

Closer Kin

Building Stronger Family
Environments by Design

Kevin Cook



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In loving memory of my mother, who gave me the love and
patience in my childhood that made me the person I am today.

Abstract

“Closer Kin: Building Stronger Family Environments by Design”

Children growing up with limited financial resources face a range of social and emotional challenges that children who grow up with economic security do not. Due to stress and time constraints, quality time is often compromised and low-income parents are less likely to provide their children with the stability and attention that is necessary for optimal development. This design thesis explores the consequences of this compromised family time as a result of living with low income and provides a portfolio of designs to give parents and children more and better time spent together. Structured as an 8-month design exploration, this thesis uses human-centered design methods to research the problem space, define opportunities, and imagine immediately implementable and scalable proposals for families where conditions are working against them. Through primary and secondary research, it identifies areas of intervention including family structure, parental support, and family identity, and suggests a suite of design proposals to address them. Design solutions include physical products that nudge daily interpersonal interaction, digital platforms for keeping consistent bedtime routines, and mobile applications for boosting parents' confidence by reinforcing their sense of identity as good parents. By fostering stronger family environments, these solutions aim to promote resilience, overall well-being, and healthier human development among children of low income. Ultimately, the purpose of the resulting proposals is to reduce future inequalities for disadvantaged children.

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01

Introduction

Why Family

1.1 Introduction

“A growing fraction of our children are being born into disadvantaged families, where disadvantage is most basically a matter of the quality of family life and only secondarily measured by the number of parents, their income and their education.”

—James Heckman,
American Economist

Big Problem, Simple Idea

Limited resources causes a lot of problems for families beyond the obvious. In addition to the tangibles—adequate food, secure housing, access to healthcare—families of low income often struggle with the kind of social-emotional nurturing and stability that educators, health experts, and psychologists believe contribute to overall well-being, positive development, and resilience.

For children facing adversity, positive socio-emotional validation in the home could promote resilience, allow for healthier



Figure 4.
Diagram showing
the many challenges
that families of low-
income face

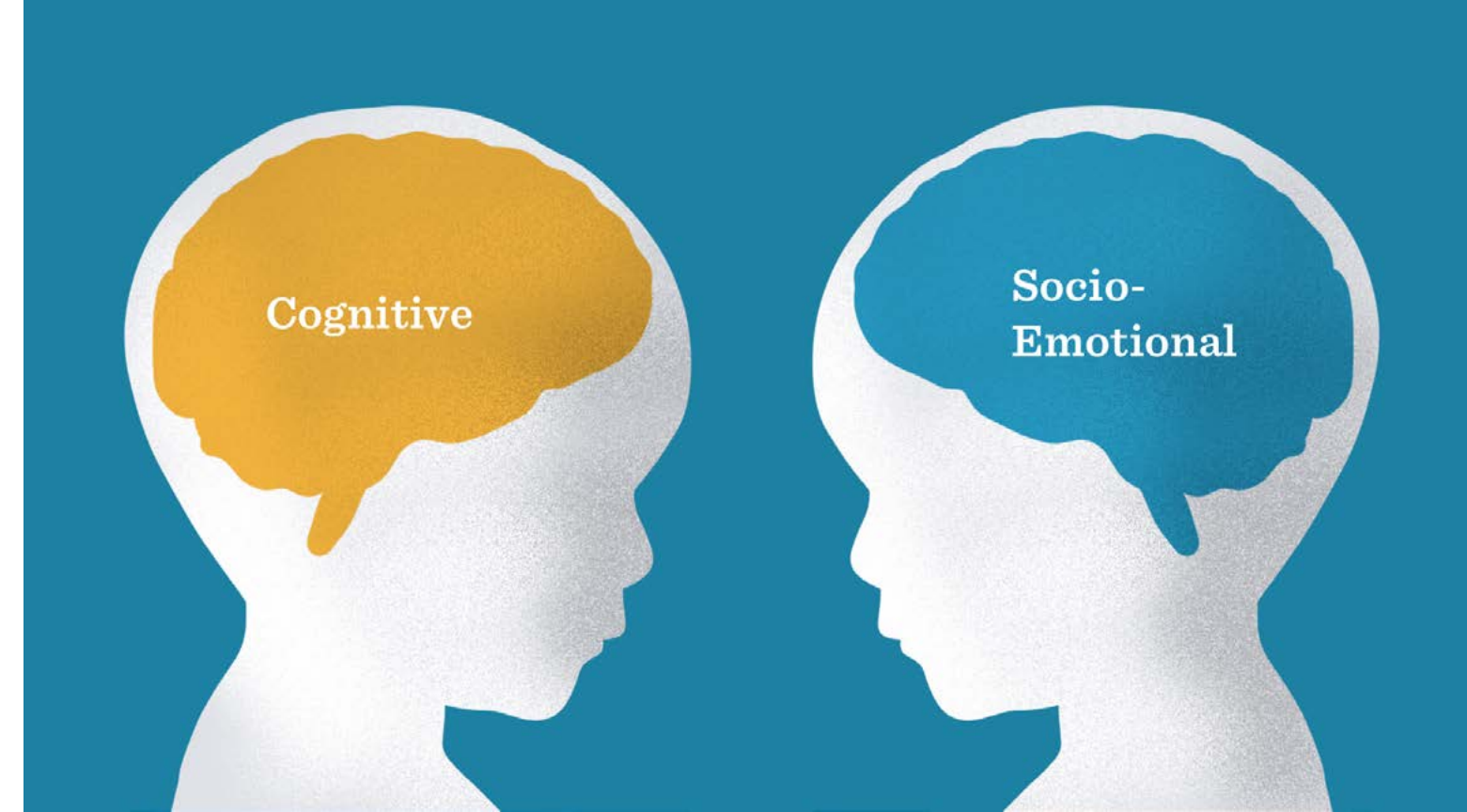
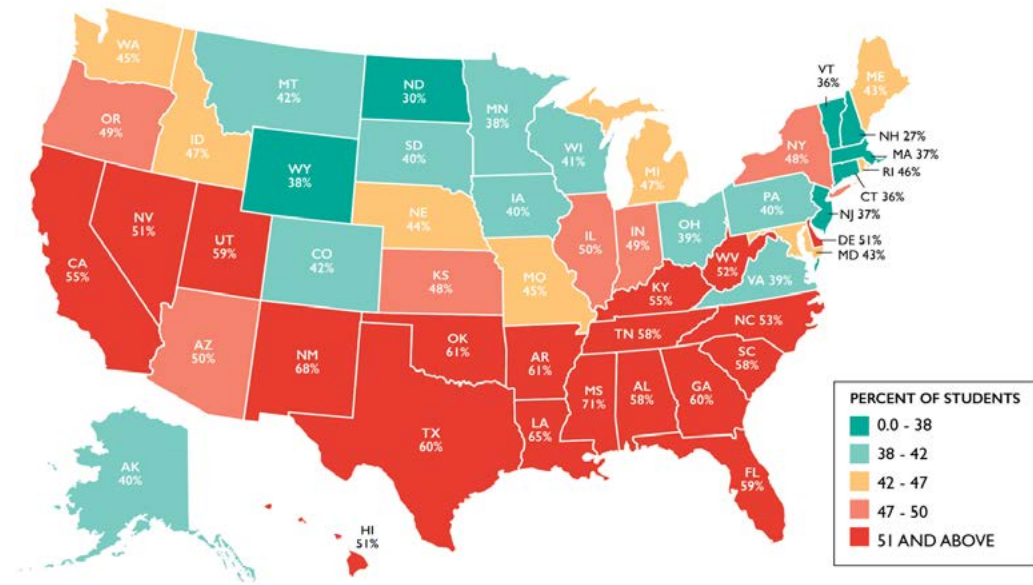
development and ultimately reduce future inequalities.

This thesis is about using design to create stronger family environments as a strategy for resilience, well-being, and healthier human development among children

of low income. Where design can have the greatest impact is with relatively inexpensive, scalable, and immediately implementable interventions that create positive interpersonal relationships between parents and children of low-income families.

PERCENT OF STUDENTS

- 0.0 - 38
- 38 - 42
- 42 - 47
- 47 - 50
- 51 AND ABOVE



A Case For Family life

In 2013, 51% of the country's public schools fell below the federal government's threshold for being low-income. This number has been steadily rising since they started keeping track in 1989. Today, over 15 million children live in families whose household income is less than \$21,000 a year (Tough, 2016).

However, according to James Heckman, the greatest disadvantage of poverty for children is not in the lack of income or parental education, but in the quality of family life (Heckman, 2013). Apart from the challenge

of financial insecurity and access to healthy food, the indirect consequences of living with limited resources impacts families on a deeper, socio-emotional level.

Starting at a young age, our families provide a secure base from which we develop individual autonomy (Fiese, 2006). Both cognitive and socio-emotional skills like self-regulation and resilience develop in early childhood, and their development depends on the quality of interpersonal interaction with caregivers. Apart from socializing children, families help children succeed

both by fostering positive development and by preventing problematic outcomes. For example, we develop resilience simply by knowing if someone that cares about us is available (Masten, 2014). Parental warmth at the right times can also buffer the toxic effects of an adverse experience (Blair & Raver 2012). For children, stability and responsive parenting are the ingredients for early development, well-being and resilience that sets the stage for all else that will come after. However, when families have limited resources, the conditions to raise a child are invariably working against them.

Low-income families struggle to provide adequate care during these early years due to unfavorable time schedules, stress and traumatic conditions such as crowding and a safe environment. Children experience this trauma through the pathways of their parents in the form of decreased nurturing and instability. Ultimately, for a growing brain, these conditions are unfavorable for optimal development.

Figure 6.
An estimated 30%
of the American
workforce operates
on non-standard
work shifts



How Families are Vulnerable

For families living with limited resources, time is never in their favor. According to the Economic Policy Institute, an estimated 30% of the American workforce operates on non-standard work schedules—anything but 9–5 (EPI, 2015). Furthermore, these schedules are most common among low-income single mothers. Although some parents choose to work such shifts to spend their days with their children, for most, working non-day shifts is a job requirement. However, the unpredictability that comes with today’s algorithmically scheduled shift work has consequential effects on family life.

In these environments, more hours are spent away from home, families are less likely to share meals together, and family members characterize their home life as “hectic, unstructured, unpredictable, and, at times, simply out of control” (Evans et al., 2005). According to Fiese, chaos consistently affects children’s adaptation and behavioral outcomes negatively. Whereas parenting may influence development at the proximal level through responsiveness and sensitivity, at the level of the family, time and allocation of time are valuable for development. (Fiese and Winter, 2010).

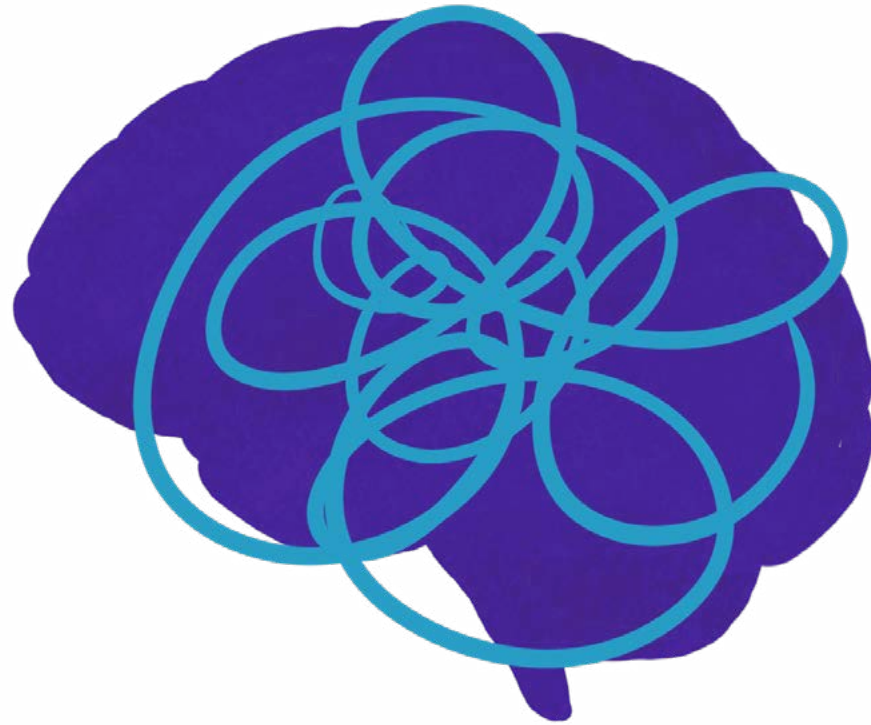


Figure 7.
Parental stress
affects children
through the path-
ways of the parents

For children, predictable routines provide children with the necessary stability which allows for growth and self-regulation. When children don’t know what to expect, their development and well-being is compromised.

The high demands of raising a child coupled with limited resources and limited time ultimately result in added stress on parents. Although children may not feel the stress directly, they are likely to experience it in the form of unpredictability, neglect or even harsh behavior. The environmental stress of chaos, exhaustion and insecurity, there-

fore, affect children through the pathways of their parent (Evans, 2006). Children are proximally influenced by parenting through consistent exposure to supportive interactions or through direct contact, and thus such features as sensitivity and warmth are essential (Fiese and Winter, 2010). In struggling families, where parents are sleep-deprived, stressed out or even depressed, children have less warm and sensitive engagement with their parents.



The Sum of our Experiences

Apart from tangible consequences, less engagement affects children's mindsets. Positive interactions with family members lay the foundation for children's non-cognitive skills to develop. Non-cognitive skills sometimes referred to as character traits or socio-emotional skills, are the set of characteristics including persistence, self-control, and focus that is arguably more important than IQ in one's outcome in life. Basic skills like self-regulation and executive functioning beget more and higher level skills such as resilience and self-direction. Over time, these positive influences begin to reinforce one another. Conversely, not having the

bedrock such as self-regulation or executive functioning at an early age puts children at a disadvantage for further learning as they develop (Stafford-Brizard, 2016).

Unlike logic and reasoning, however, non-cognitive skills are not the types of skills that can be learned in a classroom. They can't be rehearsed or studied for like math or science (Duckworth, A. L. & Eskreis-Winkler, L. 2013). Instead, they are the perceptions we develop from our lived experience. They derive from the messages and signals that are embedded in the daily interactions we have with those closest to



Figure 8.
Common character strengths—the cognitive and personality traits that promote autonomy and human flourishing

us, especially within the family.

When put together, these messages build a mental model for how we see the world. As David Brooks states, we are not the products of conscious thinking—we are primarily the product of thoughts that happen below our level of awareness (Brooks, 2011). In other words, our everyday social interactions, starting at birth, compose the unique operating systems for which we conduct our lives.

Research and practice have demonstrated that many children, particularly those experiencing the stress and adversity of

poverty, do not acquire non-cognitive skills and mindsets at the developmentally appropriate age (Blair & Raver 2012). Kids with limited resources are disadvantaged because they have a less positive engagement with their parents and are less likely to be exposed to the types of interpersonal experiences that allow for these non-cognitive skills to develop. If the constant stream of messages children receive are unsafe and unpredictable, that will be how they see the world. With these beliefs, a child's negative outlook acts as a multiplier to any tangible disadvantage they already have.

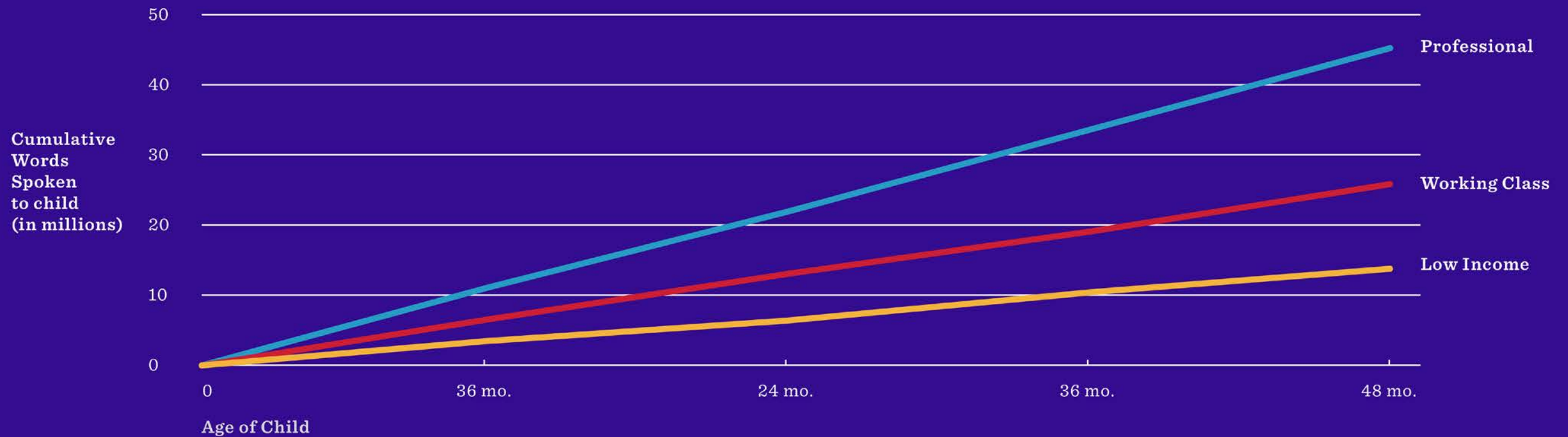


Figure 9.
Diagram shows the difference between low-income and professional families in the number of words heard by their children in the first 4 years of life (Hart & Risley, 1995)

Increasing Inequality

According to Heckman, American society is dividing into skilled and unskilled, and the roots of this division lie in early childhood experiences (Heckman, 2013).

The national achievement gap refers to any significant and persistent disparity in academic performance or educational attainment between different ethnic groups or students from higher-income and lower-income households (Glossary of Education Reform, 2013). In 2003, a report was issued

analyzing the causes of the gap and how it correlated with group differences based on ethnicity and income level. Sources for the gaps in student achievement were split into two distinct groups: school-based and home-based sources. School-based sources including rigor of curriculum, class size and teacher participation held gaps primarily between majority and minority groups. Gaps caused by home-based sources including parent participation, parent availability and television watching existed primar-

ily between high and low-income groups (Barton, 2003).

This data, although disturbing evidence of school segregation and unequal funding for minority groups, suggests that the social disadvantages of living with limited resources are somewhat universal and originate from factors in the home. Therefore, if these gaps are to be narrowed between high and low-income groups, the solutions should address home-based sources.

Over time, the disadvantages rooted in socio-emotional deficiencies from living in poverty cause and perpetuate the poverty cycle itself. Without developing the necessary social aptitudes, these children are highly likely to have low lifetime earnings and face a range of personal and societal troubles, including poor health, teen pregnancy, and crime (Heckman, 2013). Alas, poor children are likely to stay poor when they grow up.

A Theory of Change

The focus of this thesis is on creating positive interpersonal relationships between parents and children of low-income families. My hypothesis is that with the right nudges at home, the strong bonds created between parents and children could buffer against adversity, improve overall well-being, and allow for healthier development. Together, these interventions aim to reduce future disparities for children of low-income families.

For these families, having more money is a possible answer to many of the aforementioned problems. However, for the 40 million families living below the poverty line, and the many others that could still use the additional support, this option is far too expensive.

Design, through the creation of new products, services and experiences, has the benefit of being scalable, adaptable, relatively inexpensive and immediately implementable. By nature, mass manufacturing has the ability to reach and benefit a broad audience. The design process itself is gener-

ative and iterative, meaning many solutions could be tested and improved over a short timespan. Furthermore, the data collection capabilities available in household products today promise quicker turnarounds for knowledge sharing and value creation. Products, whether bought by individuals, made possible through philanthropy, or subsidized by government programs, have behavior changing capabilities with a high impact to cost ratio. Finally, in comparison to the extensive time frames of longitudinal studies, product interventions abide by the laws of the market and can be deployed as soon as they are demanded.

Alas, design is not the only answer. Insead, my argument is that products and services could be a compliment to the education programs and health policies that already exist in the field of developmental psychology and social work. I believe here, design is uniquely positioned to provide a new type of value that can benefit families in need and promise a more equitable future for today's youth.

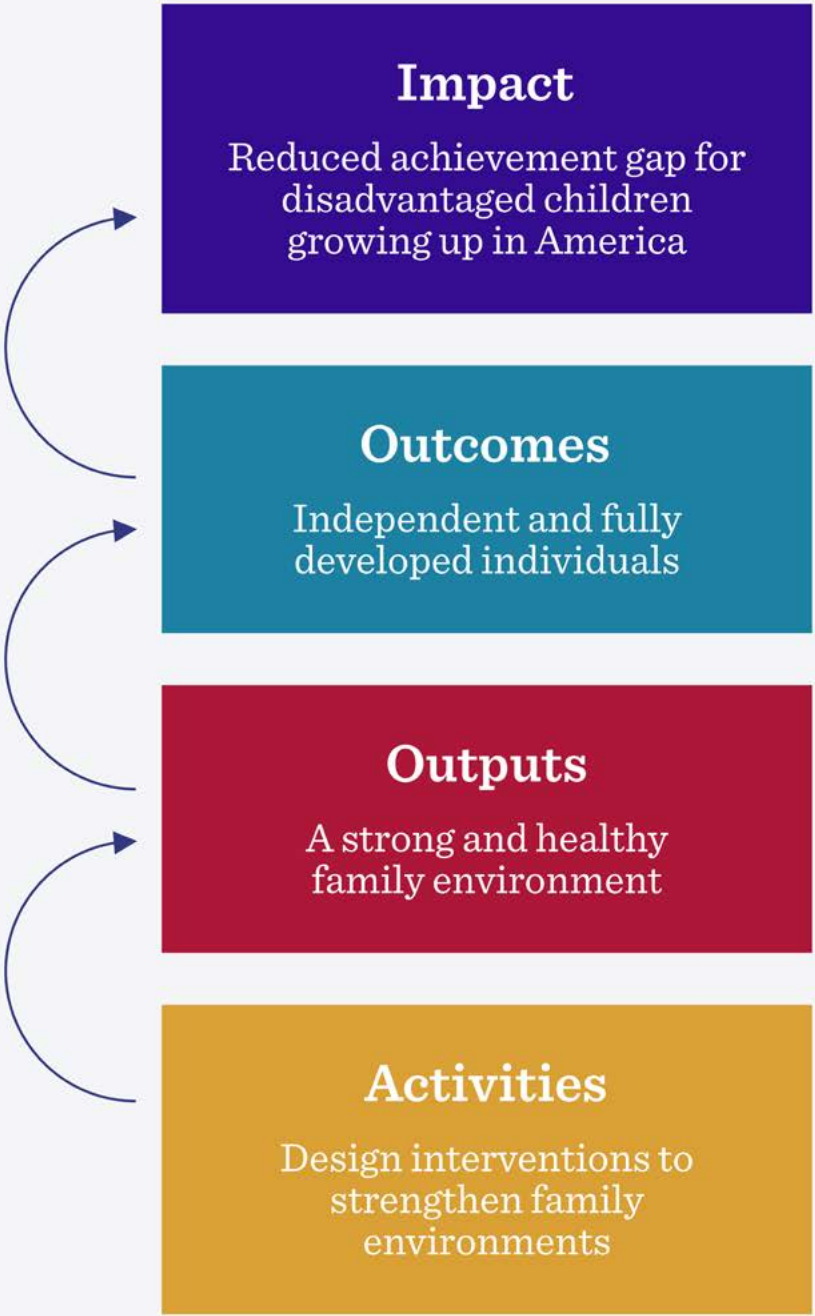


Figure 10.
Diagram showing
the thesis theory
of change

1.2 Approach

The Double Diamond

This thesis project is structured as an 8-month design exploration. In order to keep on track and deliver successfully, I used the double diamond innovation process as my underlying architecture. Here, I'll use it as a linear framework to navigate through this book.

At the highest level this innovation process moves from point A, a fuzzy question, to

point B, an answer, product or solution (Figure 1.). As we move in a little closer, we see that there are two distinct sections: designing the right thing and designing the thing right. Each section is then split into two separate phases—first diverging and then converging. Finally, amidst each phase are individual processes that make up the work required to move from point A to point B.

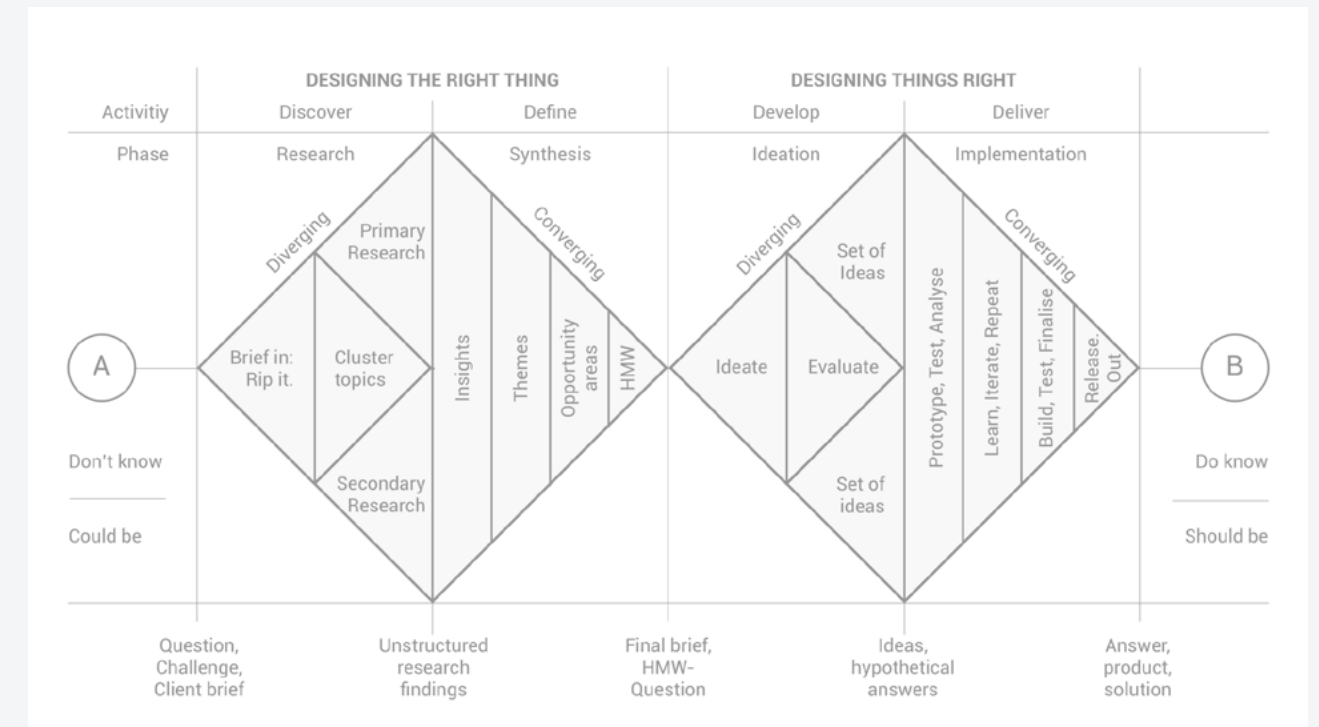


Figure 1.
A diagram of the
Double Diamond
design process
by Dan Nessler

Designing the Right Thing

In the fuzzy front end (Figure 2.) of the design process, it is often not known whether the deliverable of the design process will be a product, a service, an interface or something else. The goal of this exploration is to define the fundamental problems and opportunities and to determine what could be (or should not be) designed (Elizabeth B.-N. Sanders and Pieter Jan Stappers, 2012).

Discover

The discovery phase is the most straightforward research phase, consisting primarily of information gathering—literature, expert interviews and talking to users. It's a divergent and generative process. The purpose is to collect as much information as possible. By doing so, one can begin to understand the landscape and stakeholders.

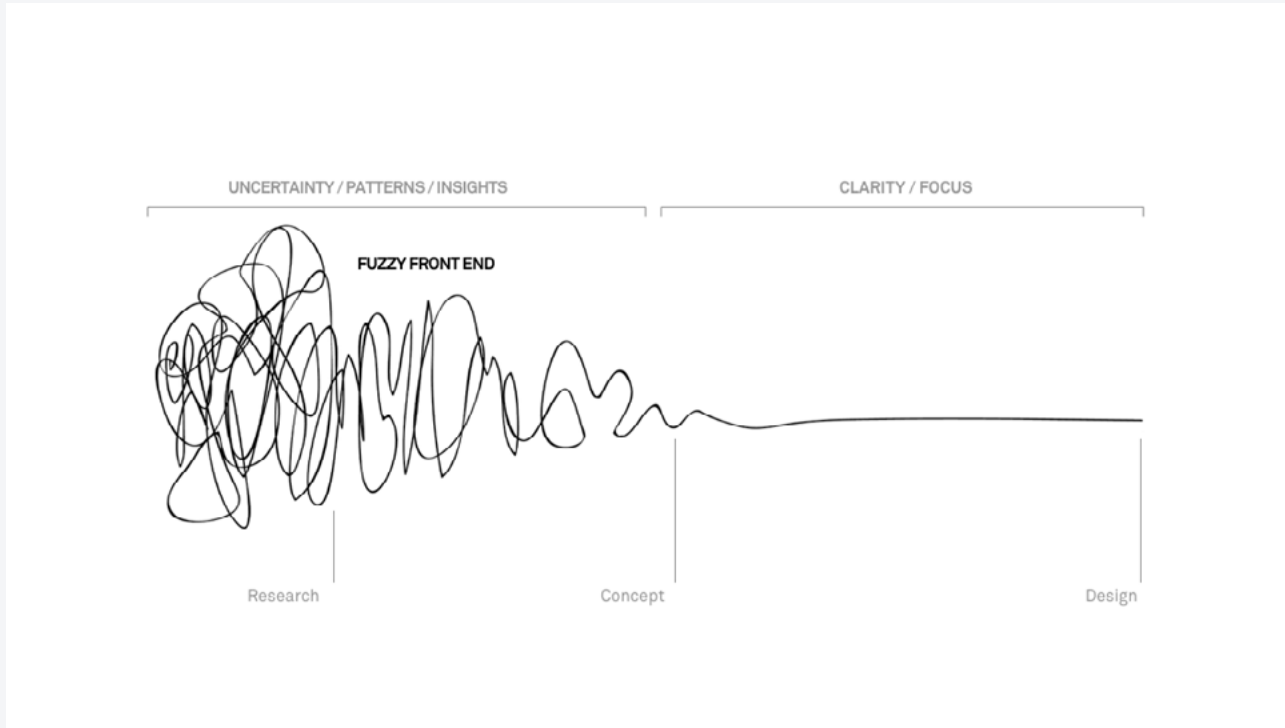


Figure 2.
The fuzzy front end
of the design process
by Damien Newman

Define

The define stage is about creating clarity. It converges on the information gathered in the discover phase—translating insights into themes, framing the problem space, identifying areas of opportunity and reframing problems as questions. In this phase, a set of principles for how to approach the final design and its users is also established.

Designing the Thing Right

Once we have a clear question we want to answer, we may begin coming up with solutions to that answer. However, at this point, the deliverable of design process, aka. our solution(s) is still unclear.

In order to design the thing right, we must go through another round of diverging and converging, this time centered around the problem statement we've defined for ourselves.

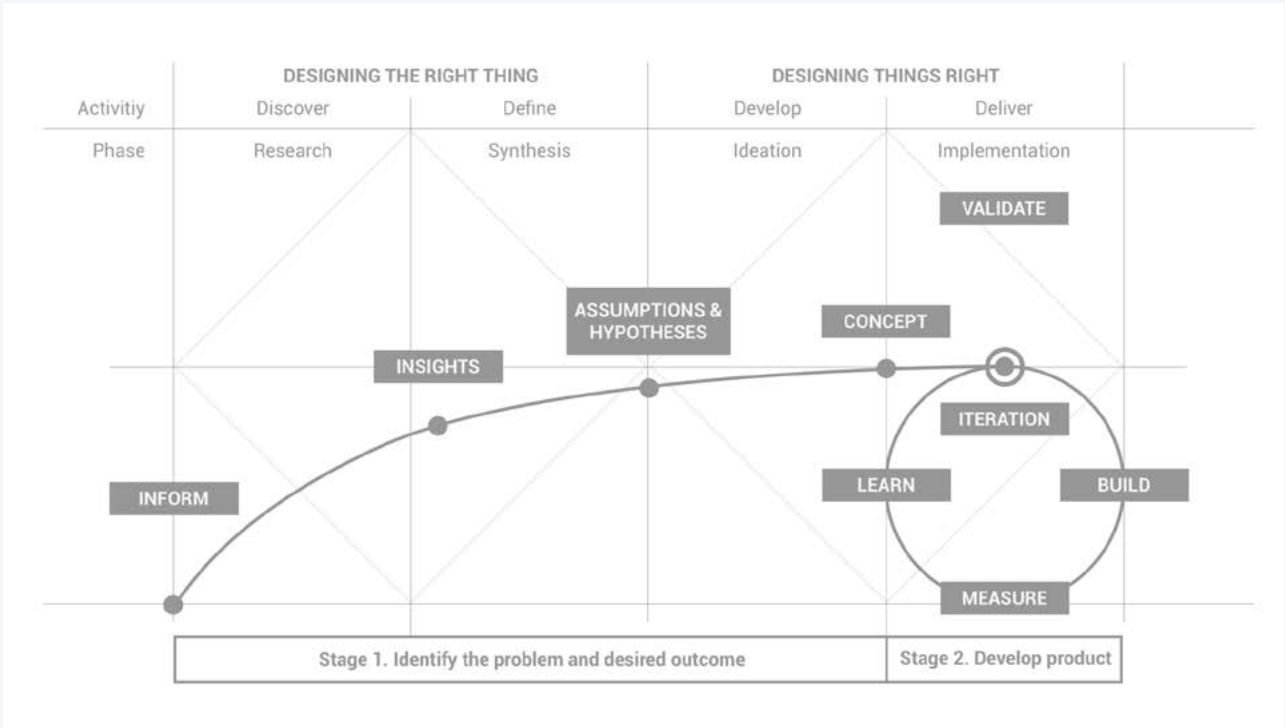


Figure 3.
Key checkpoints
across stages during
the Double Diamond
process

Develop

The development stage is about leaving no stone left unturned. This stage diverges by means of hypothesis. Sketches, design probes, and rapid prototypes allow for quick explorations of potential solutions.

Yet again, this phase is generative by nature, not only to weed out the bad ideas, but also to identify the good ones. Having an abundance of options gives us plenty of alternatives to evaluate. Concepts are also kept scrappy at this phase so bad ideas are easy to kill.

Deliver

Once we have a hypothesis, we'll need to validate it. At this point, the strongest concepts should be chosen to move forward with. The delivery phase is primarily focused on fine tuning stronger ideas to make sure they work as intended with the appropriate users.

The designer tests, iterates and finalizes the prototypes created in the development stage. The resulting deliverables clearly answer the problems that were defined.

02 Research

Discovery Phase

2.1

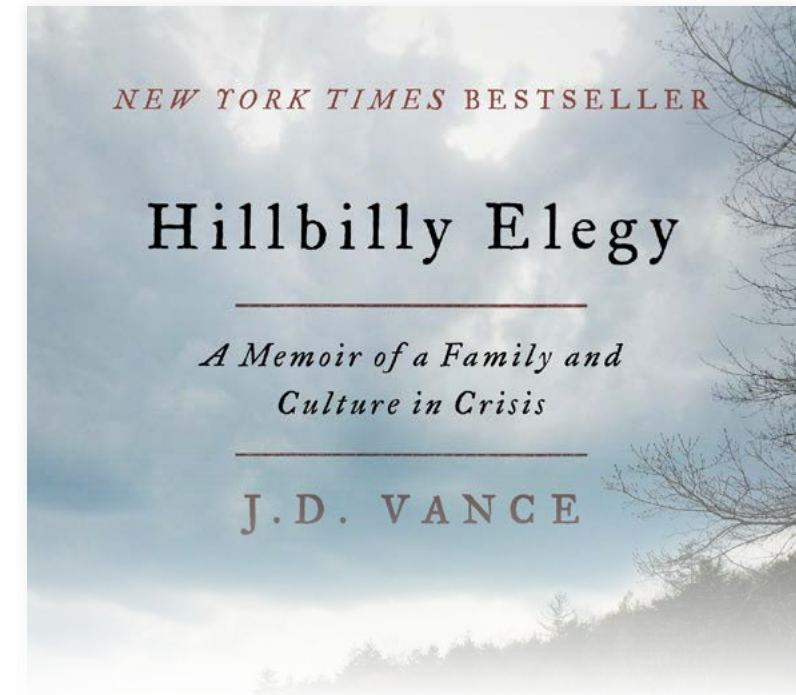
Literature Review

“Parental warmth [love], responsiveness [support] and consistent pattern of discipline [structure] offer strong avenues of influence... Both family practices and beliefs [identity] contribute to the health and well-being of individual members.”

—Barbara Fiese, Author of
Family Routines and Rituals

Secondary Research

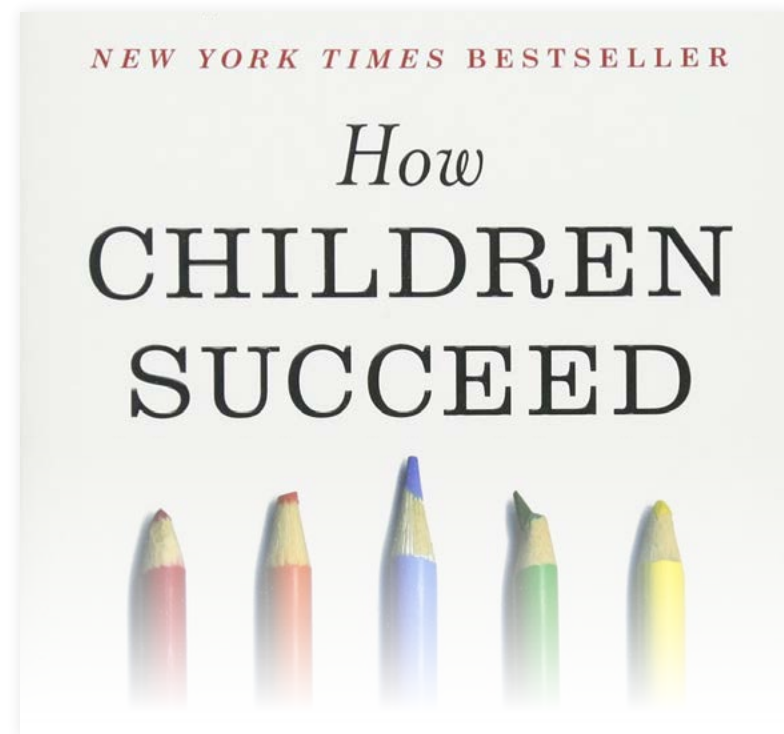
In the months leading to this thesis year, I immersed myself in readings around the psychology, politics and economics of family life. I read up on the history of the modern American family, the science of childhood development and the social struggles that American families face today. The following literature review briefly summarizes the highlights these readings.



J. D. Vance

The Hillbilly Elegy

This book is an autobiography of J. D. Vance—a working class Ohio native with his roots in Kentucky Appalachia who managed to pull himself out of poverty and attend Yale law school. Vance explains that the biggest inhibitor to success at home—more depleting than the material poverty his community faced—was spiritual poverty. For many in his hometown, this debilitating mindset was a product of broken families, bad habits, low morale and childhood trauma. It was the stable and loving home that his grandmother provided that allowed him to beat the odds and rise out of poverty. This idea that having a warm and a supportive environment can make all the difference was a guiding inspiration for my thesis work.



Paul Tough

How Children Succeed

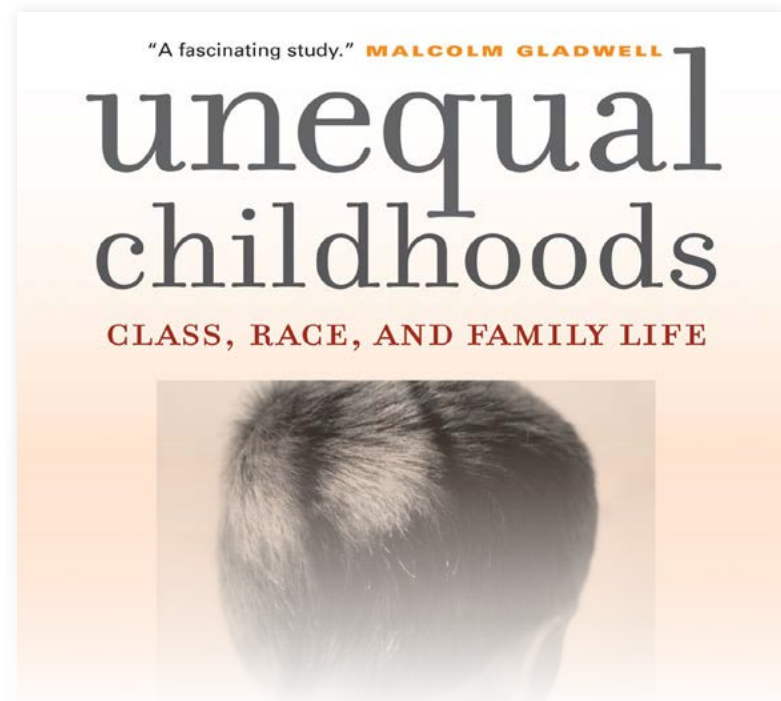
Paul Tough echoes Vance's argument about warmth and mindset in scientific terms. Tough introduces the notion of non-cognitive skills, how they are developed, and how they influence achievement and success in life. Non-cognitive skills, unlike logic and reasoning, are products of our early environment. Tough explains how subtle parenting behaviors, like being attuned to a child's mood and responsive to emotional cues, can have lasting effects on the brain's hippocampus. It was here where I realized that these subtle behaviors can be designed for.



James Heckman

Giving Kids A Fair Chance

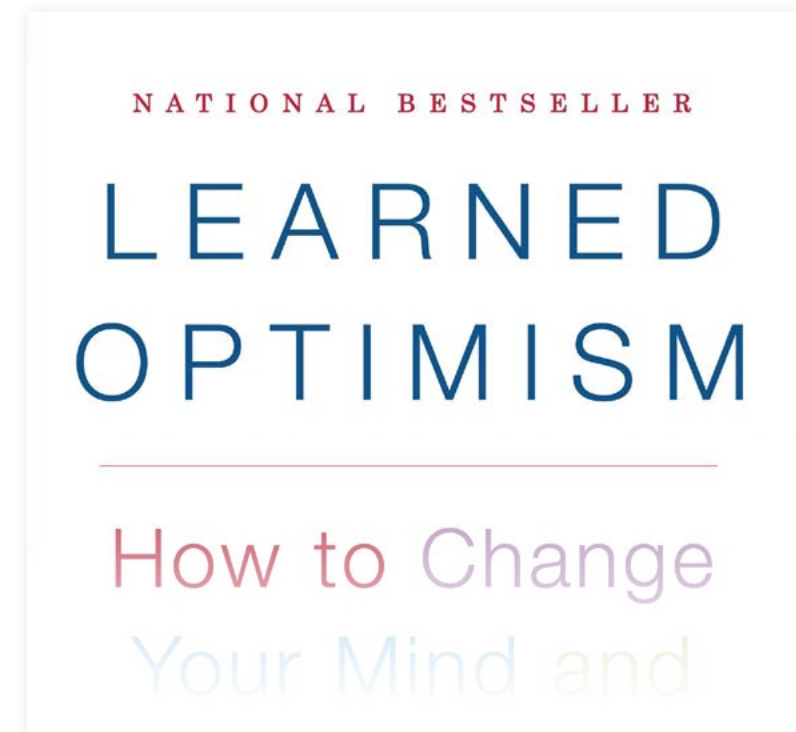
American Economist James Heckman is one of the fathers of early childhood interventions who is pushing emphasis on non-cognitive skills at a policy level. Heckman argues for interventions at an early age because both cognitive and non-cognitive skills become more rigid with time. From a fiscal perspective, the earlier, the higher the benefit to cost ratio. Heckman shows evidence that intervening early can produce positive and lasting effects on children in disadvantaged families and argues that these interventions should address socio-emotional skills.



Annette Lareau

Unequal Childhoods

Annette Lareau describes the differences in parenting styles across socioeconomic classes. According to Lareau, high-income families use a parenting method called concerted cultivation whereby children engage in organized activities and are exposed to a constant stream of learning experiences. On the contrary, low-income children spend most of their time in unstructured play. Although both parenting styles have their virtues, children raised in concerted cultivation are better equipped to navigate the world of organized institutions. This insight was important in understanding that social disparity between high and low income children is rooted in culture.



Martin Seligman

Learned Optimism

Martin Seligman argues that optimism and pessimism are behaviors learned from experience. Pessimism and optimism are derived from one's explanatory style: the manner in which one habitually explains to oneself why events happen. Revelently, explanatory style is a habit of thought learned in childhood and adolescence. One's explanatory style stems directly from an individual's view of place in the world—whether one think they are valuable and deserving, or worthless and hopeless. This text surfaced many reflections about social environment building. If a strong environment is defined by the operating system of the group—the thoughts, signals and explanations that occur between individuals, how could that system be reinforcing rather than depleting?



Barbara Fiese

Family Routines and Rituals

Barbara Fiese explains family life from a systems perspective. She argues that families provide structure and order that supports the health and growth of its individual members. Yet, in order for individual members to be healthy they must also be autonomous and possess their own identity. Routines and rituals allow families to examine not only how the individual perceives his or her place in the family but also how the family, as a group, regulates behaviour in response to the individual. This text made me realize that if design interventions are to be effective, they cannot operate at the individual level. Instead, they must acknowledge and empower all members of the group.



David Brooks

The Social Animal

In his book, David Brooks makes a case for character. He argues that individuals who are dependable, persistent after setbacks, and able to recognize their own weaknesses are those that get far in life. However, we've created a giant apparatus for the cultivation of hard skills at school while ignoring the moral and emotional faculties. Children are coached on how to jump through a thousand scholastic hoops, yet by far the most important decisions they will make are about whom to marry, whom to befriend, and how to control impulses. These "emotional faculties" are not the products of conscious thinking. Instead, they are the thoughts that happen below our level of awareness and informed by our environments.

2.2

Interviews

“When it comes to attachment, secure means certain—it means having trust or an expectation that the person is available.”

— Dr. Everett Waters,
Stony Brook University

“The natural ability to parent is not a thing. It’s based on our own experience.”

— Dr. Marisa Morin,
Columbia University

Subject Matter Experts

Over the course of the first semester, I interviewed 22 subject matter experts to gain a broad insight into the landscape of child development and family relations. Among these experts were researchers, developmental psychologists, family therapists, educators, and social workers. These conversations with experts led me on a path of discovery and helped me expand my knowledge of my subject area.



Gary Evans

Cornell University

Environmental & Developmental Psychologist

Gary and I talked about how physical environments and daily experiences affect brain function, child development and outcomes later in life. We discussed the physical factors that affect well-being at home, including things like noise, crowding, and neighborhood quality. One of the most important insights Gary shared was that many of the physical elements that affect kids do so through the pathways of parents. In irritating conditions, parents are less responsive and sensitive to the needs of their children when they need it.



Jennifer Rittner

Content Matters

Communications Strategist

Jennifer and I talked about different stages of development, how children build models of the world and the importance of mirroring signals. Signals, verbal and non-verbal, are the ways children learn that they are welcome, valuable and loved. The way in which parents respond to their children's emotional cues is how their kids develop an understanding of the world around them. It is also important to note that different stages of development require different responses from parents and caretakers. Young kids need signals of attention to internalize that their presence is valued. Older kids need signals that they are trustworthy to internalize that they can be taken seriously.



Deena Chochinov

Councilor

Family Enterprise Advisor

Deena and I talked about building a sense of safety and security in the family. We also defined some elements of what makes a family environment a healthy one. We discussed how people who don't have a safe family upbringing have a greater chance of feeling at threat later in life. Deena defined security as the feeling that you can always come home because that door is always open. Children feel safe when all their needs are met but are also given room to become their own people.



Barbara Rudin

Manhattan Group

EVP, Ph.D. Child and Family Development

Barbara and I talked about military families, flexible parenting roles, and the importance of open and honest communication in the family. Barbara introduced me to government programs like Head Start that aim to break the poverty cycle by providing services for young children and parents. We discussed some of the challenges these programs have, including how undocumented immigrant families are scared of bringing their kids to federal programs because they fear they may be deported. Finally, we discussed how early intervention (age 0-5) is the most effective time to make a long-lasting positive difference in a child's life, and the time when the smallest investments have the biggest payoffs.



Nick Smith

Success Academy Charter Schools

High School Teacher

Nick and I talked about why certain kids act up in school and how some behavior problems at school are related to problems in the home. Nick spoke from his own experience, describing how kids feel that getting attention from their peers and teachers is more valuable than learning. As a teacher, Nick's strategy is simply showing an interest in them and holding them accountable. He said doing so removes the need for them to act up in class.



John Thackara

Doors of Perception

Author and Advisor

John and I talked about certain recurring aspects of family life that are signs of health. We discussed healthy communication and internal feedback mechanisms as a means of parental confirmation. John pushed me to uncover the circumstances under which parents feel they are doing something useful for their children. We also brainstormed ways where kids could take on an active role in providing these feedback mechanisms.



Susan McHale

Penn State University

Professor of Human Development and Family Studies

Susan and I talked about the importance of family time as a way to build strong relationships and a family culture. Family time, not just with an individual parent, but with mothers, fathers and other siblings is linked to more positive development. Kids who maintain close relationships with their parents are less involved in risky behavior, including sex, drugs, and alcohol. Echoing Deena's comments, Susan explained that kids want proof of how they're part of their families, but also how they're unique, and want to know what they might become in the future.



Alan Waxman

AWEcosocial

Landscape Architect, Social Entrepreneur

Alan and I talked about framing the thesis as a message to parents and being careful to not use a condescending tone or to try and correct parents' behavior. People won't resonate with being a bad parent, but they might be interested in being better parents. The trick is to find out how to encourage parents into creating a supportive environment when that's not the type of love they received as children.



Everett Waters

Stony Brook University

Professor, Social and Health Psychology

Dr. Waters and I talked about how children form secure attachment relationships with their parents. Secure means certain—it means having trust or an expectation that the person is available. One of the main features of a child being securely attached is when their parents serve as a base to retreat to. Kids think they'll be safe, secure and confident when they believe their parents will always be there for them.



Greg Fosco

Penn State University

Professor of Human Development and Family Studies

Greg and I talked about different stages of cognitive development and how children are emotionally impacted by everyday activities. A child's brain isn't developed enough to see as far into the future. This means that emotional volatility is directly reactive to the immediate environment. When a dad spends 20 minutes with their child, for instance, it means a great deal more than the dad might expect. Praise and attention from a parent can make a kid's day. Conversely, when parents are having an argument they believe to be not very significant, it can have a much more negative impact on their children.



Jay Lappin

University of Pennsylvania

Professor and Clinical Family Therapist

Jay and I talked about the family from a systems level. We touched on the transactional model of development, interdependent family systems and preferred transformed states of well-being. Since family relationships are built on top of pre-existing interaction, each interaction serves as an input that either preserves the status quo or moves in another direction. Looking at the family as a system, strengths are found in the preferred pathways of doing things. At an individual level, optimization is about vectoring the child in the direction of the best version of themselves they can be.



Margery Leveen Sher

Did Ya Notice?

Professor and Clinical Family Therapist

Margery and I talked about the limits of government programs and the lack of knowledge parents have about the developing brain. According to Margery, government programs don't teach a lot—and teach only to a small percent of the population. There's a big opportunity for products or programs to address that since most parents need more education in child development. For example, parents can observe a child's behavior, but may not interpret it correctly. A child who needs attention might throw a toy. If the parent yells at them, they may stop throwing toys, but fail to address the child's underlying emotional needs.



Nancy Schwachter

ICF International

Program Director

Nancy and I talked about the goals and challenges at Head Start. We also spoke about the strict eligibility requirements, politics, and lack of funding. As one of the country's largest early childhood programs, Head Start focuses on school readiness and family engagement. The program's main goal is a healthy transition from Head Start to school. It was clear, however, from Nancy's descriptions, that these government programs were smothered by bureaucracy.



Marisa Morin

Columbia University

Ph.D. in Developmental Psychology

Marisa and I talked about gender roles, the ways humans learn how to parent, and the impact fathers have in children's lives. She explained how the “natural ability to parent” is not a thing—it's really based on what you've experienced. This is important because a lot of low-income fathers had absent or inattentive fathers themselves growing up. As a result, these fathers don't know how to model good behavior. In Marisa's own studies, she observed that moms are less likely to voice their confusion in a parenting problem, but dads will. There are many social norms at play here. As a society, we tell dads that they are not as important. We also tell moms that if they don't know the answer, they're bad parents.



Rosemarie Perry

New York University

Ph.D. in Applied Psychology

Rose and I talked about effective learning strategies. She explained how kids learn best from attachment caregivers. We know this because one of the biggest indicators of success in therapy is trust with the therapist. Rose and I also discussed the shortcomings of early childhood programs. She explained how center-based programs like Head Start have positive effects immediately at the end of the intervention but fade out after several years. Head Start, although starting early, lasts for only 1-2 years and is not nearly enough to inoculate against continued adversity.



Marc Dones

Future Laboratories

Senior Lead, Equitable Systems

Marc and I talked about trauma, the challenges of living in poverty, and how they relate to family relationships, development, and well-being. Mark broke down the science, explaining that the interaction between genes and the environment turn on or off the activation of gene suits, which affect the architecture of the developing brains. One of the core things that trauma does is undermine the ability to tell a story about what happened to us. Yet, in the absence of primary caregivers, we solidify the story of what happened to us. When a parent is there to buffer bad events, you can tell yourself a new story.



Meg Small

Penn State University

PRC Director of Social Innovation

Meg and I touched on some of the administrative problems with early childhood programs. In high-stress, low-resource schools, the resources available go to the higher risk kids. By third grade, there isn't a big gap between head start kids and others. It's still unclear whether non-Head Start kids catch up, or Head Start kids lose their advantages at school. Meg claims we need cumulative impact interventions for not just the children with the highest risk, but also those less prioritized by the system.



Nilam Ram & Mimi Brinberg

Penn State University

Professor of Human Development and Family Studies

Nilam, Mimi and I talked about new forms of communication, the media's impact on our relationships, and the direction of influence among family members. Nilam explained that it's not just about bringing parents and children together, it's about making sure that the relationship is positive. Parents are more likely to influence mood when kids are young, but as they grow up, they have less of an impact. He challenges parents to operate in the zone of proximal development, where tasks are just outside of their child's comfort zone.





Wen-Jui Han

New York University

Professor of Social Work

Wen-Jui and I discussed how parents' irregular shift work affects children's developmental and emotional outcomes. Child care is expensive for low-income families. For married couples, one parent will work during the day and the other will work at night so that someone can always be with the child. For single parents, they tend to rely on relatives or informal care. Often times, children are left by themselves when parents run out of options. But irregular shift work exhausts parents and as a result, they are less sensitive to their child's needs. Furthermore, children need a routine to feel safe and secure. Routine is what provides stability, which allows for growth. Chaos is not good for children. They need to know what to expect.



Kyndal Howell & Becky Hasak

The FIND Program

Managing Directors

Kyndall, Becky and I talked about FIND, the logistics of implementing a digital social program and the limits to the traditional center-based approach. Ultimately, a digital solution would help scale the program allowing more families to benefit from this knowledge and more children to build early brain connections. We discussed funding and how evidence of success is a prerequisite further development.



2.3 User Research

Co-creating Time for Family

Co-creation is a generative design research tool. It considers the end user and brings them directly into the design process in order to better meet their needs. This method assumes that the end user is the expert of their own experience, and thus can generate ideas and develop knowledge. Furthermore, it empowers everyday people to find alternatives to the situation (Elizabeth B.-N. Sanders and Pieter Jan Stappers, 2012).

To gain a fresh perspective on family life, I ran a co-creation workshop with parents of low-income families. I wanted to understand the challenges that parents face raising kids with limited resources.

The aim of this research was to understand and generate ideas collaboratively to ultimately help inform design decisions for further product development.

My role as a designer is to prepare and support these experts with the appropriate tools to express themselves clearly. My job as facilitator was to frame the questions and avenues of discussion in a compelling way and to extract meaningful insights.

The workshop was split into four main parts: defining, mapping, finding opportunities and generating new ideas.



Figure 11.
Diagram showing
a timeline of the
co-creation
itinerary

Visualizing Quality Time

Participants were first asked to fill out a worksheet individually. They were prompted to define quality time in their own terms, mark when it happens, and draw what it looks like visually. Parents would then state the prerequisites required to achieve quality time and admit the challenges they face to achieve it. To visualize the context in which quality time occurs, I asked each participant to create a list of events that happen throughout a typical day—first for themselves, and then for their kids.

Identifying Common Ground

Once the worksheet was complete, participants transferred their answers to stickers and placed each sticker on a timeline. The blue stickers represented their own actions, and the yellow stickers described their children’s actions. With the maps filled out on the wall, the participants shared each other’s stories. They walked through their typical day, highlighted significant touchpoints and identified the timeframes they spent with their kids. In groups of 2, participants worked together to identify new opportunities for quality time.

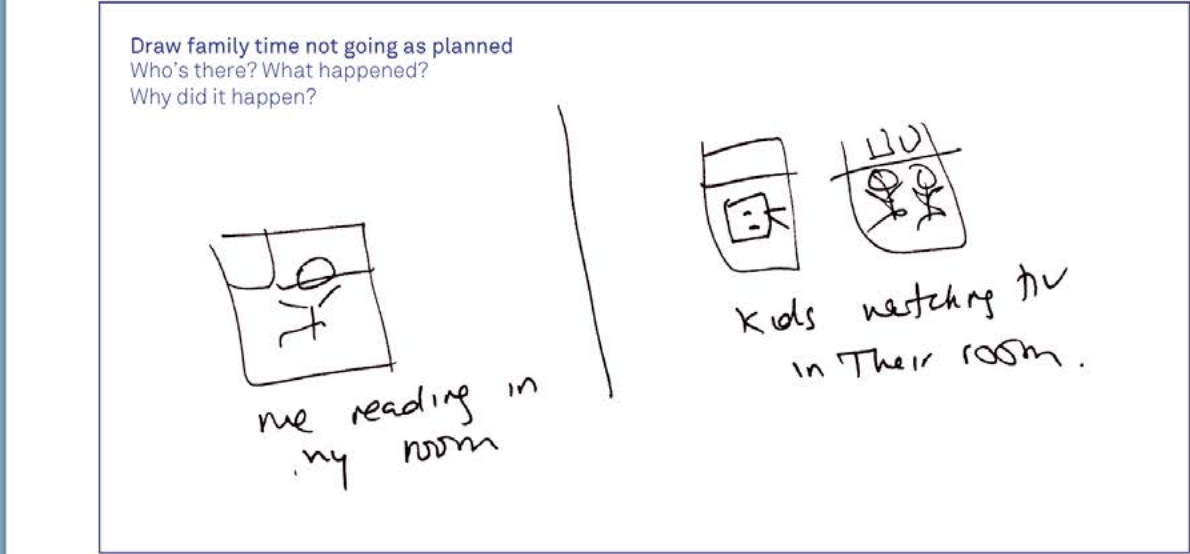


Figure 12.
One parent’s work-
sheet illustrating
family time not
going as planned

Finding Opportunity Areas

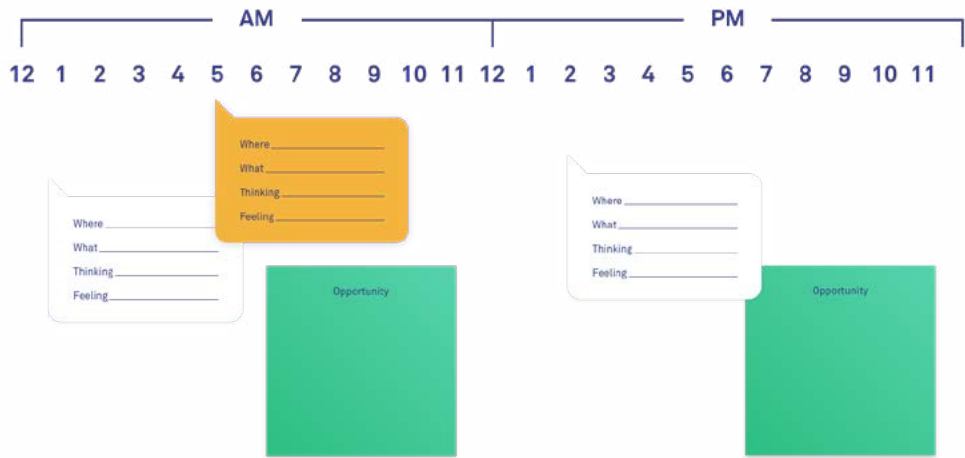
This workshop was my first encounter with my users. A lot was new to me. During the workshop, I noticed two negative emotional patterns during the day. Negative, in this case, means not conducive to positive interpersonal engagement. In almost every case, parents were overwhelmed in the morning and tired in the evening. Long commutes and many drop-offs made mornings stressful for both parents and kids. Although this time is typically when parents and their children are together, none of the parents labeled this time period quality

time. Another salient observation was that most schedules were unpredictable. I asked parents to map out a typical day, however, to my surprise, most parents didn’t have a typical day because of irregular shift work. This type of work made most weeks unpredictable. Last minute call-ins and late shifts compromised family time. Could mornings be a time for meaningful interaction? How might we extract meaning out of haste? Could we create predictable routines out of unpredictable situations?

Figure 13.
A parent document-
ing the situations
when family time
occurs



Figure 14.
Two parents filling
out the co-creation
worksheet



Generating
New Ideas

Finally, I asked the group pair up with a partner in order to generate ideas about creating meaningful time for family. Working off each others maps, participants turned opportunities into objectives. Here are a few concepts that surfaced:

Morning conversation starters: One of the participants came up with an idea to start each morning with a predetermined probe. What did you dream about last night? What's your biggest challenge today? What are you most excited about? Building off this idea, we identified trigger points on each map where moments of engagement might exist.

Making rituals out of routines: Some of the participants noticed recurring events throughout the week. For example, one

father walked his son to the school bus each morning. We asked: how could we create a unique moment out of a quotidian chore? What would this new ritual look like before and after the event occurs? How would the timing change the new ritual? Transposing conflicting schedules: Some of the parents worked weekends and because of their work hours didn't have much play time with their kids. We had a discussion about how to create the "weekend during the week" even if their kids have school the next day.

The discussions that stemmed from this workshop were very generative and hopeful, but most importantly, they revealed insight into the attitudes and constraints these parents have when it comes to family life.

Figure 15.
Co-creation
Worksheets



Figure 17.
Two parents
discussing
their own daily
routines

Figure 16.
One parent's
journey map
illustrating their
morning routine

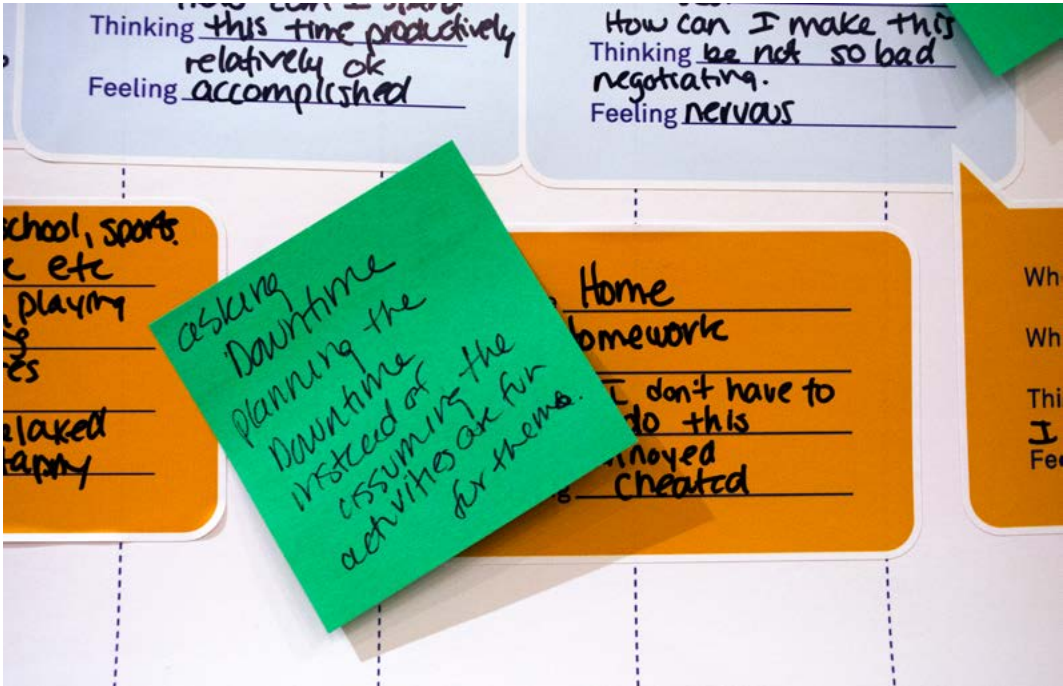
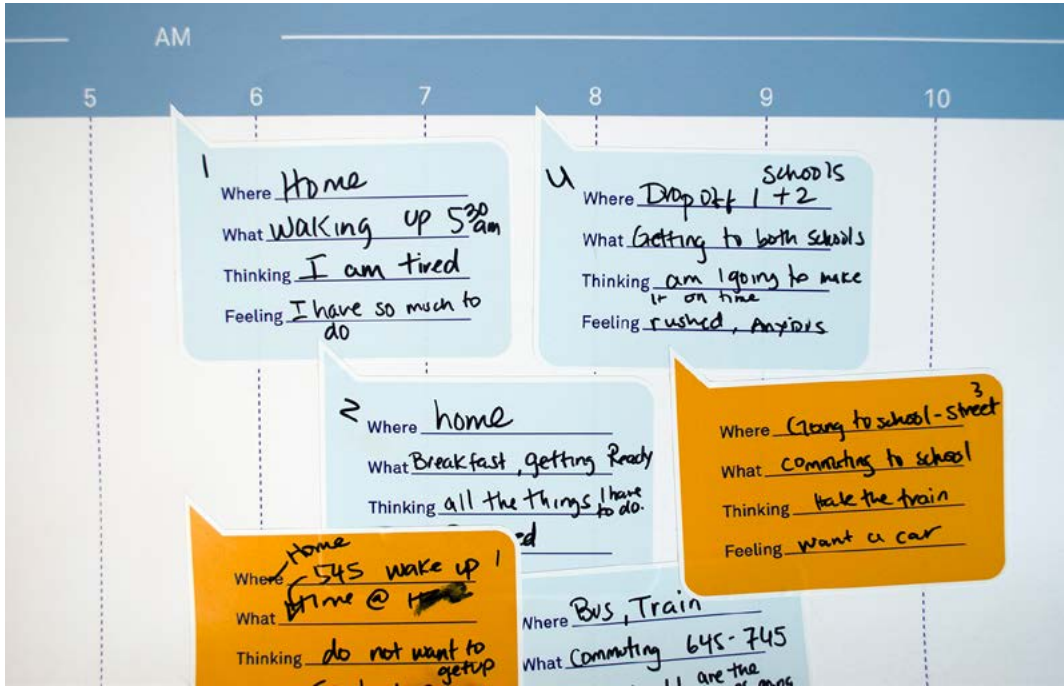


Figure 18.
Parents
generated new
ideas on sticky
notes

03 **Synthesis** Definition Phase

3.1 Frames

Affinity Mapping

After conducting primary and secondary research, I had a wealth of information I needed to parse. I transferred my notes from my interviews and readings on to sticky notes so I could organize them easily. Looking for patterns, I grouped similar ideas and labeled each category respectively. This affinity map allowed me to identify the larger themes at play. Using a mind map, I organized these themes in tree structures to visually construct a hierarchy of relevance. From here, I highlighted the major

keywords in my mind map and made a list of definitions. Once defined, I transferred each keyword to a matrix, listing all the terms down the y-axis and repeating the list across the x-axis. In the boxes where a row and column intersect, I described the relationship between the two keywords. The resulting matrix allowed me to rank each relationship in terms of strength and provided me with a starting point for building a concept map.

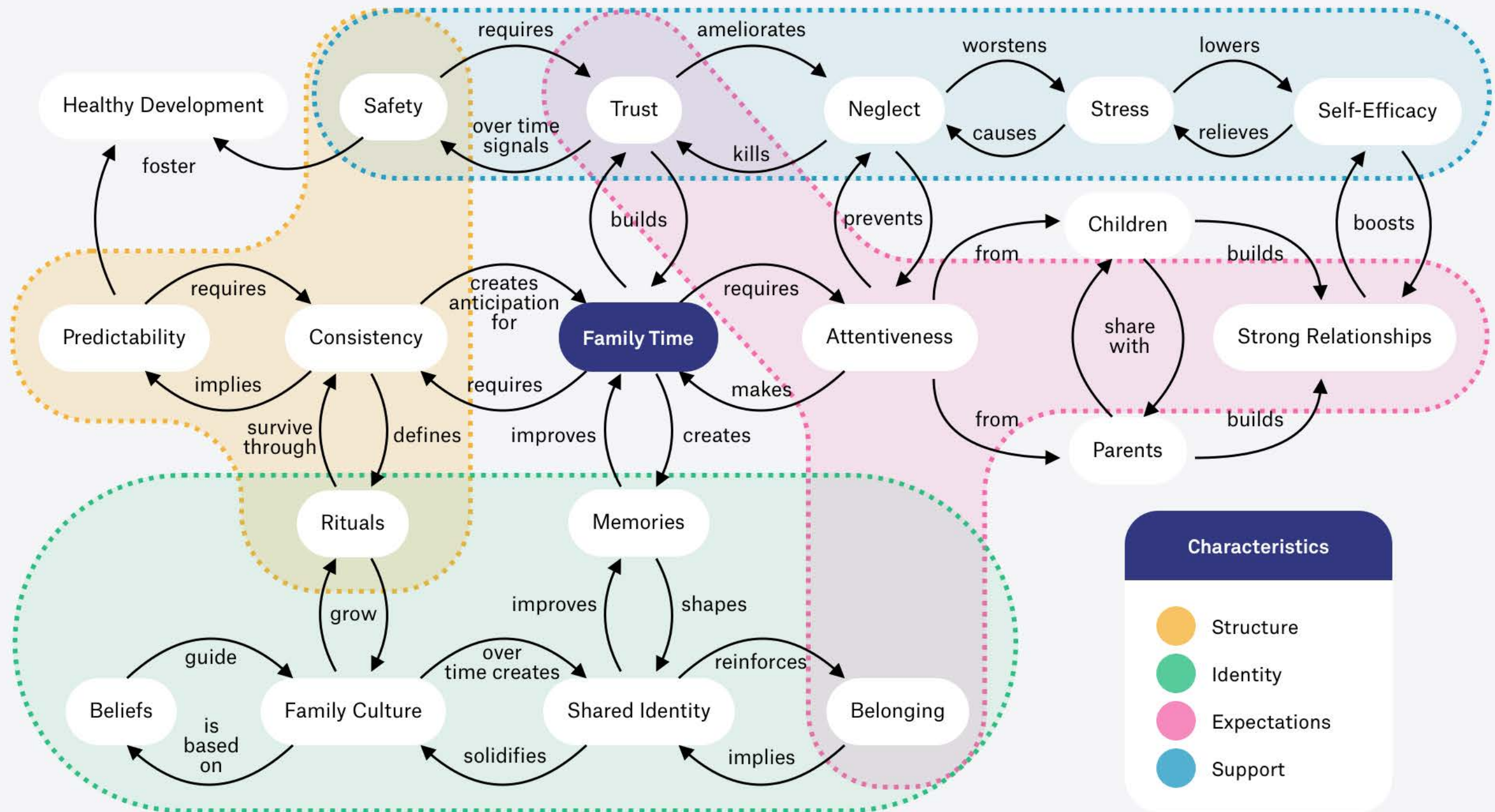


Figure 19.
An affinity map
showing clusters
of early research

Concept Mapping

A concept map is a diagram that illustrates how sets of concepts are related. In the words of Robert Fabricant, mapping gives you a high ground. The purpose is to build a simplified representation of a complex idea on a single visual plane in order to communicate the big picture. For me, building a concept map was a mechanism to understand and define the problem I was trying to solve.

Once I had a matrix of relationships, I tested different focal points and began connecting terms on the whiteboard. I tried branching out from a number of themes, including family relationships and family environments, but eventually settled on family time as the central theme. From here, I branched out to themes of trust, attentiveness, memories, and consistency, and eventually indirectly connecting the dots between family time and healthy development.



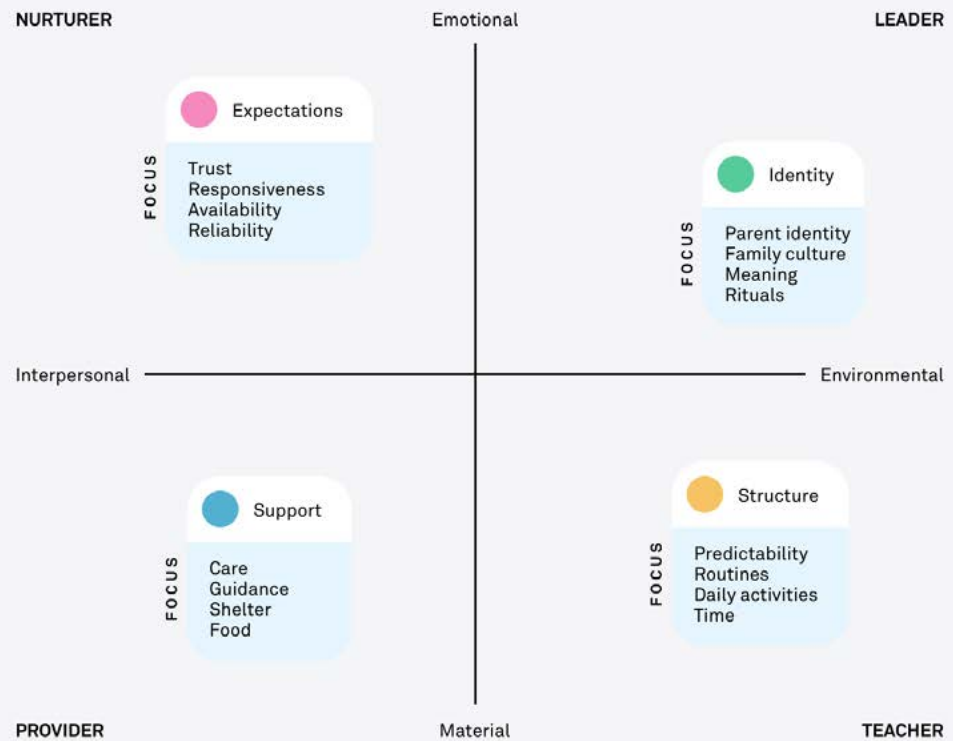


Figure 21.
A 2x2 matrix
showing
opportunity
areas

Opportunity Areas

Once the map was complete, I stepped back and looked for themes once again. Looking at the information in different ways allowed me to understand the hierarchy of terms. Predictability, consistency, safety, and rituals all seemed to fall under a larger theme of structure. Based on this logic, I identified four distinct groups—structure, identity, expectations, and support—that I labeled four pillars of healthy family life.

Interestingly, these pillars came up often in readings and interviews but were never categorized this way. For each pillar to be distinctive, I drafted a matrix comparing interpersonal/environmental against emotional/material spectrums and plotted a pillar in each quadrant. This simplification process allowed me to make sense the mess of information I had amassed, but most importantly, it provided me with high-level opportunities to intervene with design.

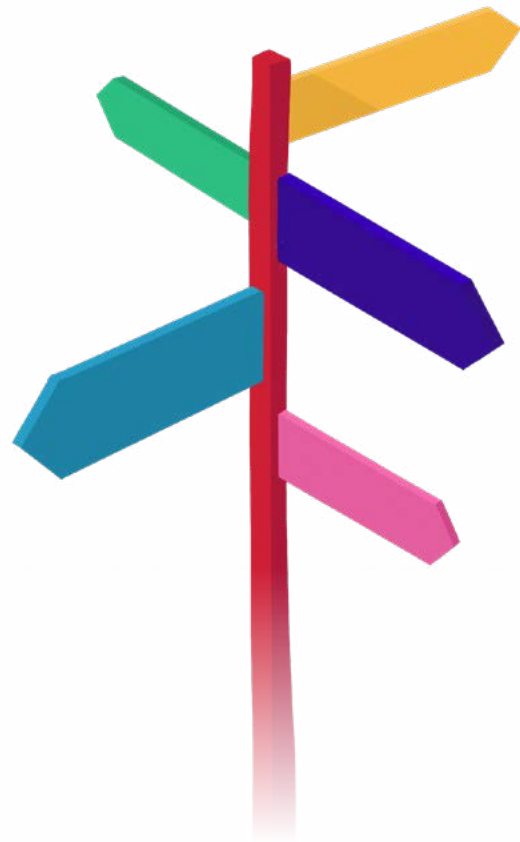
3.2 Design Principles

Building an Ethos

Principles are the set of operating instructions that direct a design decision. They are quick and memorable recipes intended to maintain consistency, integrity, and form across solutions. While coming up with ideas, principles can act as a filter or checklist to decipher whether proposals are relevant to the overall goal. When used throughout an entire system, they align each concept and ensure they all speak the same design language.

After I created a concept map and identified opportunity areas, I needed to build an ethos for how I conduct my work. Establishing these rules would give me a quality metric with which I could judge my designs. I began journaling about how I wanted the work to speak.

After talking to subject matter expert, Alan Waxman, I knew that I had to be careful with how I framed improving parenting. Nobody will identify with being a bad



parent, but they might be interested in being better parents if it benefits their children. For the work to resonate, it needs to communicate support instead of correction. In the same vein, the changes should be attainable. The work should be optimistic, and communicate that you don't have to be perfect to be a good parent. Since the family is a sensitive and deeply personal topic, I can't design in seclusion. Instead, I need to involve my users so that designs can be expressed in a voice similar to their own. Since developmental psychology is already a deeply researched field, my role

as a designer is to translate this science into usable and scalable products. For the work to have long term impact, it should reflect and communicate the science it was built on. Finally, the work should attack small pieces of a bigger puzzle. Instead of scratching the surface of a giant problem, I hope to solve a smaller problem well and hope for a domino effect.

Once I categorized these rules, I rephrased them as action statements. These principles are intended to serve as the guide rails to keep further design iterations consistent.

DESIGN PRINCIPLES

1

ALWAYS KEEP IT POSITIVE

People don't want to resonate with being a bad parent, but they might be interested in being better parents. Don't correct anyone's behaviour. Acknowledge what they do well.

2

BETTER, NOT BEST

It's not about being the world's best parent, it's about making small and simple improvements everyday. Design solutions should be attainable. Otherwise, parents will feel disconnected.

3

INCLUDE YOUR USERS

Co-create with parents and caregivers to come up with solutions that fit the context of their lives. Designs should feel familiar and be expressed in a voice similar to their own.

4

COMMUNICATE THE SCIENCE

Don't be afraid to talk about scientific research. Parents want to learn what's going on in their child's brains. Use proof to motivate action and keep them engaged.

5

TROJAN HORSE IT

Some issues are too wicked to solve with one idea. Designs should be achievable improvements that could be catalysts to future positive change.

04 **Ideation** Development Phase

4.1 Product Exploration

Speculate, *verb*

To speculate is to form a theory about a subject without firm evidence. It's about stretching our imagination, exploring how these ideas fit in other contexts and asking what-ifs until there aren't anymore.

Good ideas don't just come easy—at least good ideas that are original. Being creative is a mentally straining task. It requires hard thinking and hard work. Removing one's self from the boundaries of the real and now helps us think about new futures. When successful, our what-ifs become why-nots.

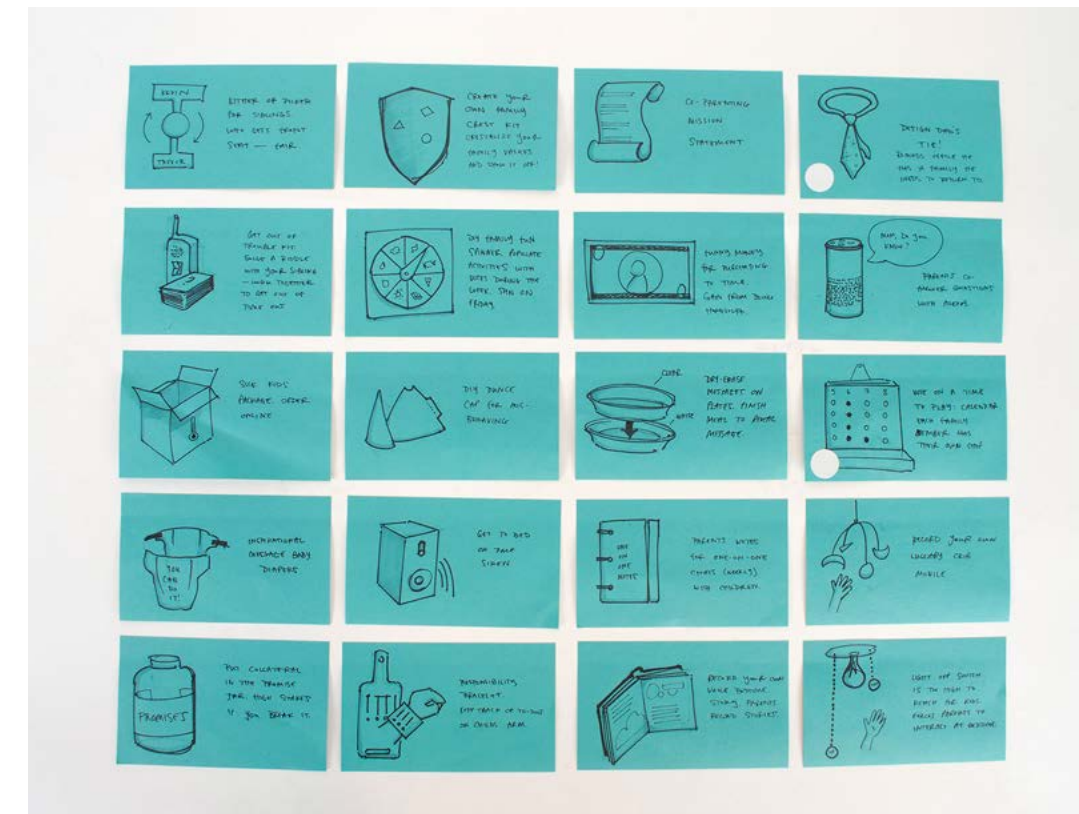


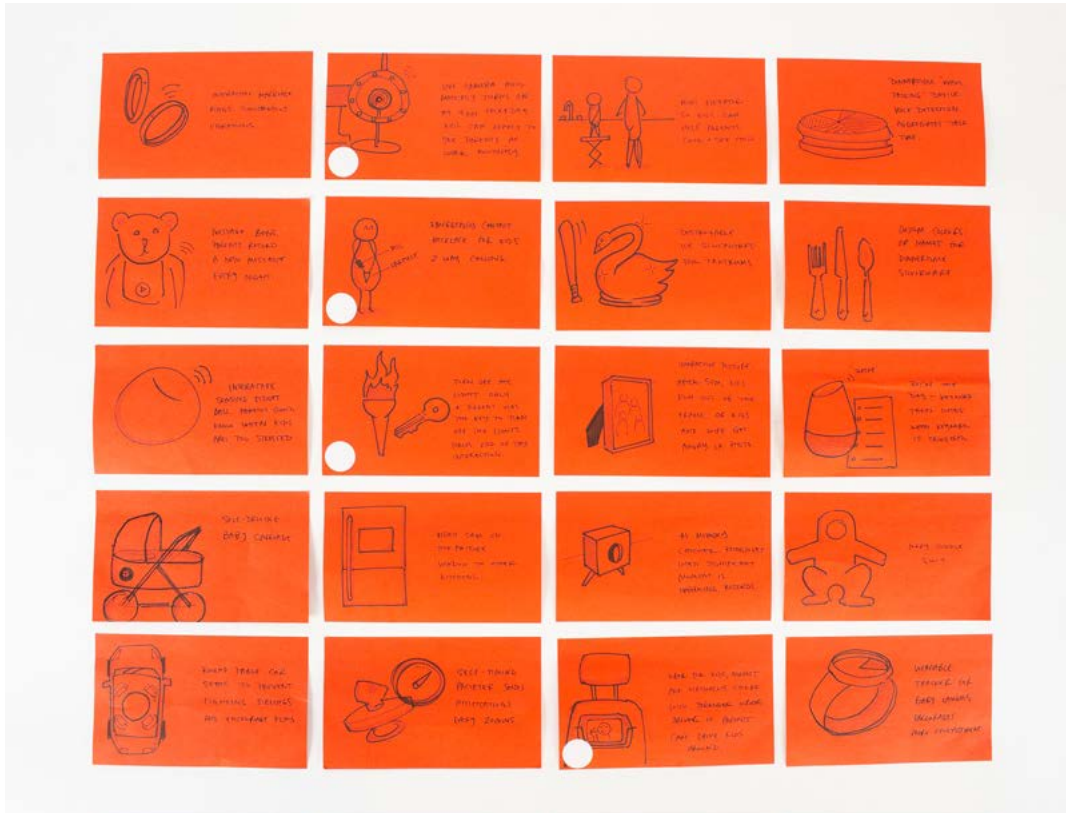
Figure 22.
Early sketch
explorations
of consumer
products

Sketching

To begin my thesis exploration, I sketched 60 ideas: 20 consumer products, 20 luxury products, and 20 open source products. Sketching an absurd amount of ideas not only helps me get past creative block, but it also helped me get ideas out of my head so I could explore them further. Through sketching, I asked myself: what were areas of intervention I could design for? What were the needs, opportunities, and desires? Once they were on paper, I could look at them in context and judge if they made sense. Among my favorites were:

1. A connection tool for kids getting in Ubers so they would feel closer to their parents
2. A nightlight that required a key that only parents could use to create an interaction between parent and child at the end of the day
3. A wall-mounted checkout device that would establish a “ready for school” routine
4. A temper tantrum bot that would listen/record messages that kids say when they're

Figure 23.
Early sketch
explorations of
luxury products



angry so they can express their feelings and listen to them later.

5. A “design your own tie” made by kids for fathers to wear at work and demonstrate that family life is important to them.

I seemed to gravitate towards the idea of time and ritual—specifically slow time and critical time. My assumption was that we have to make time for the relationships that

matter, and that by making time, we make these relationships work. I also gathered from my research this summer that the “special sauce” that makes families work is a combination of expectations, support, identity, and structure. Structure was the concept that piqued my interest here—perhaps because it is the least obvious to me. I thought about the idea of scheduling within the family and how this could be designed for.

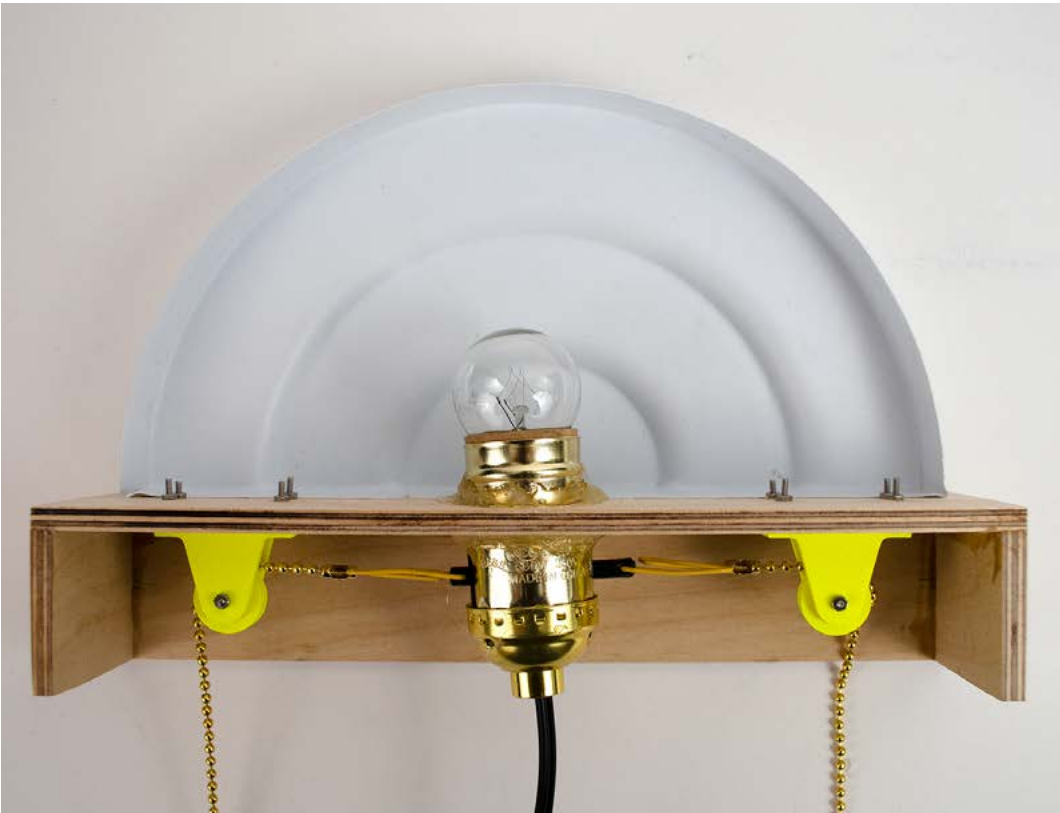


Figure 24.
A “behind the
scenes” view of
the functional
prototype

Prototyping

I narrowed my ideas down and decided to prototype option 2, the nightlight that would create an interaction between parents and kids. I experimented by building a lamp that had a child lock button. It would be easy to turn on, but hard to turn off—at least for kids.

My initial prototype explored simple standalone forms. I imagined it to be battery powered and to sit on a desk or bedside table. I built a sketch model out

of foam core. It’s cheap and allowed me to build a cylindrical shape by bending the board around the circular top and bottom. I gave it some legs to stand on and used a childproof pill bottle cap as the light switch.

Figure 25.
A final version
of the functional
prototype



Refinement

After bringing this object into the world and getting feedback, I was able to see some holes in my initial concept. Children might not be able to turn off the light today, but after seeing how it works, they may be able to figure it out. I decided to build a wall-mounted night light with 2 pull chains. A long chain for the child to turn on, and a short chain so only the parent could turn

it off. The child's height here would be the limiting factor and prevent them from accessing the off switch. Ultimately, it would require a parent or caregiver to turn off the light every night and spend this quality time together.

I read a quote from Pool Henningsen how light has the ability to draw people into

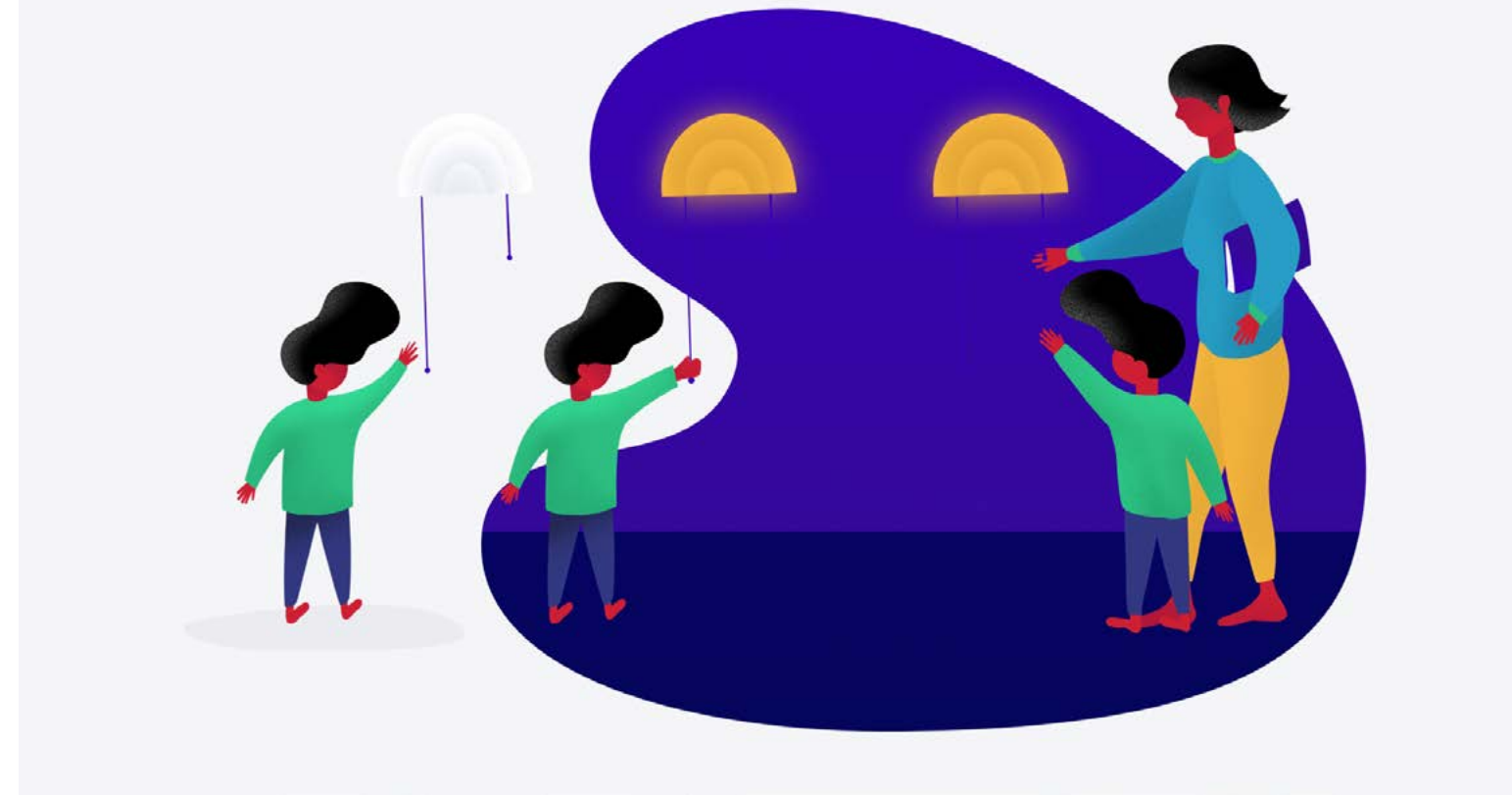


Figure 26.
An illustration
showing how the
product might
work in context

places. People naturally gravitate toward light. If a room is dark but has a single lamp, people will sit under the illuminated space simply because they need to see. Conversely, we put our lamps in the places we want to sit. You can play with affordances here. You can restrict and suggest and manipulate because there's a consequence to sitting in the dark.

In this case, I'm using light to restrict behavior quite literally. The child needs to turn off the light in order to go to bed. If the child isn't able to turn it off on their own, they therefore require assistance from a parent or caregiver. This designed

dependence creates an interaction at a critical time before bed.

Bedtime is generally the time during the day when all the boxes have been checked and we can throw in the cards. It's reflective and intimate. It allows us to pay attention to each other; to listen and share. At bedtime, we read stories, sing songs and think about tomorrow. We're our truest selves in these quiet and safe spaces. Bedtime is also part of a schedule—the rigid routine that children can count on to bring stability in their lives. Fulfilling these expectations makes children feel more secure and ultimately helps their brains develop.

4.2

Mobile App Exploration



“There’s an erosion in the conversation we have together. What she loves most [YouTube, etc.] is not communicable.”

—Sarah Musgrave, Parent

New Media

Technology is ubiquitous, and is not going away any time soon—the pace of digitization is only increasing. Parents today now have to navigate the world of child-rearing with the added complexity of technology. Additionally, the way we consume media is shifting from shared to individual consumption. We’ve moved in the 20th century from playing songs at the parlour piano, to gathering around the radio, to watching TV. Now the recommendation engines of Netflix and

YouTube offer an endless firehose of unique content. As a result, popular culture is fragmenting. Today’s kids don’t share the same cultural currency with their parents, as previous generations did. They may be connected online, but without having these cultural exchanges in person, they lack the ability to build trusting relationships with the people they’re closest with.

To investigate how media affects families, I interviewed 10 parents over the phone and

asked how they use technology at home. What I uncovered was that if most parents had a choice between no family time or family time with technology present, they would choose family time with technology present every time.

I asked myself how could we design these media platforms to be collective by nature?



Figure 27.
A child using a
tablet to stream
movies for
individual use

Figure 28.
App wireframes
showing the login
user flow and
recommendations

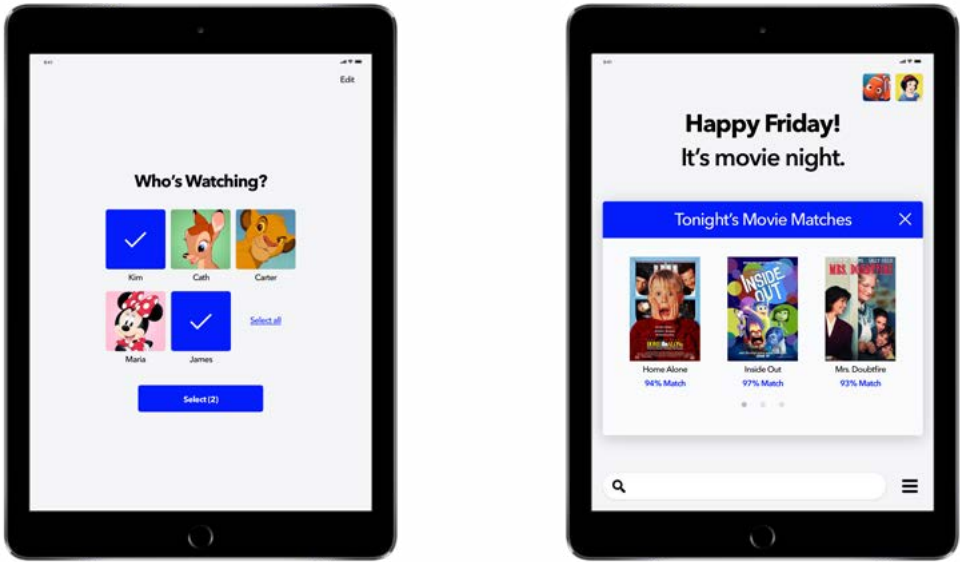
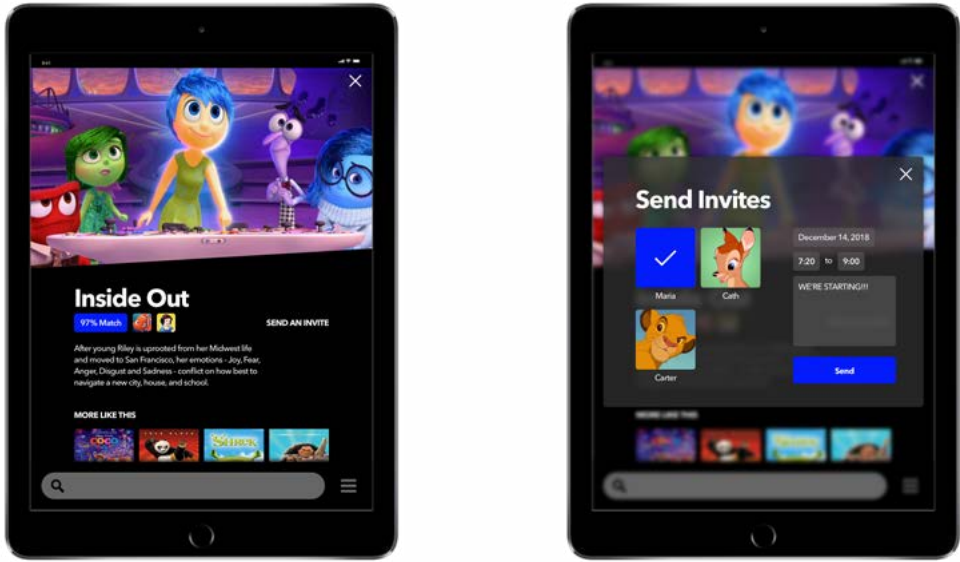


Figure 29.
App wireframes
showing the
movie page and
invite feature.



Social Screens

I envisioned a video streaming service where families could share experiences together. Contrary to existing video platforms, this service prioritizes recommendations for the whole family, not just individual members.

Users have the ability to select multiple viewers at login. Once members are selected, the platform offers a selection of titles that match the viewing preferences of all selected users.

On the home screen, the selected viewers are shown in the top right. New viewers can easily be added or removed here. Each recommendation is displayed with a relevancy percentage based on the intersection of browsing histories—a whole new algorithm that factors in gender differences, age gap, and movies frequently watched together. Once a movie has been chosen, users can view the movie description just like any other streaming service, however, they also have the ability

to communicate with additional family members. Here, unselected users who are currently on the same wifi network or at home will be displayed as available to join. Otherwise, viewers that are away from the house show up as “away” and movie times can be scheduled in the calendar with them for another viewing time.

Having the ability to schedule movie times creates structure and anticipation in the home, especially for parents who work unpredictable hours. The product provides the ability to schedule in advance which presents parents and siblings with additional opportunities to make promises and establish trust.

4.3 Campaign Exploration

“When I wake up at 5:30, I’m tired and have so much to do. I commute to the city, drop my kids off at different schools, then commute to work.”

—Emily Dejesus, Single Parent

Priming Mornings

During my co-creation workshop, I asked parents to describe and detail their daily routines. My research revealed how mornings can be a stressful time during the day for parents. Getting the kids ready for school while simultaneously planning their own schedules can cause anxiety, anger, or despair. With places to be and trains to catch, mornings are rarely an opportune time for parents to engage with their children.

Yet parental engagement right before children take off for school is the perfect time to send messages of belonging and support. Children make sense of the world based on the interaction they have with those closest to them. Simple morning rituals can prime children with the structure and confidence they need to succeed at school, both socially and academically. Conversely, chaos and stress in the morning can knock children off balance for the rest of the day.

I imagined a subway campaign that would make morning commutes an opportunity for routine family fun. Each poster ad would consist of an illustrated backdrop and a prompt that encourages families to take a photo together. While waiting for the train, families can step on the stage and take a selfie together to create a happy memory. Over time, families could accumulate a collection of original photos as the background illustrations change.



Figure 30.
A subway campaign
to encourage
family interaction
in the morning



Figure 31.
A diagram
illustrating what
morning family
time could look
like on the way to
work and school.

Take a family portrait

Illustration by @muti

 **#joytraits**

05 **Refinement** Delivery Phase

5.1 Experience Design

Feedback Mechanisms

“Under what circumstances do parents feel they are doing something good or useful for their kids?”

— John Thackara, Writer

Strong families are built on trust. Families with high trust know they can make mistakes around each other and still be loved. However, for trust to exist in a relationship, there must be regular feedback. Feedback in this case is the open conversation that occurs under moments of conflict—both positive and negative—that are crucial to clear communication. A relationship devoid of conflict is not harmonious, but yielding and even dangerous. The closer you are with someone, the more necessary it is to spend more emotional energy on that person



Figure 32.
During childhood,
most feedback is
unidirectional

because the expectations are so high. Failing to live up to those expectations can lower trust in the relationship and cause family tension. (Covey, 1998). Conflict debt occurs in a relationship when its members avoid interaction for too long, that when conflict eventually surfaces, it can be explosive. On the contrary, when a relationship has a high amount of trust, conflict doesn't feel like an attack. Instead, conflict becomes a necessary and open negotiation of individuals personal needs.

A broken family is one wherein the members do not trust each other anymore. Through one way or another, vulnerable families become more vulnerable by losing trust in each other over time. Without a culture of trust, families become rigid and lose opportunities for feedback. Consequently, feedback becomes increasingly harder to achieve. In order for families to repair broken threads, they must first learn to accept feedback and to deal with conflict in a healthy way.



The Guardian Awards

The Guardian Awards was a public experience meant to provide parents with healthy feedback mechanisms from their children. During childhood, feedback is mostly unidirectional because parents hold most of the power in the relationship. Although completely expected, most parents don't have much opportunity to get the feedback necessary for an honest relationship.

On March 24, 2019, I asked ten children in Morningside Park why their parents deserved 'best parent' award, their favorite

activities with their parents, and the ways in which they admired them the most. The answers to these questionnaires were written onto paper cards, and then they were rolled up and inserted into wooden trophies. The children then presented the awards to their parents and explained to them why they won.

This experience was designed to open a new lane of communication between parents and children. In a playful way, it provided families with a platform to open a discussion about their relationships that they otherwise wouldn't have had.

1

ALWAYS KEEP IT POSITIVE
People don't want to resonate with being a bad parent, but they might be interested in being better parents. Don't correct anyone's behaviour. Acknowledge what they do well.

2

BETTER, NOT BEST
It's not about being the world's best parent, it's about making small and simple improvements everyday. Design solutions should be attainable. Otherwise, parents will feel disconnected.

Figure 33.
Exerpt from
aformentioned
design principles

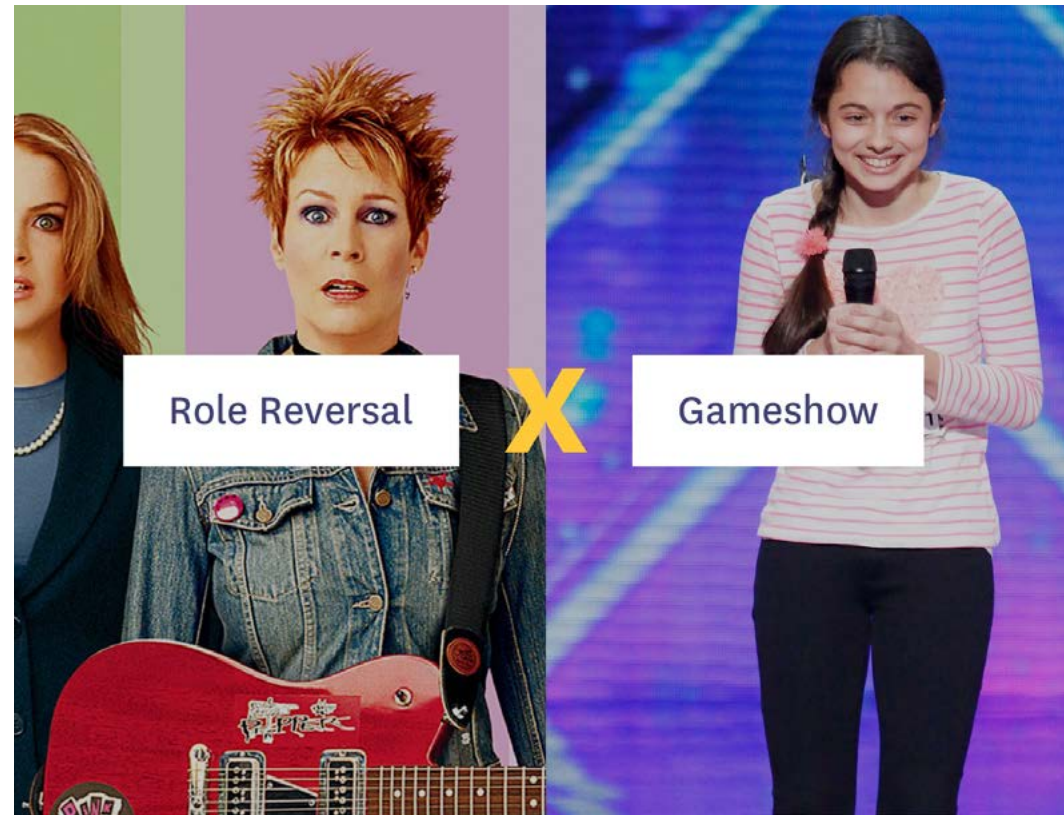
Experience Intent

I established the overall goal to provide a feedback mechanism that would give children a platform to communicate honestly with their parents about their relationship.

I thought about the emotions I wanted to convey. If my thesis were a brand, its core values would be joy, reflection, and steady optimism. These values seemed to match closely with the set of design principles I

had already established. In **Principle #1**, I committed to always keep it positive: I would not correct behavior—instead, I'd acknowledge what parents do well. In **Principle #2**, I said better not best: because design solutions needed to be attainable; otherwise, parents would feel disconnected. Although my thesis covers a serious topic, I wanted it to feel lightweight and fun in addition to feeling meaningful.

Figure 34.
Original typology
combined themes
of role reversal
and a gameshow



Defining a Structure

The next step was to define a high-level structure. This would allow me to make quick decisions about what would work and what wouldn't, without getting caught in the details. I began by picking among existing typologies that would be familiar to my users. I brainstormed 10–12 typologies and compared them with my classmates. Typologies included a family portrait, a collaboration challenge, and a sharing circle among others. However, after

formal feedback, I decided that a mixture between role reversal and a game show would be the best container for my design intent. Once I had a template, I needed to assign the basic rules. I thought about different frameworks as a way to decide what capacity users had in this context. I was attracted to a branching framework, where users could explore options with an end goal—this way, I could poll the results.

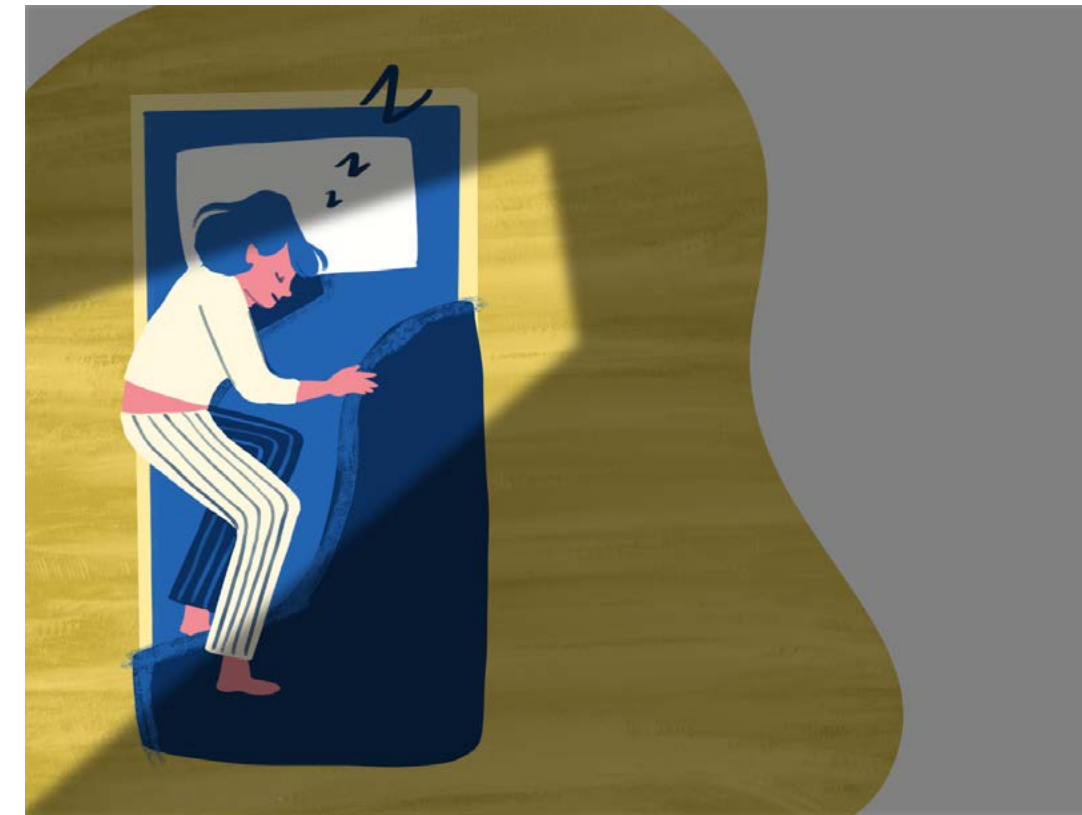


Figure 35.
Illustration
depicts the
original objective
to put an actor
to bed

Experience Design

I imagined a scenario where kids would have the opportunity to act as parents. For this to work, I would set up a stage in a public park and hire an actor to play a child. Provided with a choice of costumes, children would be prompted to accomplish a series of tasks that would ultimately lead to putting the actor to bed. Like a game show, the event would be timed, and the child's success would be determined on whether they were able to accomplish the

task before the clock ran out. Additionally, the actor would respond favorably or unfavorably to the child's requests. Conflict would give children an opportunity to try a tactic of their own. Instinctually, this tactic would be something that their own parents have used—and ideally something that's proven successful in their own family. After the time ran out, I would conclude by interviewing the child, asking them what they did and why they did it.

Figure 36.
Set design for
the gameshow
typology



At this point I had defined three sub-goals, one for each of the participants -- myself, the parents, and the children. For me, it was about research. I wanted to better understand how children model their parents. I would accomplish this by polling which tactics children used and collecting responses from the testimonials. For the parents, it was reflective. I wanted to provide a feedback mechanism. Visualizing these tactics would let parents see how their kids model their own behavior and thus give them visual feedback of what their child sees. For the kids, it was about facilitation. A joyful experience would decrease friction and evoke a candid response.

With a rough concept established, I began to narrow in. I created a journey map detailing the attraction, engagement, and conclusion. This allowed me to identify touch points, but also potential moments of atrophy. To understand the user's perspective, I built an empathy map and speculated what the kids would think, feel, say and do during the experience. To settle on a visual language, I put together a mood board that would communicate my emotional intent. Building off this aesthetic, I designed a stage, props, and costumes, I recruited an actor and crew, and I placed a permit request for Morningside Park in Harlem.

Roadblock, Pivot

A few days before I began prototyping my concept, I hit a barrier. Not only was my actor unavailable on the day of the event, but my request to set up a stage in Morningside Park (or any park for that matter) was also declined. With about a week before launch, I decided I needed to pivot.

Running into a challenge like this so late in the design process put me in a bit of a crisis, but it also forced me to simplify my concept. I went back to the drawing board and sketched a few ideas that would give parents feedback. Since I was running out of time, my new solution also needed to be a lightweight solve—something I could do mostly on my own and with limited props to shorten the build time. Since I no longer had a permit, it also needed to be something mobile so I could take off if park security caught me.

Like my first iteration, I began by defining the high-level structure. I experimented with different typologies. I imagine a game where kids and parents could literally find common ground, a giant storytime where kids could create their own ending, and simple improvisations where kids could act

out their favorite parts about their parents. Finally, I landed on an award ceremony with a twist—where the kids would decide the categories and give the awards. I was particularly interested in this typology because it aligned most with the experience intent of providing a direct feedback mechanism for parents. It also followed a repeatable and linear framework, which was perfect for a time crunch because it kept the complexity low, meaning less room for error.

Experience Design, v.2

I created a storyboard to determine the sequence, visualize touch points, and work out details including props, set design, and people. There was one thing I knew for sure: the set needed to be on wheels. For the sake of time, I quite literally put the cart before the horse and ordered parts for my trolley before I could finish fleshing out the final details of the experience. I designed the cart in CAD, sketched brands and imagined versions what the award would look like.

I spent the following few days in the shop fabricating the required assets. The cart needed to attract eyeballs. To achieve this, I simply painted it bright red and slapped

Figure 37.
Cards designed to
capture feedback
from children



Favorite activity:

Superpower:



Why does my parent deserve
a guardian award?

 #theguardianawards

on a bold logo. For the awards, I wanted them to be something people would keep in their homes and reflect upon well after the experience was over. I bought two planks of white oak and engraved them using the CNC machine. I then glued the oak planks together to give it some thickness and squared off the corners to make it feel valuable. Finally, I designed the feedback mechanism. There were three things I wanted to capture:

- 1. A specific scenario of shared time together
- 2. The top reason they admired their parents
- 3. A personal note expressing love

In order to keep the experience lightweight, I decided to create cards that kids could fill out with long-answer responses. These responses would then be rolled up and inserted into the awards, giving each award a unique touch.





Final Thoughts

Although relatively simple, I'd say the experience effectively satisfied my design intent. Functionally, the experience successfully provided parents with a positive feedback mechanism from their children. An observable pattern among families was that parents cared more about what was written on the card than the award itself, suggesting that parents truly valued their children's feedback. Behaviorally, the experience evoked a sense of novelty among children, which created an atmosphere for honest communication. Because the cart and awards felt real, there was a sense of magic to the experience.

This type of authentic feedback could have never been achieved otherwise.

Although the experience was brief, the award was built to last. It's not common that children have an opportunity to gift their parents something special—and I can only imagine how empowering this feeling is for them. That being said, I imagine that both parents and children would want to keep the award. If so, my hope is that the experience's memento remains to be a source for future two-way relationship building between parents and children.

5.2 Service Design

Breaking the Cycle

“The best way for parents to feel comfortable in their role is to show them, through encouragement, what they’re doing right.”

— Paul Tough,
Author of *Helping Children Succeed*

Early childhood is a crucial period for human development that sets the stage for all that will come after (Fisher, 2016). Ninety percent of a child’s brain development happens before the age of five, yet its maturation depends on experience. Developmental neuroscience suggests that experiences central to infants’ brain development are embedded in the relationship between children and their caregivers. (Fisher, 2016). In other words, healthy interactions between parents and children, defined by sensitivity and responsiveness to a child’s signals, are what

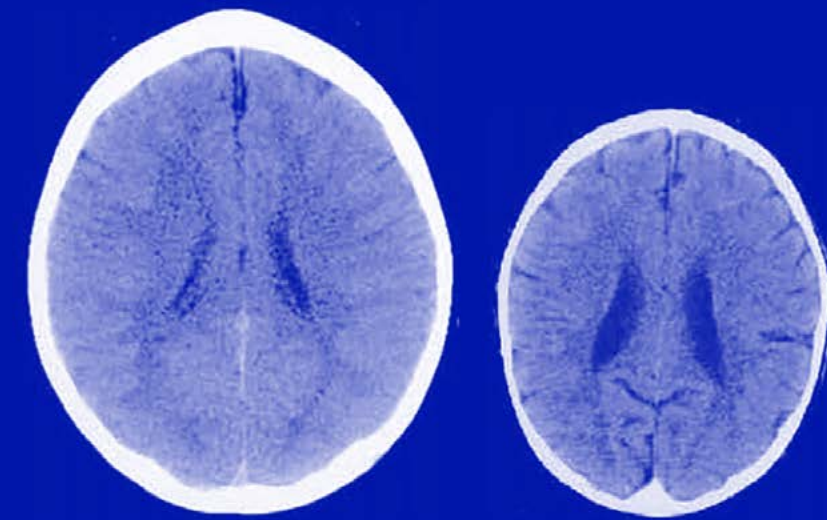
creates the necessary neural connections between all the different areas of the brain and builds the emotional and cognitive skills that children need for later learning.

Conversely, the absence of responsive relationships in a child’s early years is a serious threat to a child’s development and well-being for two reasons. First, if an adult’s responses to a child are unreliable, inappropriate or simply absent, the brain doesn’t get the positive stimulation it needs to build a healthy architecture. Without that solid base, children can struggle to

develop mental, physical and emotional health. Second, neglect or unpredictability creates a stress response in the brain, which further harms development. (Tough, 2016). Unreliable parenting, or worse, neglect, can lead to the impairment of the stress-response system, which can cause emotional and behavioral difficulties later in life. (Tough, 2016).

Apart from cognition, responsive care is the single biggest factor in promoting resilience in the face of adversity. Since a child’s resilience is built on available

3 Year Old Children



Normal

Extreme Neglect

Figure 38.
A comparison
of two brain
scans shows
how parental
responsiveness is
essential to brain
development

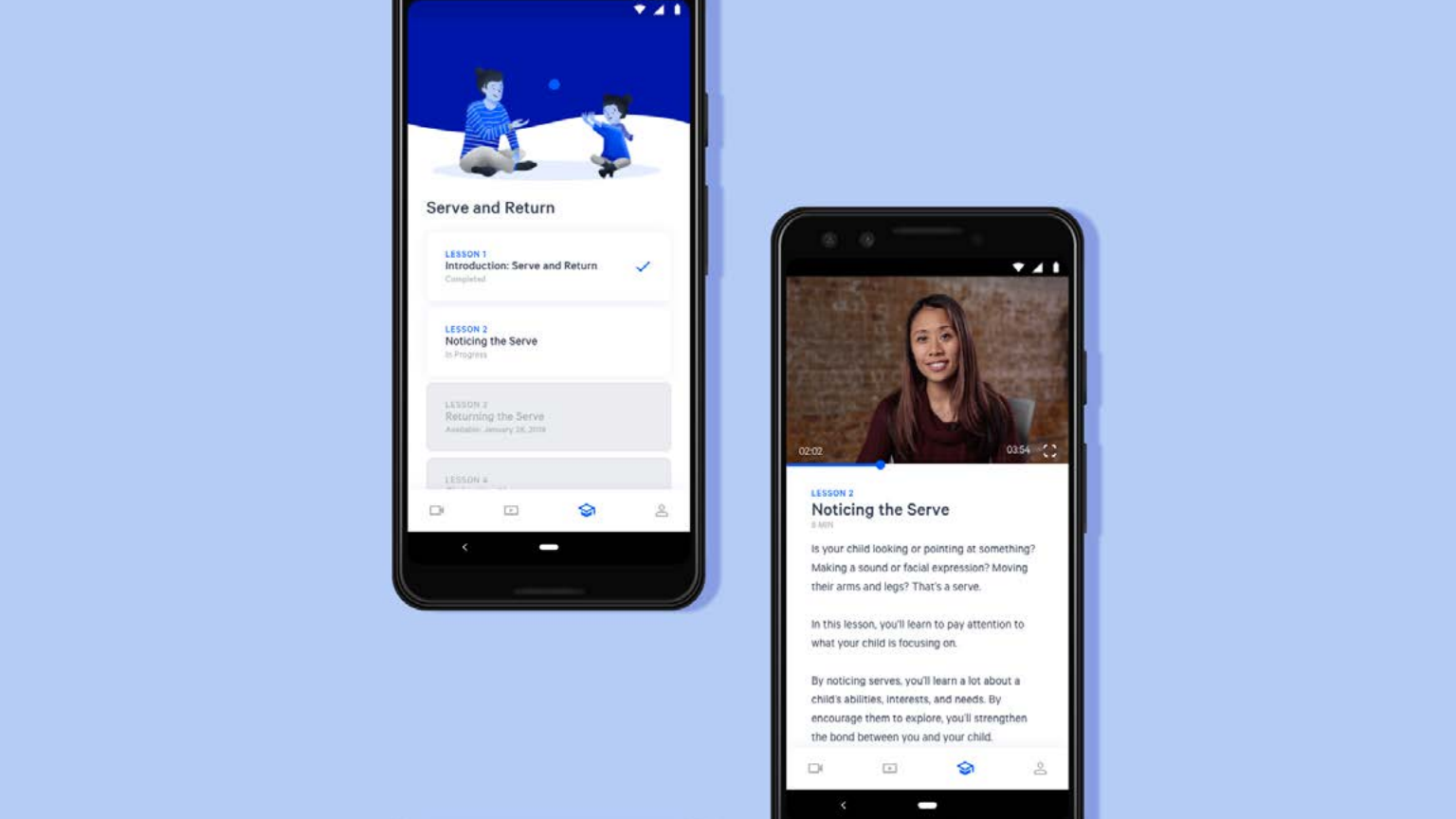
resources, capable parenting and other close relationships are some of the basic adaptive systems that allow a child to bounce back after a traumatic experience. (Masten, 2015). Although stress is inevitable, how a child is comforted during periods of stress is crucial to building resilience even in the worst environment. Furthermore, parents who are attuned to their child’s mood and responsive to emotional cues produce securely attached children—children who are brave, curious and confident because they trust they’ll be able to return to their parents for support when needed (Tough, 2012).

Childhood emotional neglect can happen one of in three ways. First, in the case of emotional abuse, parents expect the child to fulfill their needs, rather than the other way around. Second, struggling parents may mean well, but simply aren’t aware of their child’s needs because they are dealing with their own lives. Adults might not engage in supportive interactions with young children due to significant stresses brought on by financial problems, a lack of social connections, or chronic health issues. These caregivers who are at the highest risk for providing inadequate care often experience several of these problems simultaneously. (“Serve and Return.” Center on the Developing Child at Harvard University, 2019). Finally, some parents

mean well but were neglected themselves. These parents are not able to give their children enough emotional responsiveness and validation because they didn’t receive it in their own childhoods, and don’t know how to model appropriate parenting behavior. Additionally, these parents may not have developed early childhood executive functioning skills themselves and have trouble paying attention, controlling stress and focusing, which in turn makes supportive interaction less achievable.

According to the US Census Bureau, 1 in 4 children under the age of 18, a total of 16.4 million children in the United States alone, are currently being raised without a father. Combined with the higher amounts of stress and lower level of family income, it is likely these children won’t receive the emotional nurturing they need.

According to subject matter expert, Marisa Morin, reading parenting books is more of a middle-class endeavor. Additionally, childcare programs are not accessible, costing on average \$12,000 a year. In order to help parents better support their children’s developmental needs, design must find a way to intervene in a cost-effective, flexible and easily digestible manner.



Introducing Kare

Kare is a video coaching service that helps parents strengthen positive interactions with their children during the early stages of development. Designed primarily for socially vulnerable families, including but not limited to single working parents and fathers who didn’t have fathers growing up, it aims to educate and reinforce developmentally supportive interactions between caretakers and their children.

Kare provides a direct line of communication between caretakers and trained childcare professionals. Using

the app, caretakers would upload video clips of themselves engaging in everyday activities with their children. Once uploaded, “coaches” would encourage positive behaviors by commenting on the actions caretakers did well. (Tough, 2016). By highlighting parent’s strengths instead of correcting behavior, coaches effectively boost caretakers confidence and reinforce developmentally supportive behaviors.

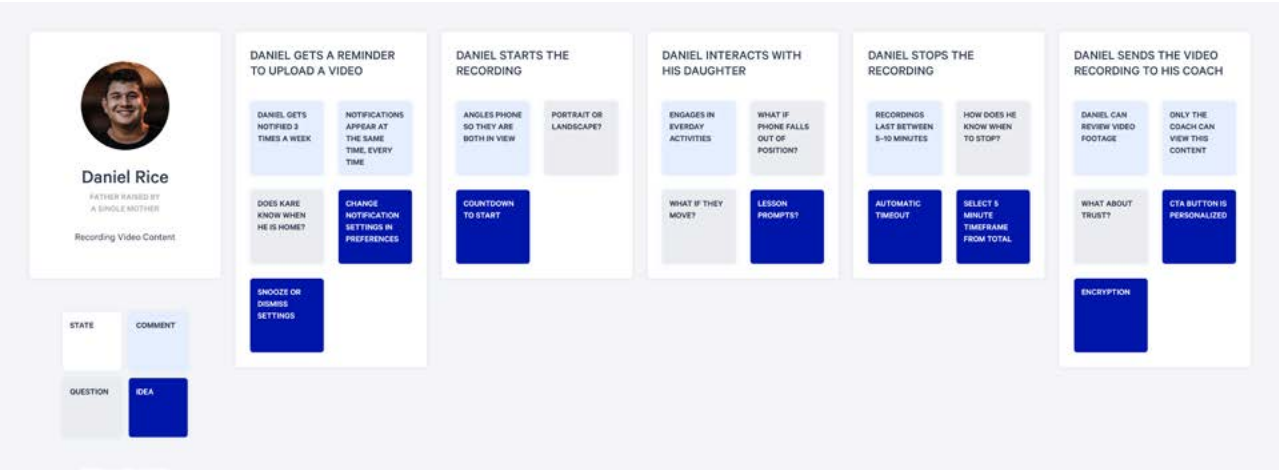


Figure 39.
Proto persona
and scenario map
to generate ideas
for product
features

Defining
the User

I began my design process first by defining the product's potential users. I asked myself: who would benefit from additional parenting support? I compared analogous solutions and roughly listed some characteristics that users from my target demographic would share. Assumingly, these users would be:

- 1. Parents with young children
- 2. Low-income
- 3. Unable to afford childcare
- 4. At risk of providing inadequate care

To narrow my target audience, I devised four meaningful groups that would fit these characteristics. These included:

- 1. Single Mothers: Mothers who bear full responsibility for their children
- 2. Welfare Parents: Families benefiting from government assistance
- 3. “Cliff” Parents: parents who don’t meet the eligibility requirements for government services, but could still benefit
- 4. Dads without dads: Fathers who may not have had male role models growing up

For each group, I created proto-personas based on my assumptions. I listed potential attributes, user goals, and frustrations. The point here was to quickly understand the landscape in order to make more informed decisions about users later on.

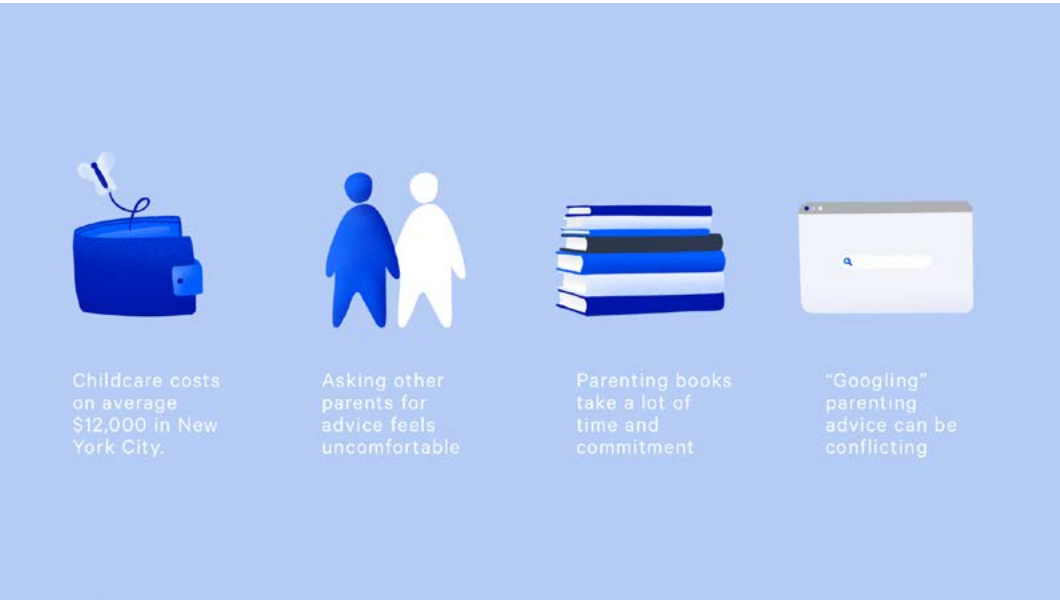


Figure 40.
An illustration
showing the
barriers to
learning
developmentally
appropriate
parenting
behaviors

Research

I decided I was going to focus my research primarily on dads without dads. My previous research in this space led me to believe that this group would be most receptive to parenting support for two reasons. First, fathers are more likely to voice their confusion than mothers. The fathers who enroll in childcare programs are generally motivated and want to know what to do. Second, fathers who didn't have a father figure in their own childhood don't know how to model that behavior. These fathers often find themselves lost in parenting scenarios, and could benefit immensely from the additional support and guidance.

I created a research plan to further understand the behaviors and attitudes of fathers raised by single mothers. The purpose of uncovering behavioral and psychological insight was to understand how this product could create value for these users, both functionally and emotionally. In order to collect this information, I conducted phone interviews with 6 dads without dads.

I asked users about their own childhood and how the absence of a parent affected them emotionally. When did they notice this absence the most? Who did they turn to for support? I then asked questions about their daily activities as a parent.



Figure 41.
Kare's system
architecture only
allows coaches
and parents
to view video
content

Who do they ask for parenting advice?
What kinds of questions did they ask? What
do they wish they had known earlier?
How do they know when they've done a
good job?

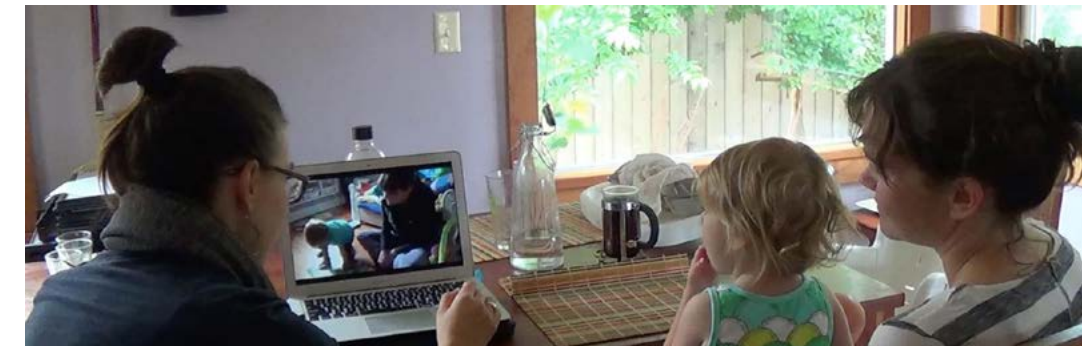
The responses I received confirmed my
previous research that fathers didn't have a
memory bank of good parenting examples
to draw upon, and often felt confused.
However, the fathers I talked to had very

different ways of collecting parenting
advice. "Googling it" was an option, but
answers could be conflicting. Asking
other parents was an option, but also felt
uncomfortable. Now that I had found my
pain point, I asked myself:

How might we create a first line for asking
about parenting advice?



Figure 42.
A social worker
filming parent-
child interactions
as part of the
FIND program



Inspiration

In my research, I read about a home
visitation program called (FIND) Filming
Interactions to Nurture Development. In
this program, home visitors film parents
engaging in everyday activities with
their children, select positive instances of
parent-child interaction and share clips
with caregivers in weekly structured
coaching sessions. What's unique about
FIND is that home visitors don't correct
behavior, but instead, highlight parent's

strengths. This reinforcing method
boosts parents' confidence and facilitates
their understanding of developmentally
supportive interactions. Inspired by this
framework, I thought about how positive
reinforcement improve results via a
digital product.

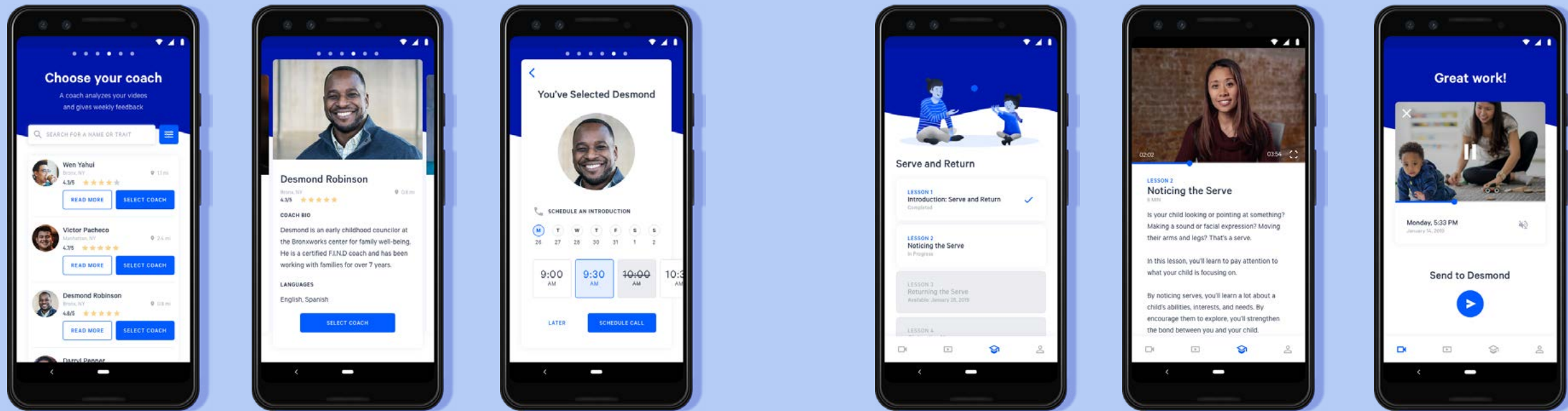


Figure 43.
App screens show
choosing a coach,
learning content
and uploading a
video recording

Defining Features

Based on my guiding question and the positive feedback framework I had defined, I created a list of potential features that would provide value to my users. These included:

1. Choose a coach
2. Record video footage
3. Read comments
4. Ask a question
5. Learn more

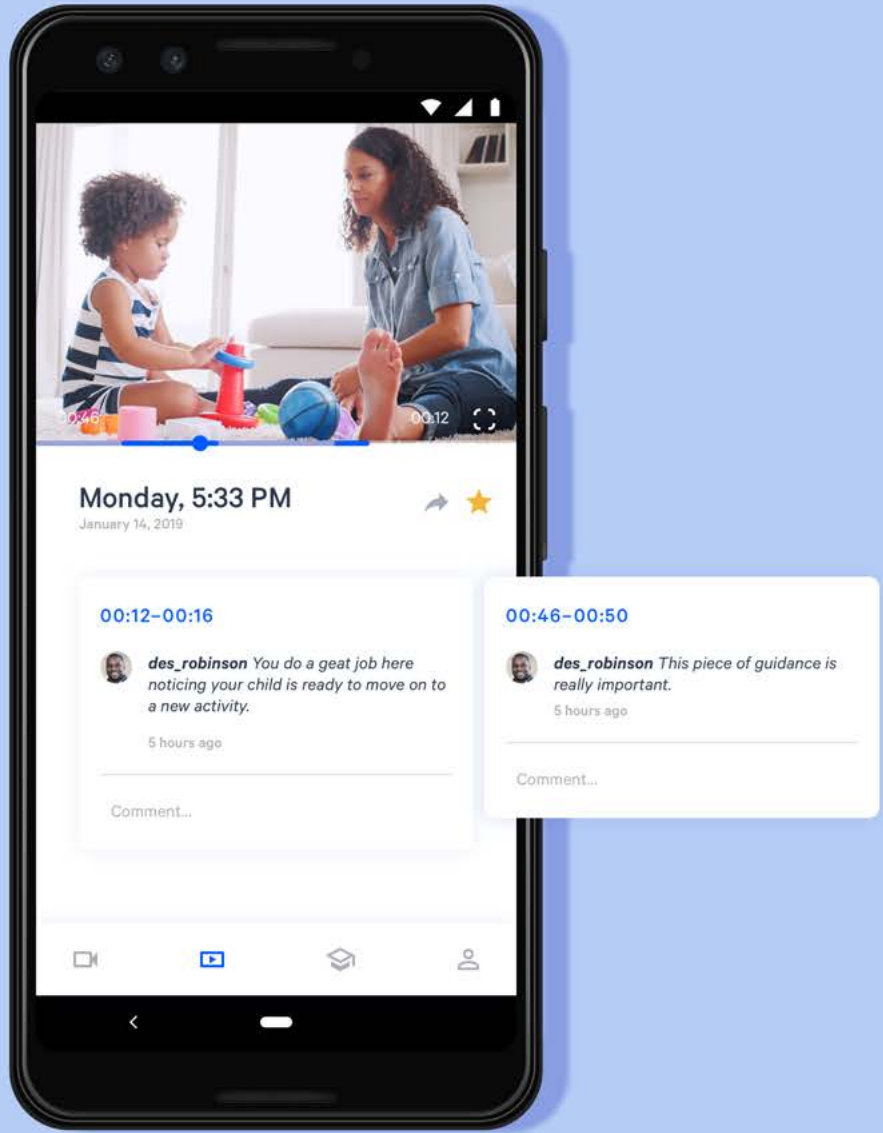
Designing the Product

Moving from rough sketches to wireframes to eventually polished designs, I worked out the critical features. The first critical touchpoint, choosing a coach, occurs during the onboarding experience. Users can filter their preferences based on gender, language or proximity to find someone that fits their needs. They would then be prompted to schedule an introductory phone call as a way to establish trust and accountability. Lesson plans would be accessed in the

learning section, and each lesson would be time released to introduce a new concept each week. Every couple of days, users would be reminded to record content. The record feature is designed in a way that would automatically time out after five minutes, allowing parents to continue focusing on their kids even after the time is up. Comments are accessed in a separate navigation silo. Since multiple comments can be uploaded per video, the scrubber

indicates where comments are located in time and the comment windows would respond to the scrubber position. Finally, a direct communication channel to contact the coach is clearly visible with the help of a call to action button and accessed on the profile page under the coach section.

Figure 44.
When watching a
video, comments
sync up with the
scrubber position



Final Thoughts

Kare provides a flexible, low-cost, all-in-one package for parents to learn and adapt developmentally supportive interactions. The product addresses two of the relationship impeding factors that are unique to socially vulnerable families. First, Kare addresses the confusion commonly faced by parents who didn't have role models growing up by providing a first line for parenting advice. Not only do parents without role models lack the memory bank to model behavior from, but they also lack the multi-generational support. Kare's structured and easily digestible learning

content introduces caregivers to parenting concepts they can practice at home. The app also provides easy access to a trained coach for the moments they need advice. Second, Kare addresses the unpredictable schedules and high-stress commonly faced in families of low-income by providing caregivers the flexibility to operate on their own time. By addressing the relationship issues unique to socially vulnerable families, Kare aims to enrich interpersonal relationships as a strategy to improve cognitive and emotional outcomes for children.

5.3

Product Design

“Children from low socioeconomic status families have been found to have poor sleep, characterized by shorter duration, poor quality, greater variability, and greater incidence of clinical sleep disorders.”

— Dr. Joseph A. Buckhalt,
Auburn University

The Economics of Sleep

Research shows that inadequate sleep patterns have a number of negative outcomes among children. Poor sleep affects children on three levels, worsening behavioral, cognitive and health outcomes. Insufficient sleep has been linked with the inability to control emotions. Behavioral problems are more common among preschool-aged children who have later bedtimes and less regular sleep schedules (Yokomaku, et al., 2008). There is also a link between poor sleep and lower reading and math skills. Evidence suggests that differences in nighttime sleep phase by race

contribute to racial disparities in school readiness (Crosby, et al., 2006). Finally, lack of sleep has been linked to adverse physical outcomes over time including weight gain and more serious maladies. Preschool and school-age children (ages 3-12 years) who go to bed later have a larger increase in body mass index (BMI) over a 5-year period than children with earlier bedtimes (Snell, Adam, & Duncan, 2007). To put this problem in perspective, the CDC recently declared insufficient sleep a public health epidemic.

Research shows that this problem is magnified for children of low-income families. Children from low socioeconomic status families have been found to have poor sleep, characterized by shorter duration, poor quality, greater variability, and greater incidence of clinical sleep disorders’ (Buckhalt, El Shiek). Although the direct reasons are unclear, poor children suffer from worse sleep in physical, psychological and structural ways that are unique to living in poverty.



Figure 45.
Irregular sleep
schedules have
lasting effects on
children's health,
school and
behavioral
outcomes

It is clear that getting a good night's sleep requires a peaceful environment. Poor households, however, have more physical irritants. Factors such as noise, crowding, and other distractions can make it harder for kids to sleep. Fewer economic resources may make it more challenging for families to maintain children's sleep environments that are quiet, dark, and kept at a comfortable temperature (Erika J. Bagleya, Ryan J. Kelly, Joseph A. Buckhalt, and Mona El-Sheikh, 2014).

Feeling safe at night is also an essential part of a child's ability to fall asleep (Dahl & El-Sheikh, 2007). However, stressors from living in poverty make falling asleep more difficult. At-risk children have a greater chance of pre-sleep worries. It is possible that youths who are economically disadvantaged experience greater levels of cognitive arousal as a result of greater exposure to daytime stressors (Miller GE, Chen E, 2011).

Research shows that the use and enforcement of regular bedtimes and consistent, quiet bedtime routines are associated with improved success in going to bed, falling asleep, sleeping through the night, and waking in the morning. (Hale, Berger, LeBourgeois, Brooks-Gunn, 2011). However, living in poverty compromises household stability. Irregular work hours,

stress, exhaustion, and other forms of conflict make it significantly harder for parents to maintain a stable family routine. As a result, parents living in poverty are less likely to implement rigid bedtime rituals. Since bedtime related behaviors tend to be shaped by factors at the caregiver level (e.g., maternal race, age, and education) and household level (e.g., income-to-poverty status, number of adults in household, and number of bedrooms) and not by child characteristics, a parent's chaotic schedule and social norms determine the implementation of a rigid bedtime schedule.

There are clearly large disadvantages to getting enough sleep and in many ways, the effects of living in poverty prevent children from getting the sleep they need. In order to help children sleep better and ultimately improve health, cognitive and behavioral outcomes, design must find a way to intervene via physical, psychological and structural mechanisms.



Introducing Roger

Roger is a device that helps children of low-income families get better sleep. Designed for the many children whose parents work irregular hours, it aims to get children to bed on time, especially when parents aren't available. Roger is a platform that allows parents to record stories on a mobile device for their children to listen to before bed. Like a reverse alarm clock, Roger will sound at a specified time for a 6-minute window, indicating the story is about to start. Children start the stories by interacting with the product during this window.

The product address two of the sleep inhibiting factors unique to low income families. First, Roger addresses the lack of structure commonly found in low income homes by introducing a cue for bedtime. The excitement of hearing a familiar voice, coupled with the urgency to not miss a story, gives children an incentive to get to bed at a reasonable time on their own. This ritual creates a predictable bedtime routine that is essential for healthy circadian rhythms. Second, the sound of hearing a trusted voice combats pre-sleep worries by making children feel



April Williams
Single Parent

AGE LOCATION HOUSEHOLD INCOME
38 Bronx, NY \$20K – 30K

ABOUT APRIL

April has two kids, aged 6 and 11. She works at a hospital in Manhattan as a Medical Technician and has altering shifts between 8 AM – 4:30 PM and 3:30 PM – 12:00 AM. Grandma will fill in some days, but when she isn't around, she has no control over her children's bedtime.

MENTAL MODEL

“I’ll buy you a toy if you go to bed.”

ATTITUDES

- Cheats bedtime if she wants to spend quality time with kids.
- Feels accomplished when kids are in bed before 9:30 PM, but feels disappointed in herself if they aren’t.
- Her bedtime rules aren’t strict, they are more of a guideline.

BEHAVIOURS

- Calls home to wish her kids goodnight when she’s working late.
- Uses persuasion tactics to get children to bed.
- Doesn’t have a routine because every day is different.

JOBS TO BE DONE

“An early bedtime means more me time.”

NEEDS

- Take care of house chores: prepare dinner, clean kitchen, etc.
- Monitor kids’ tasks: help with homework, shower, brush teeth, manage conflict.
- Get children to bed around 9:30 PM.

GOALS

- Establish a more consistent evening schedule.
- Get children to bed earlier so they have a full 10 hours.
- Get more time for myself.



Figure 46.
Persona derived
from patterns
found in user
research

Figure 47.
Storybaord
illustrates key
touchpoints
with product

Research

safe. Since regular closeness increases the opportunity for parents to be emotionally available, it strengthens the relationship between parent and child (Teti, Kim, Mayer, & Countermine, 2010). This availability gives children the comfort they need to fall asleep faster and sleep more soundly at night. By addressing the issues unique to low socioeconomic status families, Roger aims to improve children’s sleep as a strategy to improve health, behavior, and cognitive development.

To understand who I was designing for, I conducted 12 phone interviews with single parents with annual incomes less than \$30,000. To understand behaviors, I asked parents questions about their work schedules and evenings. What time did their kids go to bed? Did they have a bedtime routine? What did they do when their kids refused to go to sleep? To understand their attitudes, I asked questions about how they felt during these times, how they defined their goals and

what their challenges were. Finally, I asked parents how they would describe both the perfect evening as well as the disaster scenario. This gave me insight into the non-obvious ways I could satisfy their needs.

Synthesis

After scanning my interview notes, I created empathy maps to code my findings into a standardized format. I categorized findings and detailed what each user says, thinks, does, and feels. I looked for themes

that emerged across maps and aggregated my findings in the form of a persona. Although fictional, this persona allowed me to visualize the target users attitudes and goals and would serve as a guidepost for my designs.

To understand how the product works in context, I sketched a storyboard of the ideal sequence my fictional user would follow when using the product. The storyboard allowed me to visualize touchpoints between the user and the product along with the emotions they felt at each stage.



Figure 48.
Early sketch
explorations

Ideation

My original idea was to create a live bedtime story device. I first imagined what the product would look like if I combined a nightlight and a radio.

I began by sketching a series of interaction types to turn on the light. These included pushing a button, pulling a string, flipping a switch, and many more. For each interaction type, I explored forms

that would visually communicate the movement. After selecting the best sketches, I created a series of rough models. Sketching in 3D allowed me to experiment with size and context. After settling on a form, I brought my design into CAD where I worked out the minor details. Finally, I created a functional prototype with the CAD model as my template.



Figure 49.
Form exploration
with pink foam
and MDF



Figure 50.
Functional
prototype uses
a mechanical
snap-fit to
complete the
electrical circuit



Figure 51.
Product has an
affordance to lift
the head in order
to reveal the light

Product Design

Roger's product component is designed to feel friendly and operational for children aged 5–12.

From an engineering perspective, the product is a container for a light and a speaker. From a design perspective, the product has a head with affordance for small hands and invites a child to lift it. This interaction reveals the nightlight and presents the child with a moment of wonder and discovery. The exterior of

the speaker is wrapped with breathable upholstery fabric, allowing children to customize Roger's appearance with velcro accessories. The 3 curved legs give the product a light playfulness that is appealing to children. The organic legs let the child know that Roger is friendly and approachable, but also that the product is meant to stand up and stay put in the bedroom.

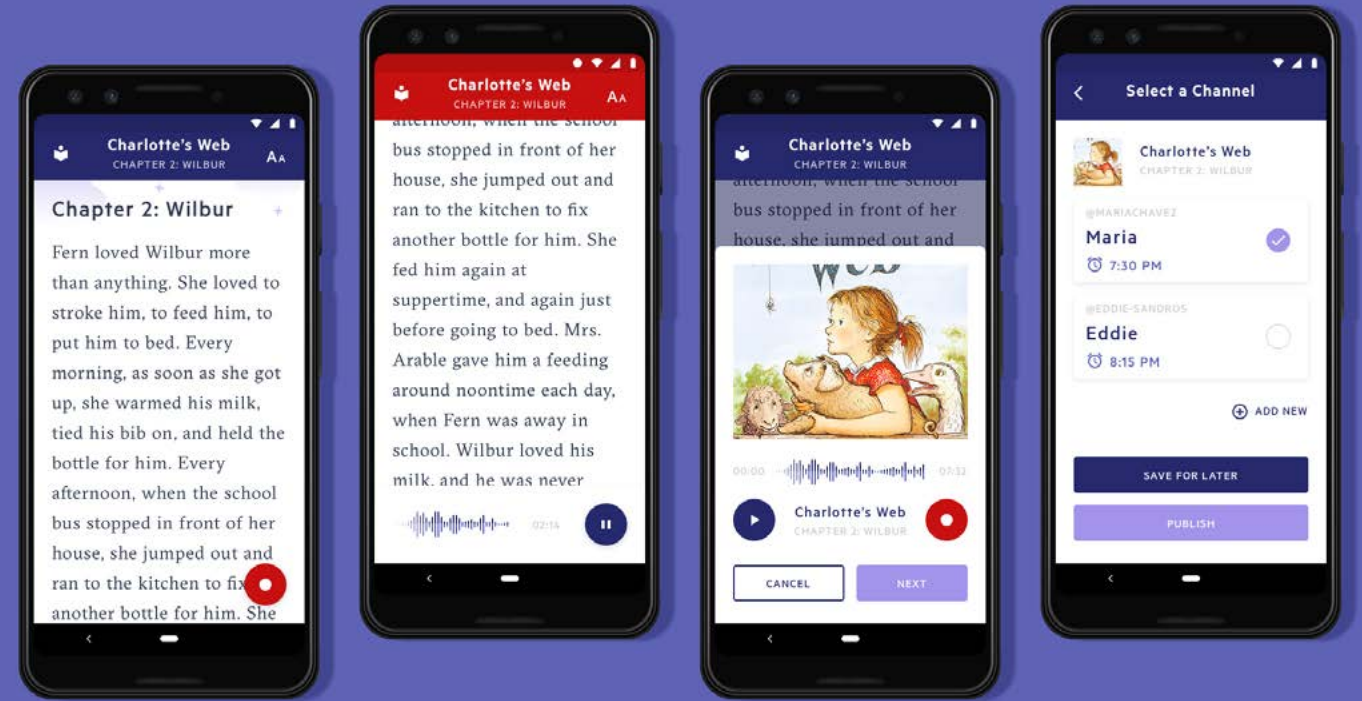


Figure 51.
User flow shows
necessary steps
to record a
bedtime story

Experience Design

Roger's digital component is designed to be delightful and functional for low income parents. Since the user group is older, I had a little more operational flexibility; however, I still needed to make sure information was categorized in a way that was natural for users.

The main function of the app is to allow parents to record stories that will eventually sound on the physical product. I listed the minimum key features the app

needed to fulfill. First, it was necessary to set up and pair the devices so that bedtimes and content would be developmentally appropriate. Second, parents needed to access a library of content that they could read. Finally, they needed to record and publish the stories. With my main features defined, I sketched a task flow detailing the ideal sequence and translated them into wireframes to visually capture each state. Once I had the foundation, I polished my design and created clickable prototypes.

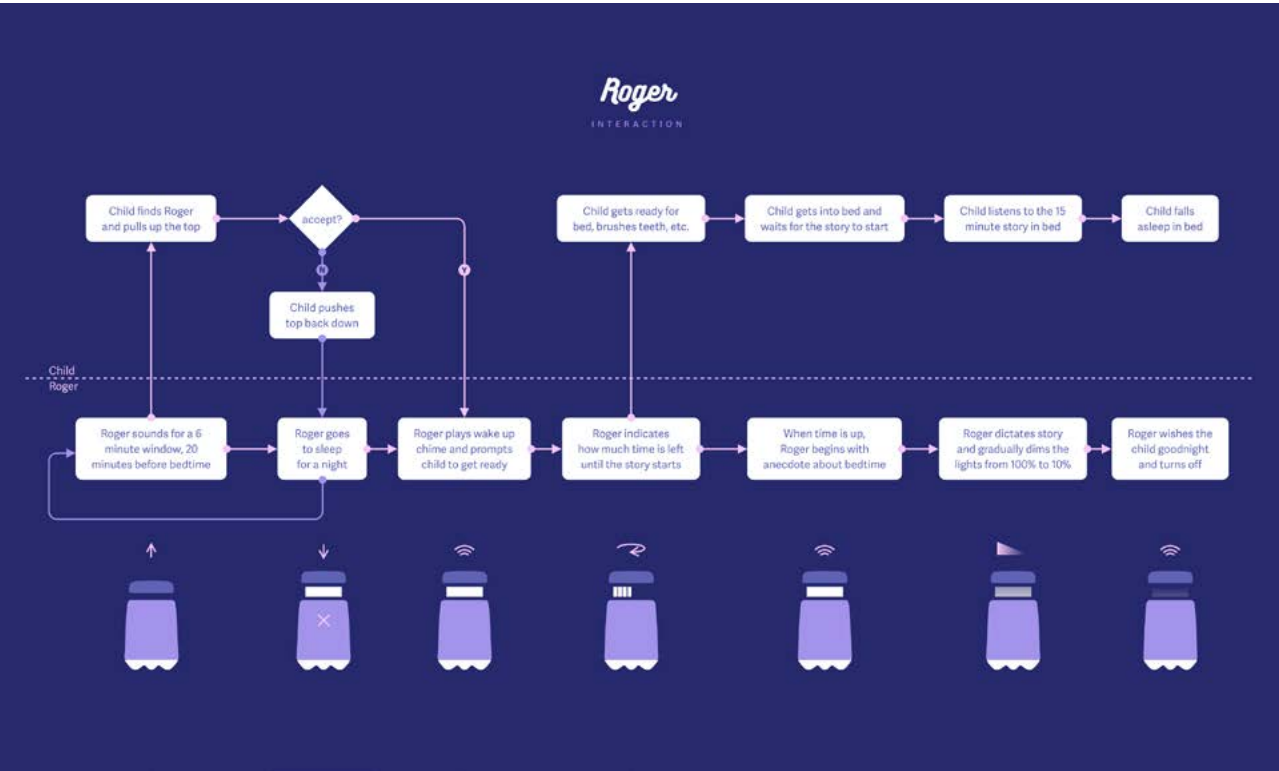
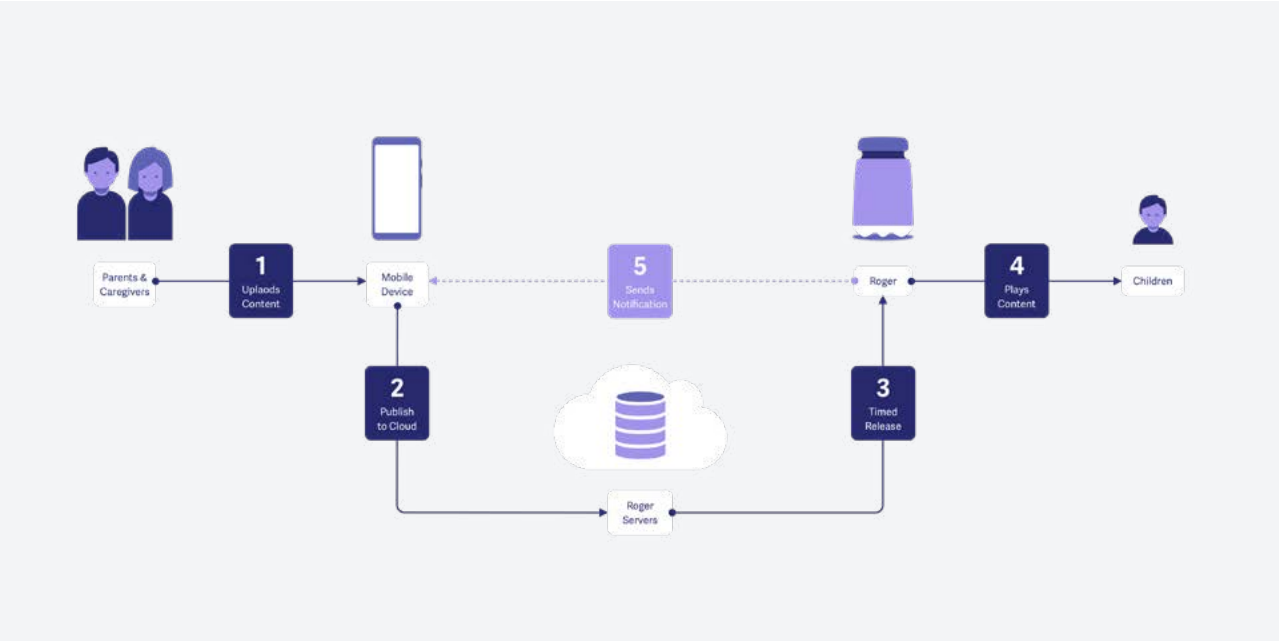


Figure 52.
(Top) State machine diagram showing key interactions



SCENARIO 1:
NO UPLOADS BEFORE DAILY DEADLINE

POSITION #	PRIORITY	UPLOAD TIME	CONTENT	OWNER	EVENT
1	B	12:00 PM	DAILY ROGER CAST	ROGER	PLAYS TONIGHT

SCENARIO 2:
MULTIPLE UPLOADS BEFORE DAILY DEADLINE

POSITION #	PRIORITY	TIME OF UPLOAD	CONTENT	OWNER	EVENT
1	A	3:13 PM	GOODNIGHT MOON	MOM	PLAYS TONIGHT
2	A	4:40 PM	PETER RABBIT	GRANDPA	POSITION 1 TOMORROW
3	B	12:00 PM	DAILY ROGER CAST	ROGER	DISMISS

Figure 54.
Failsafe diagram showing content priorities

Failsafes

Understanding that the user I was designing for did not have the same flexibility as the average person, I designed a failsafe mechanism that would make sure the product delivered content that night, despite not having a recording uploaded. The failsafe mechanism used conditional logic to prioritize decisions based on events that occurred. The mechanism takes its form as a content queue. If no content is uploaded before the daily deadline, Roger defaults to a story cast—a live story dictated

internally by the Roger team. Likewise, if multiple recordings are uploaded, for example, grandma and mom contribute on the same day, the earlier content takes priority and the secondary content would be moved to the next day's queue.



Ok Google,
Talk to Roger



Edge Scenarios

Considering that some potential users, were not as technically savvy, I designed a voice interface for the digital component. To interact with the voice assistant, users could call their Google assistant, tell the assistant who they were reading to, and begin recording their content. The bot on the other end of the line would dictate the story one line at a time for the user to recite. Line by line, non-technical users could navigate through the story by repeating each line.

Testing

I began testing Roger's business model by making a list of my riskiest assumptions. In order for the product to be successful, the following must be true:

1. Kids will go to bed on their own if there is a bedtime story waiting for them.
2. Parents will read and record stories on their phone during the day.
3. Kids will connect with a product that's supposed to represent their parent.
4. Parents will pay for a product that will get their kids to bed on time.

I reworded my assumptions as hypotheses to keep my statements consistent.

1. We believe that (low-income kids) will (go to bed on their own) because (they are triggered and comforted by the sound of their parent's voice.)
2. If we (provide the platform), we believe that (low-income parents) will (read and record stories for their kids from their phones) because (they want to send their kids to bed when they aren't around).
3. We believe (low-income kids) will (connect emotionally with a product that is supposed to represent their parents) because (it sounds like their parents).
4. We believe that (low-income parents) will (pay for a product that will get their kids to bed on time) because (it's good for their children's health and relieves stress).

I then established a set of criteria for success.

1. We will know when this is true when (qualitative and quantitative metrics)
2. We will know this is true when 4/5 kids go to bed right away after hearing a story over the phone.
3. We will know this is true when 4/5 parents record a story on their computer during the day and upload the link.
4. We will know this is true when 15/100 kids click on our youtube ads.
5. We will know this is true when 15/100 site visitors sign up for our product updates on our landing page.

Finally, I designed tests for each hypothesis.

1. Minimum viable product using a cellphone in a box
2. A feature fake with an online voice recorder, then follow up solution interviews
3. Click-out video ads
4. A landing page with a lead generator, follow up problem interviews



Minimum Viable Product

Due to tight time constraints, I decided to test my riskiest assumption: kids will go to bed on their own if there is a bedtime story waiting for them. I asked a professor if she could help me test my assumption on her eight-year-old son using a voice recording and a Bluetooth speaker. Together, we designed a test that would replicate the functionality of Roger. For five consecutive nights, we ran the same test—every night, she would play a chime on the speaker five minutes before bedtime, then play a short recording of a bedtime story.

Although my test subject did stay in bed for the duration of the story, there was not enough evidence suggesting that a child would go to bed on their own if they

weren't already prompted to do so. This test did, however, open up some interesting questions for more elaborate testing. How does this affect a child emotionally if the parent isn't in the house? To what extent does this make the child feel safe? How do these variables measure across socio-economic backgrounds? To what extent does age play a role in this product's effectiveness? How long would it take for a child to acclimate to the product? To answer these questions, I would require long term study of significant size that matches a set of circumstances I'm designing for. If I were to continue testing this product, I would consider reaching out to research facilities at NYU or Columbia for a possible collaboration.



Final Thoughts

Roger aims to bridge the gap between parent and child even when time and distance don't permit it. The product helps compensate for the socio-emotional disadvantages children face while growing up in the context of low-income—specifically focusing on themes of structure and nurture. Design can have the greatest impact with relatively inexpensive, scalable, and immediately implementable interventions by creating positive interpersonal relationships

between parents and children of low-income families. Positive social-emotional validation in the home, like having a story read before bed, lets children know that they are loved and sends them deep transcendent messages about their place in the world.

06

Conclusion

Closing Remarks

6.1

Looking Forward

Intervening in the lives of disadvantaged children—by educating them better in school, helping their parents support them better at home, or ideally, some combination of the two—is the most effective and promising anti-poverty strategy we have.

— Paul Tough,
Author of *Helping Children Succeed*

A New Horizon

I am hopeful that we can continue to provide solutions for families where the conditions are working against them—whether it be providing tools that are unique to the needs of working families, facilitating education about parenthood, or simply acknowledging parents for what they do.

Today, there are countless products for workplace productivity, but few for optimization in the home. We are starting to see tech giants develop more and more smart home appliances, however, these

products are mainly focused around convenience, and cynically, data collection. I believe now, in our hyper-connected world, we are approaching a new horizon where co-creation methods, low barriers to production, and advancements in developmental psychology can blend together to create new forms of value. Regardless of their financial conditions and time constraints, I imagine a world where families have just as much foresight and agency over their relationships as they do scheduling a meeting.

As I mentioned previously, design, through the creation of new products, services and experiences, has the benefit of being scalable, adaptable, relatively inexpensive and immediately implementable. My proposal is not for products to replace existing methods of interventions such as education and government programs, rather, I believe design is uniquely positioned to provide new forms value as part of a broader solution to benefit families in need.

I would like to acknowledge that introducing product interventions in the homes of disadvantaged families is somewhat of an uncomfortable proposition. It would be easy for someone like me to make assumptions or talk about other people's parenting practices in a critical

way, especially those that weren't as fortunate to grow up with the material or social privileges I've had. As I continue to explore this territory, it is therefore critical for me to work closely with the families I'm designing for so that future proposals have the sensitivity and nuance to be welcomed by my users. By building stronger family environments by design, I am hopeful that tomorrow will promise a more equitable future for today's youth.

Sincerely yours,

KEVIN COOK

6.2

Thank You

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