratives excerpted from participants’ experiences point to the ritual moments as well as performative events happening during the transitional experiences.

“Traffic-time”, on the other hand, points to a negative values-theme, which makes commuting a bad experience. To avoid traffic jams, people develop strategies such as leaving and returning home early. For Matt (Participant 2), if he hits traffic congestion in the morning, “It can certainly carry on, makes me tired, by the time you reached work, you are already tired. It does affect how I feel at work.” For Bob (Participant 14), it is a tiresome routine, and there is “nothing pleasant in the commuting.” For Carl (Participant 21), traffic congestion that occurs in bad

weather is a time killer: “Bad weather invades your family and work time.” Most of the people saw having a good experience as a modest desire, not something extraordinary but just a freedom from hassles and boredom. For Sam (Participant 17) a good experience consists of “having a clear way, not closed, and not stuck in traffic.” These stories give glimpses of how and why people chose what they chose in their commuting experiences, all elicited using narrative techniques as a way of understanding the dynamics at play.

In the configuring phase, the designer makes use of the narratives emerging out of scenario-based design to embody the emergent themes derived from the understanding phase. Scenario-based design works with scenarios through storyboards. A storyboard consists of the steps of context, problem, proposed design, interaction, and resolution. Each scenario represents a concept and addresses a certain aspect of a transitional situation. Concepts in the conceiving phase are more exploratory, or diverging, whereas in the refinement phase they are more definite, or converging. The emplotment in the conceiving and refinement phase is backed by the evaluation methods such as speed dating, focus groups and so on. The participants’ responses in between the conceiving and refinement in these sessions help the designer to emplot a unified concept before the reconfigurations session. Emplotment is selective, nonlinear and brings a holistic view to transitions.

The Adapt-A-Ride project illustrates such an emplotment through conceiving and refinement processes. In the conceiving phase, many concepts are generated, plotted in transitional situations through scenarios for diverging and exploration. Once these concepts were generated, speed-dating sessions were conducted with participants to evaluate them. Once the assessments were completed, three emergent themes were composed into one unifying concept, embodying the initial concepts, configuring the agents, people and events in the situation. The result was a concept design that allows the person to enact different ridesharing roles using flexibility resources.

Raising a reflective voice, one can say that designer configures a scenario of use for her proposed design by emplotting different performances into a cohesive whole. The designer tries to craft narrative plots that the product and the user may proceed along, or ones they might begin on, and then through their interactions and choices, depart from. Think of the alarm clock project and the proposed scenario. Looking closely there are four sub-plots and enactments that create a unified whole in the configuration phase:

Sub-plot 1: Using the *controller*, the parent sets the times for state transitions of the system. That is, the time to transition into the *in-between* state (the moon puppet leaves the stage, leaving only stars lights on), when the child can leave her bed, and the time to transition into the *wake-up* state (the sun puppet enters the stage and music plays), when the child should get out of bed.

Sub-plot 2: To activate the clock at bedtime, the child selects the morning's wake-up music by placing a music token into the *treasure-chest music box*, and then pushes the start button. This triggers the *bedtime* state: the moon puppet enters the stage, and both moon and stars lights are on in the *sky display*.

Sub-plot 3: In the morning, when it is time for the *in-between* state, the moon puppet exits and only stars remain.

Sub-plot 4: The *wake-up* state can be triggered by (i) the time set by the parent, or (ii) the child leaving the bed, as detected by the *bed sensor pad*. In the *wake-up* state, the sun enters the stage, and music plays. The child is ready to get up and start the day.

The 'emplotment' of these interdependent states and enactments created a system that allows the family to resolve their morning hassle. A narrative mode has been constructed through the interactive design. Note that even though these sub-plots have a consecutive stage-like unfolding, the system still has a non-linear compositional quality to it. Sub-plot 1 can be over-run

by sub-plot 2 when there is no need to adjust the clock everyday. Similarly the child's agency has the capability to change the story based on her role enactment in the system.

However, the designer's endeavor hasn't been completed yet. The narrative configuration needs to meet the real lived experience. That is where the prototypes and evaluation enter the stage. This is the stage of reconfiguration where the designer's imaginative order meets the user's actual lived experience. The imagined narratives may be transformed into new or revised ones through the interactions of the user and the product, and the character that emerges from the situation. To have a fluid conversation through the reconfiguration, research studies need to be designed with a dramatic unfolding of beginning (pre-launch), middle (launch) and end (post-launch).

In designing the evaluation for Reverse Alarm Clock for instance, I wanted to investigate the talkback between the people and the product, and how it is deployed in their everyday lives. I recruited dual income families with young children who wake up in the middle of the night. The Martins (Family 1) had children aged two and three. The Birds (Family 2) had a full-time working father, a part-time working mother, and a 4-year old child. The Stewarts (Family 3) had a 4-year old child. The Martins' child had 4 to 5 nocturnal awakenings a week, while The Birds' child had 6 to 7 a week. The Stewarts' child had more problems falling asleep than waking up; that was the reason she sleeps with her parents. By putting the Reverse Alarm Clock in their bedtime rituals, and deploying diary and surveys, I found a chance to observe the reconfiguration phase of the narrative plot, and how these three families, in the dimensions of events, product and agency, receive the whole system.

As stated in the routine mode, the three families filled diaries and surveys throughout the clock evaluation. Upon inspecting the child diaries, it became apparent that one of the participants was not using the Reverse Alarm Clock consistently: the Stewart parents reported that the child spent most nights sleeping with them. I take this response from the third family with caution and

as a conversing talkback from the community of use. Since the other two families used the product, I was able to assess their interactions with the clock regarding the parental performance, ritual, and routine plots. The insights I explain here then primarily concern these two families. Even the surveys are meant to be quantitative; their results are not for generalizations since the study is in the territory of a small sample.

In the last phase of the evaluation, interviews helped me to learn stories of use that I could not capture in the diaries and surveys. The Martins and Birds families stated that Reverse Alarm Clock became part of their routine and helped the child to stay in bed. Moreover, The Martins' daughter was upset to part with the clock after the evaluation. She wanted to keep it. The Martins and Birds also gave us feedback on some of our design features. In the design, the bed sensor pad is to allow the child to trigger the system to transition to the wake-up state when she wakes up in the in-between time. My intention was to reward the child for good behavior. But parents of both families found this feature not particularly helpful. They suggested transitioning into the wakeup state only by the times set by the parents. The Martins had another daughter who was 2 years old. As they sleep in the same bedroom, the parents reported that she also got a sense of the states. Neither family changed the music tokens during the study. They stated children loved to listen to the same music again and again. These talkbacks helped me to observe the reconfigurations of the system by the community of use, and guided me through the possible future configurations.

The fact that the Stewarts' daughter didn't use the product in the way I intended also hinted at another insight on reconfiguration. In terms of the framework, it revealed that the designer must be not too wedded to their own planned narrative for the product and the user, but should follow up to uncover what actual interactions and plots result in the field – what the actual narratives that play out are. During the interviews, it turned out that the third family was still sleeping with their child during the night. However, I had intended the clock to accompany the

independent sleeping child. This shows that this family is still in the transitioning from the dependent sleeping mode to the independent one, and the product itself in this equation is not framed accordingly. This talkback from the Stewarts was striking from the perspective of transitions and brings me back to the pre-configuration, the stage of understanding. I have come to a realization that transitions do happen simultaneously and in a layered fashion. While looking for transitional situations, there is always a need to take this multi-layer nature into consideration and the functioning principles of immediate and long-term affecting the people at the same time.

Moving forward with the Modes Framework

The four plots, or routine, ritual, performance, and narrative, lead to several insights for approaching and designing for transitions. Transitions challenge the ordering, meaning making, and the unity of people's lives due to the imbalance between changing and unchanging. To address these challenges, design products have the competency to provide resources of action through abstract representations and metaphors. The flexibility is key factor in providing the affordances and constraints to the person for ordering the routines. Either with a repetitive manner, or while transitioning, people form ritual plots using these flexible affordances and constraints. They enact meanings with bodily gestures and movements. Their enactments in another parallel world form performance plots, by either representing the unchanging and stability, such as family, work roles, or representing the changing and new, such as a ridesharing role. With appropriate regard, the introduction of a product helps the person to form a narrative plot, by understanding the situation, by emplotting different performances, and by reconfiguring the intentions and expectations.

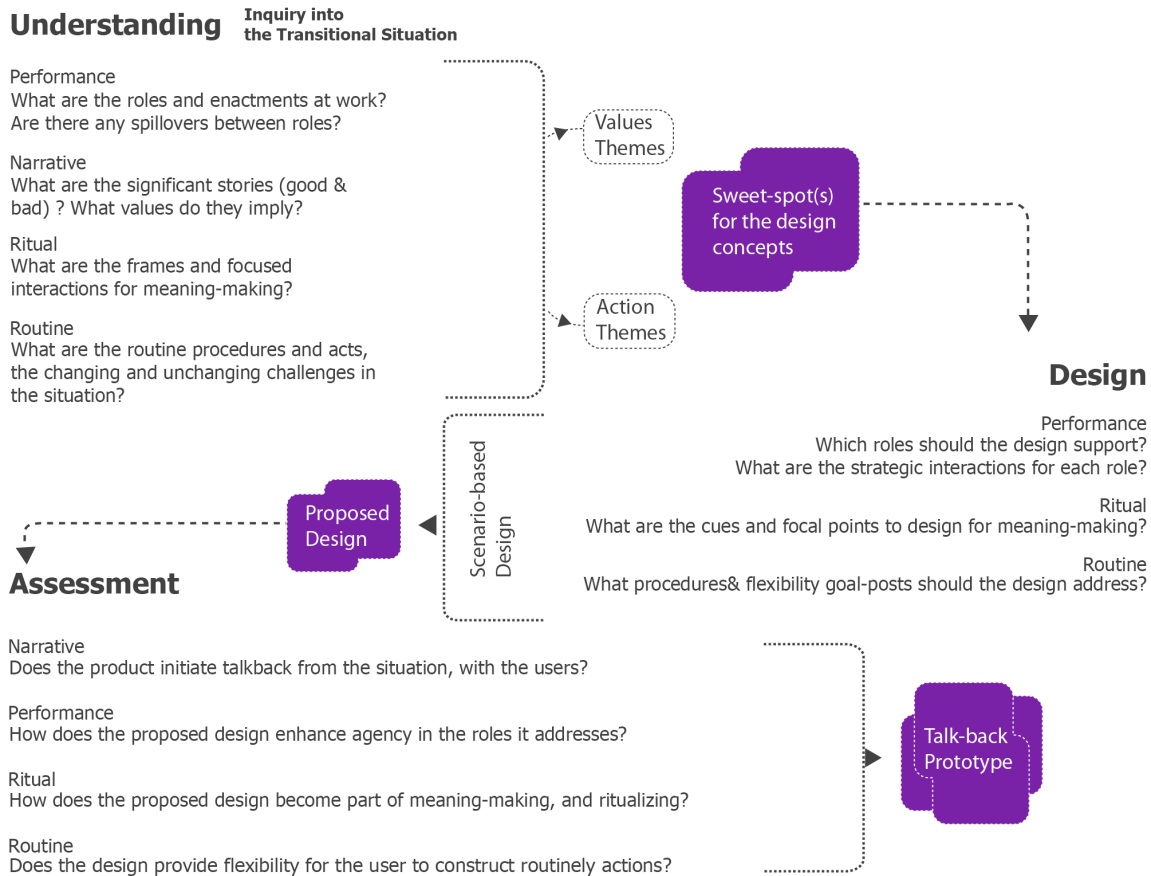


Figure 24: Modes of Transitions in Action, (c) Fatih Kursat Ozenc 2011, All Rights Reserved

The designer, when given a brief of a transitional situation, first wears an analytical lens of the framework and brings the four modes as different perspectives to understand the same phenomenon (Figure 24). She asks the questions of routine, performance, and ritual, and facilitates narratives to unveil the unifying qualities of experience. The methods of the inquiry depend on the situation, however. Human-centered design methods, such as interviews, surveys, and diaries can be designed according to the plots. Inquiry on routine and performance should highlight the resources of action, and aspects that cause flux and order. The designer needs to consider the roles and enactments that are active in the situation and ask questions to unveil the action themes that drive people in the transition. Inquiring into the ritual and narrative modes, the

designer needs to ask questions about values themes, and things or activities that help people to form meaning.

Having harvested her findings, the designer moves forward with the emergent action and values themes. She begins generating scenarios embodying these themes. The sweet spots in the proposed designs live in the intersection between action and values themes. She can map the experience situation, having found what the changing and unchanging dimensions are, identified the two different themes, and then found where design interventions might work. While creating these sweet spots, she works with personas and frames different enactment settings. The sweet spots are intended to create affordances and constraints for people to act as they want to act, through the character that emerges in the situation, with the conversation that emerges through the talkback. She then gets initial feedback from the community of use and refines the design concepts with a more unified design.

Once the design is configured and ready for the re-configuration, the product is put in use in real life context. People first assess their resources with the product, make judgments, and begin acting with character, trying to figure out if there is a match between their values and action themes and the proposed design. This is a dialogical process, where people and product take turns in the conversation. Plots can take shape, having been set in action by the designer, but then taken on and reformed by the interactions that occur between the product and the user. It is the phase where people enact or rehearse their strategies using the frames that are offered in the product. The over time use of product might lead to ‘emplotment’, weaving of stories that are meaningful to the person.

Chapter V: Significance

People are constantly thrown into the wilderness of transitional situations, from the most trivial ones of traveling between places to more major ones regarding life-stage and life-style changes. In these situations, people encounter challenges that can lead toward growth, stability, and decline. One of the core motivations of this inquiry is an initial observation on people's capacity to address these challenges, regardless of the transitions' magnitude and intensity. In describing and explaining this unique capacity of people, I have been inclined to go back to the origins and essences of human nature. This tendency, backed by my own lived experience and cultural codes, led me inquire into human nature and discover *character* as the driving force for people in transitions.

One other core motivation of this inquiry is the realization that products are natural companion of people during transitions¹⁴⁴. While putting their capacities into action, people have a life-long reliance on products and environments. From the very beginning of life, people learn to define themselves on one hand in relation to other people, on the other hand, in relation to the products and environments. Think of a teddy bear's immutable role in a toddler's life. It accompanies the child in a very first turmoil of life, resolving in self-awareness¹⁴⁵. Products provide at least three axes to hold on to: helping people *to act on* the situations, helping people *to mediate* their relationships with other people, helping people *to reflect* on their own selves. In these three axes, products define an area of reference, proximity to act on the flux of transitions.

People's actions with and through products are driven by the principle of harmony. Regardless of what direction the transitional situation would lead the person, towards growth, stability, or even decline, harmony as a principle provides the prospect of peacefulness, a space in

¹⁴⁴ William R. Belk, Possessions and the Extended Self, *Journal of Consumer Research*, 15, 2, 1988, pp.139-168.

¹⁴⁵ Donald Woods Winnicott, *Playing and Reality* Psychology Press, 1971.

which changing and unchanging conditions could blend, promoting and nurturing wellbeing.

Harmony in its origins refers to four inspiring definitions¹⁴⁶:

Harmony is the combination of simultaneously sounded musical notes to produce chords and chord progressions having a pleasing effect, a quality of forming a pleasing and consistent whole, an arrangement...of any parallel narratives, that presents a single continuous narrative text, and an agreement or concord.

Each definition suggests a complimentary perspective to the conception of harmony. Harmony is a performance of simultaneous voices forming a consistent, continuous, and aesthetic whole.

Referring to the transitional contexts, these simultaneous voices are the voices of changing and unchanging. With harmony, there is an agreement in action. Such agreement is not easy, requiring voices to be recognized, heard, and expressed. In order to nurture voices, an artful arrangement is necessary.

Harmony actualizes these definitions through character. Harmony is embodied in an agency (character) constructed on relationships. Such relationship is built on a conversation between designers, community of use, and products. As this inquiry built on a rhetorical strategy, the invention and creative power of the designer is the key to the conversation. As Buchanan stated:

Rhetorical inquiry takes many forms, but the common theme is a relationship between the intentions of the designer, and the expectation of those who will use a product. The product itself is the reconciliation of intention and expectation, a record of the negotiation takes place directly or indirectly between the designer and the community of use¹⁴⁷.

This inquiry shows ways in which such conversation takes place during the understanding, action,

¹⁴⁶ Retrieved from Oxford Dictionaries,
http://oxforddictionaries.com/view/entry/m_en_us1253652#m_en_us1253652

¹⁴⁷ Richard Buchanan, *Strategies of Design Research: Productive science and Rhetorical Inquiry*, In *Design Research Now*, Board of International Research in Design, 2007, Part 2, pp 55-66.

and reflection phases of the design inquiry. Elaborating on the conversations, one can refer to kinds of conversations, such as monologue, argument, and dialogue. This inquiry, referring back to theoretical constructs of Bakhtin's dialogical self¹⁴⁸, and Donald Schön's reflection in and on action, takes on the promise of a dialogical conversation. Dialogue in a transitional situation is initiated by designers, carried forward by the products, and taken on and sustained with the community of use. The sides of the conversation contribute to the agency at various levels. The designer works on framing and structuring the product and environment. People act on the environment through bodily movements and gestures. Products respond to the people, helping people to reflect in and on action.

The structure and qualities emerging from the conversation depends on whether indeterminate situations evolved from their existing states into its preferred ones¹⁴⁹. To inquire into these structure and qualities, I devised a poetical strategy, which relies on analysis and synthesis of functional elements of a situation. Poetical strategy suggests four elements of material, manner, form, and function into a situation. These four elements are not parts to be dissected but paths to a composed whole. In the particularity of a transitional situation, these paths are ways in which people compose harmonious experiences. Inquiring into these paths, I discovered the four modes, modes of transitions: routine, performance, ritual, and narrative. Each mode is a path to a preferred state and a harmonious experience. They are not parts but ways in which people compose character with their actions.

Mode of *routine* functions as material element of an experience and an ordering plot for people to build character in transitional situation. By engaging the person in the dynamic arrangement of time and place through the resources of action, products give a flexible framework for people to build up relations. The studies that I conducted showed that routines are

¹⁴⁸ Mikhail Bakhtin, *Toward a Philosophy of the Act*. Ed. Vadim Liapunov and Michael Holquist. Trans. Vadim Liapunov. Austin: University of Texas Press, 1986.

¹⁴⁹ Herbert Simon, *The Sciences of the Artificial*, 1991.

complex, vulnerable activities, requiring the product to be structured yet flexible for people to act on. By establishing a routine through the product, person can have a cohesive, aesthetic and harmonious order. Aesthetic order addresses complexity by using an ordering principle (harmony) to connect the sets of elements in an activity¹⁵⁰. Order brings harmony by conforming the changing and unchanging dimensions in a transition.

The ritual mode functions as formal element of an experience, transitioning and meaning making plot for people. Ritual plot provides means for people to transform the perceptions and interpretations of a situation where a new alchemy is constructed blending both the unchanging/old and changing/new. These means are the ‘framings’¹⁵¹ of an environment where the designer deliberately develops ritual ‘moments’ embodying the values-themes emerged from the understanding phase in the design process. Ritual moments are designed with ‘keying’ and cues in the form of tangible or intangible products. This inquiry follows a practice ritual approach, where the agents of the ritual have flexibility over the framings and can enact and create meaning using these framings. In Reverse Alarm Clock, this framing was developed around the bedtime ritual. The clock frames parental and family moments for the family members to enact their roles and construct meaning. As Bell argues, people in these ritual settings can flourish their agency by strategically using these cultural and personal frames, maneuvering between what is changing and what is unchanging, discovering what is meaningful to them.

The debates in the design communities around meaning making is not new; however, it gains an impetus since the emergence of interaction design where the human product relationships become more explicitly considered. Roberto Verganti, in a recent book, brings a fresh perspective on the role of meaning making in design and pitches an argument that design driven innovation differs from the incremental methods such as engineering and human centered

¹⁵⁰ Ruth Lorand, *Aesthetics of Order, A philosophy of order, beauty and art*. Routledge, 2000.

¹⁵¹ As first used by Gregory Bateson, the term indicates the way in which some activities or messages set up an interpretive framework within which to understand other subsequent or simultaneous acts or messages. Frames, for Bateson, are a form of ‘meta-communication’ (Catherine Bell, page 74).

design by its capability to foster radical innovation¹⁵². It does this by giving priority to ideas and by changing the meaning of a product. The designer engages in a conversation with the other actors of the situation, offers a proposal for a new meaning, and if it is get accepted, the conversation takes off and transforms the current status quo. He then gives examples from the practice world of how Apple changed the music industry by introducing a service design model with i-tunes and i-pod. Apple changed the meaning of a product, made the music experience mobile with the i-pod, personal and serendipitous with shuffling.

There are several approaches from a community of use perspective on meaning making with products. Roger Silverstone suggests a stage-like unfolding where people integrate products into their lives through domestication, appropriation, and incorporation¹⁵³. The idea is a gradual and step-by-step process where the products become part of people's lives and part of the meaning making. Mika Pantzar takes on a more holistic approach and suggests a path for meaning making with 'consumption rituals'¹⁵⁴. When a certain product is introduced in people's lives, there are the paths of transformation, from sensation to routine, toy to instrument, pleasure to comfort, and luxury to necessity. In these transformation paths, rituals are becoming the plots for people to shuffle between changing/new and the unchanging/old and to create new relationships through products.

Performance plot is where the human and product agencies take chorographical turns between each other. It is the plot where the underlying dynamics of micro-level interactions emerge. The idea of strategic interaction¹⁵⁵ and strategic thinking in this regard is a tool for the person in a transition. Indeed, the study on the commuting choices revealed that people devise

¹⁵² Roberto Verganti, *Design Driven Innovation: Changing the Rules of Competition by Radically Innovating What Things Mean*, Harvard Business Press, 2009.

¹⁵³ Roger Silverstone, Eric Hirsch (Eds.) *Consuming Technologies : Media and information in domestic spaces*. London/New York: Routledge, 1992.

¹⁵⁴ Mika Pantzar, Domestication of Everyday Life Technologies, *Design Issues*, Vol.3, No.3, Autumn 1997, p.52-65.

¹⁵⁵ Erving Goffman, *Interaction Rituals: Essays on Face-to-Face behavior*, Pantheon Books, New York, 1967.

strategic thinking while making decisions on their commuting choices. Even with the personal encounter of commuting, the mode of performance brings the idea of perceiving self as another self during the transition where the transitioning self enacts strategies with herself echoing the idea of dialogical self where self is inherently social.

Narrative plot is the encompassing plot where the understanding and action stages of the inquiry are followed by the reflection stage. In deploying the narrative plot, I follow Paul Ricoeur's narrative model and observe that his three stage for narrative-pre-configuration, configuration, and reconfiguration- map to the process of the design inquiry- understanding, action, and reflection. In the pre-configuration designer understands the transitions by asking questions on what, how, why, whom, etc. Having identified the action and values themes, the designer configures and designs products. The reconfiguration phase is where the imaginative ordering of the designer meets the actual lived experience of people. Narrative promises a holistic approach to the complex, layered and simultaneous nature of transitions. It does this through emplotment of ordering (routine), enactments (performance), and meaning making (ritual). Narrative with this comprehensive quality helps the person to form life stories or identity. However, this identity is a dynamic one, involving a reflection in and on action through the turmoil of transition. Narrative with its comprehension brings a systemic approach where the parts and wholes are considered at the same time.

Having touched upon the principles of the modes of the transitions, I will conclude the inquiry with a discussion of future work, including possibilities and constraints for design for transitional experiences. In approaching future work, I reflect on the evolutionary path of the inquiry, which is made possible by the rhetorical and poetical strategy. Working toward the communication and making simultaneously, the following directions emerge.

Frameworks as Guides to Human-Centered-Design

This inquiry has been nurtured by the research through design approach and human centered design methods. Going through the processes of exploring, building, and assessing products, one strong insight emerged out of the process. Human centered design methods do not bring creative leaps by themselves. A term coined by Bruce Archer, ‘creative leap’ depicts the designer’s activity to reach at preferred states. HCD methods are useful tools for designers and researchers to understand a situation; however, they oftentimes prove inadequate in framing the problem space, while attempting to derive critical insights out of the study. This has been discussed by the design community, in the axes of incremental versus radical research. Human centered design methods have been criticized as not providing enough potential for innovation.

The arguments that are raised by Donald Norman and Roberto Verganti can be two recent examples to these discussions. Don Norman in a recent keynote speech¹⁵⁶ chose to discredit the entire human centered design endeavor for its weakness in innovation research, reserving his praise for engineering-driven research that is characterized with new technology. This critique on one hand brings a reasonable challenge to the existing practice; on the other hand, it misses design activity’s very first capability and potential: the creative leap.

Verganti¹⁵⁷ brings a more holistic approach to the discussion with the idea of design driven research, where the emphasis is on the design activity that is supported by interpretations of key interpreters. This inquiry demonstrates a similar approach, while putting emphasis on designer’s judgment in the interpretation. By bringing the theories of social sciences and humanities, the design researcher can frame the problem space strategically and in a focused

¹⁵⁶ IASDR 2009 Korea, Donald Norman, Keynote, October 19, 2009.

¹⁵⁷ Roberto Verganti, Design Driven Innovation, Harvard Business Press, 2009.

manner. This will allow him to be strategic in designing the human centered design methods as well.

Human centered design – when equipped with the guidance of a design framework -- becomes *focused research*, where the researcher knows what to look for and why they are looking. There are other similar frameworks such as *Designing for the Self*¹⁵⁸ and *Designing with Intent*¹⁵⁹ that can fall into a similar realm, a realm that appreciates the *designer's judgment* and interpretation by supporting it through succinct and practical interpretations of social science and humanities theories. Modes of Transitions bring a lens to support the designer's judgment, putting emphasis on the values, actions, and interrelations between the two in the situation. In a way, designer's judgment is explicated through frameworks, giving the designer space to channel the judgment with action and values themes. An explicated judgment hints at another quality of frameworks, their ability to map the problem space, and bring a systemic view to a wicked situation.

Modes as Systems Thinking

As transitions occur in multiple layers of ones' life, through personal and social encounters, within the self and the environments, there is an inherent complexity to their structure and quality. This inquiry is an attempt to address such complexity by deploying multiple points of perspectives interwoven with the aforementioned elements of experiences. With its consideration of parts and wholes at the same time, its emphasis on relationships and agency built in the conversation between the actors, modes brings a systems thinking perspective to the inquiry. For

¹⁵⁸ For more detail, see John Zimmerman's paper Designing for the self: making products that help people become the person they desire to be. In Proceedings of the CHI '09. ACM, New York, NY, 395-404.

¹⁵⁹ For more detail, see Lockton et al., Influencing interaction: development of the design with intent method. In Proceedings of the Persuasive '09, vol. 350. ACM, New York, NY, 1-8.

instance, Reverse Alarm Clock is by no coincidence named as an ‘interactive system’. The basic of the systems thinking is the question of whether the elements of the system are responsive, reactive, or autonomous (active) defines whether the system is an open adaptable system¹⁶⁰.

Reverse Alarm Clock instantiates those reactive, responsive, and pro-active moments through its subplots. The clock is reactive to the child’s putting tokens into the treasure-chest music box, responsive to the child’s wake-up when it is not the right time to wake up, and proactive in the morning when it is time to wake-up. The relationship between parents, child, and the system is facilitated through the subplots that the designer deliberately created. The clock in the long run is thought of as a companion to the child, when the product grows with the child and with the child’s developmental cycle, when she is learning using time and making decisions.

Consideration of the adaptability of the system over time can help the community of use pursue a more sustainable open system. With this instantiation, in the future, modes can be applied to other complex and wicked problems where different perspectives and paths are necessary to unveil the relationship between part and wholes. Another resonance between systems thinking and modes is the notion of *emergence*. Emergence is the quality of composition where the whole is bigger than its parts. The emergence in modes is the harmony. With each plot, variations of harmony as a principle emerge in the situation, such as ordering, integrity, meaning, and unity.

Life Style Transitions

This inquiry echoes Pantzar’s perspective on the human product relationship where the conversation between the actors-- designer, people, and the product-- are cyclical, meaning that they are continuous, reciprocal and holistic¹⁶¹. Such a cyclical conversation and diffusion of

¹⁶⁰ Russell Ackoff, Towards A System of Systems Concepts, *Management Science*, Volume 17, No 11, 1971.

¹⁶¹ Mika Pantzar, Domestication of Everyday Life Technology: Dynamic Views on the social histories of artifacts, *Design Issues*, Vol. 13, No. 3 (Autumn, 1997), pp. 52-65.

products in transitions promises a transformation in the way people live their lives, so to speak in their *life style*. I take the concept of life style cautiously due to the connotations with the so-called ideas from fashion. This inquiry on transitions suggests a new way of looking at life style through ritual, performance, and routine plots where the products become pro-active agents for meaning making regardless of the context of the transition. I perceive this as a more holistic approach to the issues regarding human behavior and social change, i.e, health-care, sustainability, and green practices. Contrary to the persuasive technology¹⁶² efforts where researchers use positive and or negative reinforcements as ways to change behavior or trigger societal change, modes of transitions can offer more natural ways through deploying affordances and resources of action. Modes partially entered to the domain of life style transitions with the Adapt-A-Ride project, where one of the motivations is to inhabit a social yet sustainable commuter life style. In the future, I would like to inquire more into the domain of the lifestyle transitions through communication, care, and community products, which were reviewed as relevant product ecologies for transitions in the heuristics exploration of the inquiry.

Product Ecologies: Communication, care, community

At the beginning of the inquiry I unveiled four types of transitions: spatial, social role, life-stage and environmental transitions. A comprehensive look at the existing products revealed that there are certain product ecologies¹⁶³, namely commuting, communication, care, and community products, addressing these transitions.

All of which are fertile grounds for the modes of transitions regarding the spatial, social role, and life stage transitions. These products can be situated across the orders of design:

¹⁶² B.J. Fogg, *Persuasive Technology: Using Computers to Change What We Think and Do* (Interactive Technologies) Morgan Kaufmann, 2002.

¹⁶³ J. Forlizzi, The Product Ecology: Understanding Social Product Use and Supporting Design Culture. *International Journal of Design* [Online] 2:1, 2008.

service, interaction, product and visual communication design. One common quality to the transition products is the agency, which is created through the conversation over experiential plots. Agency is critical to the transitional products since it is the cause for the breakdowns and frustrations during the flux of transitions.

This inquiry has some limitations over the projects regarding their scope and depth, due to the constraints of time and resources. Future work can address long term transitions such as the life stage and life-style transitions within the care and community product ecologies. Life style transitions can be related to the intentional changes such as acquiring a new habit for sustainability; or unintentional changes, such as adapting to a chronic illness. Modes of Transitions will bring the routine, performative, and ritualizing elements of transitional experiences into consideration from understanding to the action (design) phases. It does the weaving of these plots simultaneously through scenarios embodying stories.

Take teenagers who are diagnosed with diabetes as an example. There are at least two layers to the transitions, the life stage transition from childhood to adulthood and the life style transition of a chronic illness. While approaching such an interwoven transition, modes can bring the dynamics of routine building and meaning making, social roles and life story perspectives at the same time. Bringing both the action and values themes to the attention of the designer, modes will help to address harmony both in functional and quality-of-life issues. Take another example of immigrants who begin living and working in a new country. An environmental and life style transition of moving to a new country, and a life stage transition of starting a new job are the two obvious layers to the transitions. Thinking of the migration transitions, either it's voluntary or due to a disaster or war, there is little attention in the design communities to address such complex and societal issues. The current handlings of these transition situations are left to the overarching initiatives such as UN, UNICEF, and local governments, where design's voice is barely heard. I see modes of transitions as one of the entry points to approach such complex issues with its

capability to bring different elements of experiences to the table. In short, I would like to move forward with the modes of transitions not only thinking of products but also raising designerly ways of thinking in public services and policies.

A last example of a future direction can be more on subtle transitions of everyday life. Among the contexts such as family, work, and social, there are the subtle daily-life transitions. These transitions are dialogical yet reflective, meaning that the person is treating herself as a separate person and have a conversation with her. As future work, there is a need to flash out these subtle transitions and facilitate self-to-self conversations through products. These conversations will be particularly relevant for behavioral change with intentional, accidental, ethical, and spiritual qualities.

This inquiry begins with the observations that transitions posit a paradox of flux and order; people are artfully competent in adapting to these transitional situations by taking products as their companions. One of the objectives of the inquiry is try to unveil the dynamics behind these observations and move forward in the designing of products for transitions. It achieves this by discovering character and explicitly introducing it to the design. Character functions as the principle shaping the agency in the transitional situation where products become actors of a healthy conversation. Discovery of character led me invent four plots/modes that can foster the conversation between the products and people. Modes do this by framing the experiences with action and values themes. Future work can take on the promise of modes in long-term and or macro level transitions and bring talkback and conversation to the wickedness of transitional situations.

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