“IT’S NOT JUST PURE SCIENCE”: FEDERAL FUNDING OF CHILDREN’S MENTAL HEALTH RESEARCH THROUGH THE REQUEST FOR APPLICATIONS (RFA) PROCESS

by

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*We also certify that written approval has been obtained for any proprietary material contained therein.
DEDICATION

To my husband, Sam, thank you.

And to those everywhere who suffer emotional pain, may you find peace.

And if the night runs over
And if the day won’t last
And if your way should falter
Along this stony pass
It’s just a moment
This time will pass - U2
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“It’s Not Just Pure Science”: Federal Funding of Children’s Mental Health Research through the Request for Applications (RFA) Process

Abstract by
LYNN MARIE FALLETTA

In 1979, McKinley called for “re-focusing upstream” to address social contexts responsible for manufacturing illness, rather than “downstream” approaches initiated after disease onset. Multiple social/contextual factors are linked to children’s mental health problems, including socioeconomic status; neighborhood, school, and family factors; and victimization. Moreover, mental health problems are stratified by race, ethnicity, and gender. This dissertation examines the disjuncture between the need to “focus upstream” and the apparent lack of attention to contextual factors in the domain of children’s mental health.

Examining how intervention research is funded could provide insight into this phenomenon. Intervention research is constrained and directed by funding, and by the content of funders’ announcements, including federal Requests for Applications (RFAs). Using a sociology of science framework, this dissertation investigates three interrelated questions. First, what are the implicit or explicit explanatory foci and/or intervention strategies of child mental health-related RFAs? Second, to what extent do they recognize the importance of upstream factors? Third, what factors might account for their intellectual and analytical foci?

Content analysis of 39 RFAs released between 1992 and 2009 reveals that RFAs focused on individual explanations and solutions for children’s mental health problems
vastly outnumber those examining social factors; *upstream* social factors are virtually absent. Biological causes and solutions are particularly pervasive: Reductionist approaches dominate federal funding announcements relevant to children’s mental health.

Interviews were conducted with five National Institutes of Health (NIH) program officers, who concurred that social interventions were few. Program officers embraced a biomedical model of mental health, providing one possible reason for the focus on individual explanations and solutions for children’s mental health problems in RFAs. Program officers also identified the difficulty of implementing structural interventions, perceived functionality of the biomedical model, disciplinary divisions in responsibility for attention to environmental factors, and a dearth of sociological influence at NIH, as possible explanations.

Potential policy implications include systematic reflexivity on the framing of problems in NIH-funded research, improved engagement of social scientists in federal research policy formation, and re-calibration of child mental health policy to create balance between social and individual factors research, including targeting upstream causes.
CHAPTER 1: INTRODUCTION

I. Background

Several years ago the following question was posted on an evaluation research listserv:

Hi all -
I am looking for references to help interpret studies where SES indicators explain a large proportion of the variation in the variable of interest (e.g. student test scores), leaving little additional variation to be explained. Under these circumstances, any treatment/program/intervention variable entered into a regression equation tends to explain little additional variation (changes in R2 of around .001 for example). We are finding this to be true across a number of program evaluations. Obviously the relationships between the program and outcome variables need to be assessed while controlling for SES but what does the small effect size mean - in terms of program/policy evaluation - when SES has such a strong predictive power? Any discussion/references will be welcome.
Thanks (Westover 2006).

This posting speaks volumes about the level of intervention at which social programs are typically aimed, the unit of analysis at which much social research is conducted, and the tendency to “control” for social factors in research related to the human experience. Despite a wealth of literature demonstrating the effects of social background factors on a wide range of outcomes, including education (as in the example above), crime, health, and mental health, there seems to be a reluctance among researchers and social problem interventionists to focus on upstream, underlying structural factors that influence individual and group outcomes. Because these practitioners and investigators often acknowledge the causal nature of these factors, it stands to reason that there is some
other, more dominating reason why interventions and research continue to take place in large part at the individual level.

It could be argued that the structured risks produced by poverty, unequal access to education and opportunity, neighborhood disorganization, and other structural variables are beyond the scope of any given discipline and that these are immense, incredibly complex problems that will never be surmounted. But the “these things are too hard to change” explanation is not sufficient. To be sure, the problem is daunting, but it is not solved by avoidance. While it may not be possible to completely eliminate structural causes of social problems, well-known public health interventions such as sanitation and water and food quality programs have dramatically improved population health over the past century. More recent evidence has demonstrated the effectiveness of structural interventions on a range of outcomes. In HIV/AIDS prevention, for example, community organization and mobilization, services integration, making federal and state funding conditional on changing local laws to those that promote public health, and economic and educational interventions have all met with success in reducing risks for HIV/AIDS (Blankenship, Friedman, Dworkin & Mantell 2006: 63-66). Yet these preventive, structural interventions seem to be few and far between, especially in the domain of mental health, including children’s mental health, where interventions almost always involve reductionist approaches to problem definition and solution, such as individual psychotherapy and/or psychotropic medications. It seems that the role of structural factors is largely avoided in the framing of social problems research related to mental health and in services intended to ameliorate its effects.

What forces are in position that keep this arrangement in place – the focus on
individual “problems” to the neglect of social ones, and in particular those located upstream – in research and in intervention services? A key point of departure for examining this question is to realize that intervention and other social problems research is often constrained and directed by funding, and by the content of funders’ announcements, such as those in the United States Department of Health and Human Services’ Requests for Applications (RFAs). Examining how interventions and research are funded could provide valuable insight into the continued phenomenon of microfication (Hagestad & Dannefer 2001: 4), or the increasing attention “concentrated on psychosocial characteristics of individuals in microinteractions, to the neglect of the macrolevel” in the domain of children’s mental health.

Many types of research funding are available, such as institutional awards and foundation grants. Additionally, services are funded through a variety of means, such as private insurance, Medicare, and Medicaid. But RFAs, or federal funding opportunities known as grants, are unique in the central role they play as the nexus of scientific knowledge generation among scientists working in multiple settings, including “domestic and foreign, for-profit and non-profit organizations, public and private, such as universities, colleges, hospitals, laboratories, units of State and local governments, and eligible agencies of the Federal government” (e.g., RFA-MH-00-011). Because the reach of federal grants in terms of entities and types of research funded is so broad, the content of RFAs has great power in directing the attention and energies of researchers.
II. **Federal Funding of Scientific Research Activities**

Requests for Applications (RFAs) are issued through the Department of Health and Human Services (DHHS) Grants.gov website, where investigators can search for relevant funding opportunities and apply for funds. RFAs are the *solicitations* for applications for grant awards; applying does not guarantee receipt of funds. In 2007, 180,659 grant applications were received through Grants.gov (Grants.gov 2007). The federal government is, by far, the most prolific funder of research and related projects: Grants.gov distributes approximately $500 billion annually (Grants.gov 2008) compared to approximately $65.2 billion spent by U.S. pharmaceutical companies on research and development (PhRMA 2009) and $45.6 billion awarded by private foundations for all projects (Foundation Center 2009a), approximately 11% of which is for research (Foundation Center 2009b).

Grant programs of the U.S. government include funding for extramural research, intramural research, and other programs, such as construction projects. Of particular interest is government funding for extramural research, funds distributed *outside* of the NIH (as opposed to initiatives conducted within NIH) to investigators working in the field of child mental health, specifically, research grants for projects, centers, careers, and training, typically awarded to university researchers. These grants serve as critical drivers behind what research is performed in the specified field, effectively shaping the conceptualization of problems and solutions in identified areas of concern. Appendix A provides more information on parameters of extramural federal grant programs, including descriptions of mechanisms of distribution and types of funding available.
RFAs, as well as Program Announcements (PAs), are the official mechanisms used by the National Institutes of Health to “stimulate research in specific areas of science” (NIH 2009a) for extramural research and hence deliver the message of funding priorities set at the federal level. A PA is “an announcement by an NIH Institute or Center requesting applications in the stated scientific areas” (NIH 2009b) and identifies “areas of increased priority and/or emphasis on particular funding mechanisms for a specific area of science” (USDHHS 2008a). An RFA is “the official statement inviting grant or cooperative agreement applications to accomplish a specific program purpose. RFAs indicate the amount of funds set aside for the competition and generally identify a single application receipt date” (NIH 2009a) and “identify a more narrowly defined area for which one or more NIH institutes have set aside funds for awarding grants” (USDHHS 2008a).

The issuing of RFAs/PAs is part of a complex chain of events involved in the creation of public policy surrounding social problems. RFAs/PAs can be considered manifestations of federal science policy which, like all policy, is the result of a political process involving agenda setting, policy formulation, legitimation, budgeting, and allocation (Peters 1996). Funds are allocated to the Department of Health and Human Services and its various institutes and agencies by Congress through the federal budget based on budget requests and justifications presented during the budgeting process. The amount awarded reflects the priority level assigned to various areas of interest by members of Congress. The community of science, organizations representing patients, voluntary health organizations, the White House, and various internal councils also contribute to setting the NIH research agenda (NIH 2010a).
Specific research initiatives developed by the various institutes are reflected in RFAs and are intended to promote research in areas of need, such as in the event of a public health crisis or as identified by members of the scientific community or by legislators (NIAID 2010). Prior to becoming an official initiative, potential initiatives are developed as concepts which compete with one another for funds based on the institutes’ priorities (NIAID 2010). Program Announcements (PAs) are also part of this process and indicate priority areas of interest, though they do not always include set-aside funds. Because both RFAs and PAs signify NIH funding priorities, both are included in this study, however hereafter will be referred to as RFAs.

It is important to study the content of RFAs and the process by which they are constructed because they have considerable influence over the research investigators eventually carry out – they serve as the notice that specified funds are available in specific areas and identify topics of interest to the funding agencies. By defining and framing the problems at hand, RFAs shape what knowledge is accepted as customary in the field and what methods are preferred for studying them. While it is also important to study who receives funding through the RFA process, investigating how problems and solutions are framed is a logical starting point for understanding the creation of science through federal funding.

For this study, National Institutes of Health (NIH) program officers and scientific contact persons are key informants (Schutt 2006: 301) with the expertise to explain the forces that determine the focus and content of RFAs. Program officers and scientific contact persons are in a unique position to comment on the construction of RFAs because they are involved in the creation of RFAs from idea inception to final oversight of the
funded project. Program officers are responsible for initiating, writing, and presenting ideas for areas to fund, and for conceptualizing and writing RFAs on topics that are selected for funding. The opinions and conceptual approaches of program officers are thus crucial to understanding how problem areas are defined and what solutions are favored in calls for applications for funded projects. Program officers also discuss the RFAs with potential applicants, which may influence their decisions to submit specific types of proposals (NIH 2009c).

Because program officers play a central role in the development of funding opportunities, their belief system surrounding the specific issue or area of interest that is the topic of an RFA may have a significant impact on the content of RFAs they are responsible for developing, and ultimately the types of science that are funded. Additionally, during the process of RFA construction, factors that fall outside of the scientific domain have the potential to influence and become part of the creation of science. In other words, nonscientific factors may affect science in ways that are not transparent, yet may be significant in their effects. For example, do nonscientists, institutional arrangements, or political ideologies become entrenched within the scientific process by shaping problem framing? Identifying and examining the nonscientific features that affect scientific inquiry is another important task in explaining the content of RFAs.

III. Research Questions

This project has two interrelated objectives. The first objective entails the
examination of the implicit or explicit explanatory foci and/or intervention strategies of child mental health-related RFAs. Through systematic evaluation of the content of RFAs, this study determines whether the level of intervention in federal funding for children’s mental health research and services is dominated by a focus on individuals as the locus of the problem, as well as the relative concentration on upstream and downstream interventions for children’s mental health problems presented in the RFAs. Because RFAs serve as notification of the types of research that NIH deems valuable and fundable, the content of RFAs is one possible explanation for the continued focus on individualized approaches to child mental health. In addition to having a practical effect on the type of science that is produced, RFAs are products of socially and historically located human activity; thus they can be treated as social artifacts representing dominant ideologies on the nature of children’s mental health problems.

The second objective involves questioning RFA authors about their experiences with RFA construction and their beliefs about children’s mental health problems. Through a series of semi-structured interviews with the authors of RFAs related to children’s mental health, this study begins to explore why RFAs are written the way that they are. Why, despite the evidence for the sociogenesis of children’s mental health problems, do most RFAs focus on the individual as the level of intervention? Why are social-structural variables downplayed or excluded from research on children’s mental health funded through RFAs? Why do interventions framed by RFAs seem to target downstream treatment, rather than the upstream prevention of children’s mental health problems? These questions are approached both through direct questioning of authors regarding the process and content of RFA construction, and by examining their belief
systems regarding what causes mental health problems in children and what solutions should be employed to solve these problems. These individuals have an insider’s view of what forces are responsible for shaping the content of RFAs, and their potentially unexamined thoughts and beliefs have great potential to influence federal research policy related to children’s mental health.

The specific research questions and hypotheses for this study are:

**Research Question 1:** To what extent are RFA and PA funding opportunities focused on individual factors as the locus of causation, and appropriate focus of intervention, to the exclusion of those recognizing the role of upstream social factors in the creation of, and as potential targets of intervention for, child mental health problems?

**Research Hypothesis 1:** RFAs and PAs related to children’s mental health will be dominated by a focus on individual-level causes, especially biological and psychological causes, and individualized solutions put into place after the onset of mental health problems, while social interventions, especially *upstream* ones, will be marginalized.

**Research Question 2:** What forces explain the content of RFAs and PAs related to children’s mental health?

**Research Hypothesis 2a:** Authors of RFAs and PAs related to children’s mental health will articulate a reductionist perspective on the causation of, and appropriate interventions for, children’s mental health problems.

**Research Hypothesis 2b:** Authors or RFAs and PAs related to children’s mental health will identify multiple “nonscientific” factors that influence content.

**IV. Theoretical Orientation**

A sociology of science framework is used to understand the construction and content of RFAs. Scientists unavoidably rely, however unwittingly, on their social context to shape their understandings and experiences. Like fish in water, humans are immersed in social relations and structures upon which they typically do not reflect
Scientists and science can be considered similarly “bathed” in society and culture: Dominant ideologies in operation at this particular point in history in the United States shape political and scientific consciousness about problems related to the mental health of children. This consciousness is reflected in the research funding priorities of the federal government, and these funding mechanisms, in turn, affect the framing of the problem as one that should be solved by individualized approaches.

Because assumptions about the objectivity of science are so embedded in conceptions of its nature, actors within the research and funding worlds might not reflect on individualism in their health and mental health research, and as a result, they may take for granted that the individual is the level at which interventions should be aimed. Latour and Woolgar (1979), for example, argue that science lacks reflexivity, instead unquestioningly accepting what it produces without examining how these products came to be. Sociologists of science should therefore “apprehend as strange those aspects of scientific activity which are readily taken for granted” (Latour & Woolgar 1979: 29).

Further, because each field of science is informed by its own mythology, or a “broad frame of reference within which can be situated the activities and practices of a particular culture” (Latour and Woolgar 1979: 55), it is necessary to tease out these mythologies and subject them to inquiry. Latour and Woolgar demonstrate how, in the lab observed in their study, the mythology of the field of neuroendocrinology is unexamined and, for the most part, unmentioned, including the fact that their entire body of work relies on the idea that the brain directs the endocrine system.

My theoretical orientation is both constructionist (Berger & Luckmann 1966) and critical (e.g., Habermas 1970). RFAs are composed through a social process described by
Dannefer (1999: 73) as “world construction.” In this sense, RFAs are the product of the social system of U.S. science grant-making policy, constructed by members of the scientific community when they communicate expectations regarding what types and topics of science are appropriate and therefore fundable. By responding to RFAs about children’s mental health that call for research at the individual level, investigators legitimate the individual as the proper unit of analysis, which creates the appearance that it is natural to study mental health as an individualized phenomenon. Thus, the types of research that RFAs call for influence what science is conducted, unquestioned acceptance of them reinforces the legitimacy of reductionist approaches to mental health, and evidence is accumulated only at the individual level, while social influences on children’s mental health are marginalized.

Accordingly, the expressed foci of causes and solutions for children’s mental health issues present in RFAs can be analyzed, providing a window in to the construction of policy and treatment for children’s mental health problems. Further, the actors who construct RFAs can be queried to determine the extent to which they question the content or reflect on the extant topics of study presented in RFAs, if at all.

While a constructionist approach is useful in elucidating the process of RFA creation, it does not attend to the power relationships which enable the creation of a system of science which favors individual approaches to the problem of child mental health. A critical perspective is focused on exposing and changing patterns of dominance. In the case of individualized approaches to mental health, the forces of medicalization, “biomania”, or faith in the medical model to solve physical and mental health problems (Wheaton 2001), and dominant ideologies about individual responsibility have the
potential to significantly shape the content of RFAs. In contrast, critical models focus upstream on the fundamental social causes of mental health problems – those rooted in existing social arrangements which favor the health and mental health of some groups relative to others.

The increasing dominance of the medical profession has been documented in several fields in addition to mental health, including child abuse, substance abuse, aging, child-birth and obesity (Conrad 1992). The further medicine reaches into non-medical arenas and establishes its legitimacy by framing problems as treatable through medical intervention, the more it fuels the rising tide of biomania. Medicalization serves the powerful interests of the medical-industrial complex, including the pharmaceutical industry, medical professionals, and medical researchers, not necessarily those of the individuals who suffer from mental health problems. Because of its implications for individuals suffering from mental illness, the medical profession’s ownership of the problem of child mental health must be questioned, critical analysis of its governance of solutions for child mental health undertaken, and solutions outside the medical realm considered.

Psychological approaches to mental health must also be considered relative to their role in perpetuating the idea that mental health is a problem solely of individuals. Not only do psychological models frequently reinforce the use of psychopharmacological interventions, psychological interventions aim to change individual reactions to social conditions as opposed to empowering individuals to organize to modify conditions to be more amenable to health. The ideology of individual responsibility and the idea that health behaviors are active choices can be tied to Americans’ dogmatic ideals of
individual strength and inherent capability to overcome all odds with hard work. These beliefs, while seemingly based on an optimistic view of human action, serve to relieve from culpability those with the power and resources to make needed changes. A commonly expressed belief is that if the poor just worked harder, their situation would improve, and if individuals with a range of ailments tried hard enough and followed the directions of health professionals, they would not be ill. These ideologies also allow manufacturers of illness, including policies which leave some groups vulnerable through the stratification of risk factors, and corporations who produce environmental toxins, to escape public scrutiny for their disease-producing actions.

V. Importance of Topic

This study investigates the ideology of individualism and how this may translate into scientific research priorities; scientific research related to children’s mental health is the topic considered. In the tradition of C. Wright Mills (1959), this project examines how the structural issues at least partially responsible for the making of mental health problems are reduced to private troubles of individuals.

Why study mental health as opposed to physical health? Unlike for many diseases of the body, there are currently no biological markers of, and no known physiological pathways leading to, mental health symptoms (Schwartz & Corcoran 2010). Like many difficulties that vex substantial numbers of society’s members, including academic failure, substance abuse, unemployment, and crime, mental health has been reduced to a problem of individuals (Pearlin, Avison & Fazio 2007: 36), and
like many of these other issues, it has been co-opted by the medical profession as one of its own, despite its contested etiology. The question of why this is the case begs interrogation.

In addition to questioning the hegemony of the medical profession over mental health problems due to continued uncertainty regarding its actual causes, historical understandings of mental health have been varied and colorful, and unfortunately treatments at times have been both humiliating and painful (Foucault 1965; Greenberg 2010). Thus, it is important to turn a critical eye to the ways in which mental health problems are ministered to in the current age. The potentially dangerous chemical treatment regimens comprising many biomedical intervention approaches should be subject to a rigorous examination, lest they attain the dubious reputation assigned to the snake oils and lobotomies of the past. A problem with no known biological causes is being treated with pharmaceuticals in significant numbers, even in children (Cohen, McCubbin, Collin & Pérondeau 2001). It should not be taken for granted that this is the appropriate intervention, nor even level of intervention, and alternative measures require consideration.

Why study children? A great deal of evidence points to the effects of individuals’ early experiences on their later health and mental health. Mental health problems in childhood are linked with a range of negative outcomes, including continued mental health issues, unemployment, involvement with the criminal justice system, and substance abuse. Additionally, and importantly, childhood represents an early point in the operation of the dynamics of cumulative advantage/disadvantage (CDA) (Dannefer1987): There is increasing evidence that inequalities in the population persist and increase over
the life course of a cohort, making closing gaps in childhood health imperative to overall population health in the long term.

The number of children diagnosed with mental health problems points to a need to investigate the way these problems are treated. While definitions of children’s mental health are culturally and temporally specific, and problems exist with the identification and classification of mental health diagnoses, statistics on the state of children’s mental health in the United States are noteworthy nonetheless. For the purpose of this study, I use Miles’ et al. (2010) definition of mental health problems, “the spectrum of mental problems ranging from serious mental illness to problematic behavior that has been shown to indicate later mental disorders.” Thus, children’s mental health problems are conceptualized as including both DSM-diagnosed psychiatric disorders such as depressive disorders, anxiety disorders, conduct disorders, and ADHD, and more global problems with psychological distress, including elevated but subclinical thresholds of internalizing problems such as depression and anxiety, and externalizing problems such as disruptive behaviors. While DSM diagnoses also represent a contested area of study, I utilize these concepts in order to investigate the phenomenon of individualization. Conceptual issues with DSM diagnostic categories and its consequences are not the focus of this study.

An estimated 21% of American youth ages 9 to 17 have the symptoms of a DSM-IV mental health diagnosis over a one-year period, 11% experience impairment that is considered significant, and 5% experience extreme functional impairment (USDHHS 1999). Many of these children are suffering –from the effects of the disorder itself and its treatment; social stigma related to their symptoms, diagnosis and treatment; and
disruption of learning and social development. Because these estimates are disease-specific, it is likely that there are more children suffering from emotional distress who are not captured by this approach (Aneshensel 2005).

The trend in prevalence of children’s mental health problems is somewhat unclear. Achenbach, Dumenci, and Rescorla (2003) found that scores on a range of measures of child mental health increased from 1976 to 1989, then decreased from 1989 to 1999. The exception was oppositional defiant problems. However, in their review of multiple studies, Rutter and Smith (1995) found rising rates of adolescent conduct disorders, substance abuse, depression, and suicide spanning 50 years. Data from the UK indicate that a dramatic increase in conduct problems over the past 25 years is not due to changes in reporting of these problems; instead the authors speculate that these increases are due to environmental changes, including changes in family structure and increasing socioeconomic inequality (Collishaw, Maughan, Goodman & Pickles 2004).

Treatment of children’s mental health problems is a costly, and for pharmaceutical companies, profitable, business. In 1998, the total cost of children’s mental health treatment services in the United States was estimated at $12 billion, more than $1 billion of which was spent on psychotropic medications. About three-fourths of the medication expenditures were for stimulants (used for treating ADHD) and antidepressants (RAND 2001).

While treatment recommendations for child mental health disorders typically involve a combination of medication and therapy, in recent years, among psychiatrists, there has been an increase in pharmacological treatment of mental health disorders, and a decrease in psychotherapy, which has been attributed in part to an increase in the
specialization of psychiatrists in pharmacotherapy due to financial incentives (Mojtabai & Olfson 2008). Increasingly, younger children are prescribed psychotropics in off-label use; Zito et al. (2000) reported that between 1991 and 1995, this off-label prescribing for 2- to 4-year-olds tripled. In addition to a rise in pharmaceutical use by psychiatrists, because the new generation of psychopharmacological agents are often considered safe, medication is increasingly being prescribed by primary care physicians without the child ever being seen by a mental health specialist (Zito et al. 2002). It is estimated that approximately 6 million children take medication for psychological problems (Cohen, McCubbin, Collin & Pérodeau 2001).

Thus, children’s mental health treatment relies on identifying problems in individuals and trying to provide care in the form of medication, and at times, psychotherapy. However, an examination of the epidemiology of mental health problems points to larger social forces responsible for genesis of mental illness. These findings call into question the exclusive focus on individual treatment as the solution to the problem of children’s mental health disorders.

In his seminal 1979 article, McKinley called for a “re-focusing upstream” to address the individuals, organizations, and policies responsible for manufacturing illness, as opposed to short-sighted, individual, interventional “downstream” approaches to health initiated after the onset of disease. McKinley (1979: 520) argued that “the frequent failure of many health intervention programs can be largely attributed to the inadequate recognition we give to aspects of social context”. But in recent years, rather than an increased awareness of social context in research on health and health services, or legislation aimed at the manufacturers of illness, there has been an intense focus on the
individual as the locus of health problem causation and intervention. This
individualization of health and illness is played out in common understandings of disease
etiology, in popular press coverage of health news, and in health policy related to
research and services. Perceptions, coverage, and policies related to mental health are
also subject to individualization. Without specific questioning of the framing of mental
health as a problem of individuals and inquiring whether the practice of treating child
mental health problems after their onset as opposed to preventing them to begin with is
appropriate, these problems will continue to arise and cause distress for children and their
families.

VI. Organization of Dissertation

Following the introduction just provided in Chapter 1, the organization of the
thesis is as follows: Chapter 2 presents the study’s theoretical frame, sociology of
science. Chapter 3 provides background on the problem of child mental health, historical
views of mental health, as well as current medical and psychological models of mental
health. Chapter 4 presents the sociological perspective on mental health disorders.
Chapter 5 describes the study’s research approach and methodology, as well as the
process for the selection of the RFA and interview samples and the coding and analysis
strategy for each data type. Chapter 6 describes the results of the analysis of causes and
solutions for children’s mental health presented in RFAs. Chapter 7 gives the results of
interviews with program officers relative to their mental health belief systems. Chapter 8
provides a description of the factors identified by respondents as relevant to the
construction of science through the RFA process. Chapter 9 includes discussion of findings and conclusions, including policy implications, limitations of the study, and future directions for research.
CHAPTER 2: SCIENTIFIC PARADIGMS AND IDEOLOGY

I. The Sociology of Knowledge and the Sociology of Science

How is the knowledge that shapes our understanding of the world around us produced? How does power influence the production of knowledge? How do certain types of knowledge become accepted as truth? An attempt to understand these questions relative to the production of scientific knowledge surrounding children’s mental health requires attention to the numerous influences that structure knowledge in general and scientific knowledge in particular. The sociologies of knowledge and science provide useful frameworks for analysis of these inquiries. Knowledge is produced via interactions: it is socially constructed (Berger & Luckmann 1966), and the sociology of knowledge:

…must concern itself with whatever passes for “knowledge” in a society, regardless of the ultimate validity or invalidity (by whatever criteria) of such “knowledge”. And insofar as all human “knowledge” is developed, transmitted and maintained in social situations, the sociology of knowledge must seek to understand the processes by which this is done in such a way that a taken-for-granted “reality” congeals for the man in the street. In other words, we contend that the sociology of knowledge is concerned with the analysis of the social construction of reality (Berger & Luckmann 1966: 3).

Therefore, engaging in the sociology of knowledge requires that we examine the end product of social interactions – knowledge – and how it comes to be accepted as such. “Informal”, everyday knowledge (Swidler & Ardit 1994) is produced and given meaning through interactions with others and with institutions; it is passed on through time and via everyday social practices and traditions, and is conditioned by ones’ position in the social
hierarchy. In this sense, everyone produces knowledge. This knowledge informs attitudes and beliefs and shapes individual actions.

This everyday production of knowledge is influenced by power relationships operating within the interactions and by the power structures acting upon the relationships. Within micro-interactions, it is easy enough to discern how parents shape what their children know and believe, how teachers transmit knowledge to students, and the ways in which supervisors affect the job-related information accepted and utilized by employees. Likewise, when individuals interact with institutions, power relationships are often readily evident: The legal system influences individual beliefs about appropriate behaviors and churches help form the basis of members’ moral understandings.

Institutions may act upon relationships by signaling who should have power. For example, police officers enforce laws and the minister guides his or her flock; citizens and congregation members are expected to submit to the decisions of those in positions of power. In daily life, rarely, if ever, are the bases for these relationships questioned, nor is the substantive content of these interactions subject to significant scrutiny.

A less visible manner in which power operates is the way social structures and conditions organize the types of interactions that occur by determining likely access to, and availability of, certain types of knowledge. Within the classroom, teachers can only transmit knowledge within the constraints of the curriculum and with the resources available within the school system. Unequal access to educational resources is an example of how power, in this case in the form of resources, acts to shape knowledge (Kozol 1991). The way knowledge is transmitted via culturally accepted and widely available sources of information provides another example of how power relationships
are hidden from the view of the knowledge consumer. For example, Herman and Chomsky (1988) explore how the consolidation of media ownership reduces the availability of diverse sources of knowledge and how advertisers can control content by withdrawing financial support.

Examining the media also provides the opportunity to understand how ideology can shape knowledge, and how power and knowledge are linked via ideology. Ideology embodies the relationships among classes that arise from activity related to material production (Marx 1978). According to Marx, class domination begins with the control of material production and the consciousness that is socially produced through these activities. Once political power is obtained, the dominant class has both the material and intellectual force to determine what the ideas of society are, to influence the consciousness of other classes:

The ruling ideas are nothing more than the ideal expression of the dominant material relationships, the dominant material relationships grasped as ideas; hence of the relationships which make the one class the ruling one, therefore, the ideas of its dominance (Marx 1978: 172-173).

The dominant class thus produces and distributes these ideas, and by shaping popular consciousness with its ideology, the dominant economic class is able to maintain its privileged social position. In the case of the media, the few corporations who control media outlets have the power to inject their views into the public by controlling discourse around various issues. Advertisers, because they control the funding of television programming, exercise great power in determining program content.

The media and educational system transmit significant amounts of knowledge
used by people in their everyday affairs. These are commonly accepted sources of information. Other individuals and institutions are responsible for the production of specialized types of knowledge, or more “formal” knowledge. These include, among many others, scientists, scientific communities, and institutions dedicated to the genesis of scientific knowledge such as those that provide the structure (universities) and funding (governmental agencies, private foundations, and corporations) for scientific endeavors. Scientists possess authority over knowledge in domains that goes beyond that encountered by lay persons on a daily basis. Yet together with scientific communities, universities, and funders, they wield significant power over the lives of individuals in the forms of technology, the medical encounter, the food we eat, and many aspects of living that are typically taken-for-granted. Because of the ubiquitous nature of scientific achievement, its complex principles, and its claims of objectivity, it is important to examine its role in defining and providing solutions for salient aspects of human experience.

This dissertation seeks specifically to understand the production of scientific knowledge in the domain of children’s mental health. I first review the traditional, widely accepted view of the nature of science, then review how both internal and external factors shape the practice and outcomes of science, paying particular attention to the role of ideological influences. Dominant interests in the study of mental health may have profound influence over the content of RFAs, and ultimately, the production of science in this realm.
II. What is Science? Internal and External Influences on the Practice of Science

Karl Popper’s ideas about science, and in particular his thoughts on falsifiability and objectivity, have had tremendous influence on its practice. In Popper’s (1959) view, it is not possible to verify scientific theories; instead, scientists can only show theories to be untrue, or falsify them. Because of this, to qualify as scientific, theories must be amenable to falsification through empirical observations, which are the best representation of the “world of our experience” (Popper 1959: 39) because these observations represent experiences that are actually possible and that can be demarcated from the metaphysical. He argues that science must be independent of subjectivity, “…a subjective experience, or feeling of conviction, can never justify a scientific statement” (Popper 1959: 46).

Popper was concerned with defining science by clearly delineating it from non-scientific pursuits. But despite the influence of his ideas on understandings and conceptions of science as a value-free, objective pursuit, science is an activity of human beings located in a specific social and historical context. Thus science is not impervious to, nor separate from, the influences of outside forces, but is at least partially defined by them. While there is a tendency among the public to view scientists as individuals working secluded within a laboratory (Cole & Cole 1973: 1), in fact, science, like all knowledge, is constructed within a social context, including that of the scientific community itself and the larger local and global community. Science is also influenced
by the normative ideas about the nature of science in operation at a particular point in history, and by location and culture. Nevertheless, the claim that science is “objective” holds great power in the framing of problems and solutions to these problems. Because of the authority claimed by and assigned to scientists to answer questions that fall within the scientific realm, and the expertise and resources required to do so, it is quite difficult and expensive to question statements that have been established as scientific facts (Latour 1987).

Within scientific activity itself, certain topics are selected as the focus of study, specific measures and methodological techniques are favored in the collection and analysis of data, meaning is assigned to the results of statistical analyses, and some manuscripts are deemed acceptable for publication at the expense of others. These activities do not occur according to an objective scientific process, rather they are influenced by such factors as the scientist’s life experiences and professional training, and disciplinary power structures (Dannefer 1988), among others. The sociological study of science provides a framework for understanding how both inter- and extra-scientific factors influence the practice of science, including the role of powerful institutions and ideologies in shaping science to achieve their interests. Sociologists of science and other analysts of science recognize the influence of these super-scientific factors on the scientific practice through definitions of science that acknowledge social influences, and explication of factors which directly affect scientific practice. For example, Evelyn Fox Keller defines science as “the name we give to a set of practices and a body of knowledge delineated by a community (Keller 1995: 4)”. In this definition, science is named, which is an activity that falls squarely outside of the scientific realm, and the specific
knowledge accumulated is defined by the community in which it lies.

This process of naming and delineation begins with the education and professional socialization of scientific disciplines through which the beliefs of the particular scientific community are internalized by students of science. Through this professional socialization, students become scientists and the beliefs of their scientific community about science become their own, including what science is, which topics suitably fall within the purview of their science, what questions are appropriate to ask, and what methods they should use to answer those questions (Kuhn 1970). Kuhn refers to these beliefs as scientific paradigms, or models of science “that some particular scientific community acknowledges for a time as supplying the foundation for further practice” (1970: 10).

These paradigms themselves are imperfectly “scientific.” For example, the range of studies that come to be known as science are not objectively determined, and in fact, the aim is not even always to produce new knowledge. Instead, results that do not meet the expectations of researchers are considered failures (Kuhn 1970). The effect of this is that the studies that are published reinforce the current state of science. The quest for statistical significance and publication of research articles based on this criterion contributes to this bias. Interestingly, the predominance of statistical significance testing developed very much as a result of social forces within science, including the currency and power possessed by the academy over non-academic outsiders in matters of interpretation (Ziliak & McCloskey 2008).

Forces outside of science also impinge upon scientific pursuits, making it difficult to separate science from metaphysical non-science or to eliminate subjectivity. Lakatos
Lakatos & Feyerabend (1999) takes on the problem of “demarcation,” determining what constitutes science versus pseudoscience. Examining historical cases where various social influences, including those of the Catholic Church, the state, and professional associations have intervened in the matters of science to condemn theories to which they objected led him to conclude that “…the interpretation of the fact depends on your economic interests and your point of view” (Lakatos & Feyerabend 1999: 37). A commonly cited example of the shaky ground upon which some purported science stands involves the removal of homosexuality as a psychiatric diagnosis from the DSM in 1973. Historical accounts (NPR 2010) demonstrate how this happened not because it was solved definitively as a scientific question, but because of forces internal to the American Psychiatric Association that made the case for the deletion, partly on emotional grounds. Both sides made scientific claims, leading one analyst to conclude that it wasn’t a scientific question at all, but a moral one (NPR 2010). Likewise, Rich (2004) has shown how policy experts and think tanks, which are often explicitly ideologically driven, use research to put forward policy solutions to policymakers. These experts pick and choose their preferred solutions from published scientific research to suit their own interests rather than presenting the full range of options and opinions that exist.

Other potential external influences on science include governmental, political, and business interests. As is the case for knowledge production in general, economics plays a defining role in the practice of science. Governmental entities and corporations influence science through allocation of funding for scientific research, and by emphasizing research that will translate into products that can be brought to the market for profit or services for public benefit. The funding of science has particular import in defining appropriate
problem areas. Allocation of resources to specific topics ensures that these are studied, while topics that are not funded have little chance of becoming part of a research program. Both independent thought and innovation may be compromised in such a system.

So the conduct and conclusions of scientific research can be influenced by outside forces, including obvious interference by social actors and institutions, and the results of scientific research can be selectively utilized to advance specific agendas. Certainly, then, Popper’s ideas regarding the objectivity of science do not hold. In fact, the very idea that science can be objective is called into question. That which is supposedly objective in reality only represents that which human actors can agree upon as real, which gives the impression of objectivity, and reinforces its existence, but on closer consideration is not so. Because these observers also share the same world view, it is likely they may collectively miss something that exists (Berger & Luckmann 1966). Science, like all aspects of social life, includes many taken-for-granted assumptions, objectivity being just one of them. For example, Keller (1995) shows how taken-for-granted ideas about gender, specifically about the relationship between masculinity and objectivity, underlie much scientific work. Yet if this relationship is not explicitly considered, it may be assumed by the audience to be “natural.”

In reality scientists are just like everyone else, dependent on their social context to shape their understandings and experiences. A general discussion of ideology is useful in understanding how the scientific community is influenced by the society in which it operates and has important implications for how science is translated into knowledge that is utilized for policy and decision-making.
III. Ideological Influences on the Practice of Science

While it is not difficult to demonstrate the influence of many social factors on scientific practice, the effects of ideology on science and the way that science reinforces ideologies of medical hegemony over, and personal responsibility for, modern problems faced by individuals can be more challenging to identify and make known. In his conception of “hybrids,” Latour (1993) demonstrates how science, politics, and society are intimately intertwined. Because of this, political and popular ideologies influence science, and the extant practice of science reinforces these ideologies. But in science ideology is not explicit. Rather it is indirect “in the formation and selection of preferred goals, values, methodologies and explanations” (Keller 1995: 137). In other words, the topics that are chosen and the way they are studied communicate the beliefs of those who dominate the scientific field. Further, “data never do speak for themselves” – they are interpreted by human beings with preferences and assumptions about what the answers should be, and rarely do scientists reflect on these assumptions (Keller 1995: 130).

The influence of ideology upon social understandings of problem causation and appropriate alleviation may be more insidious than even that of the media on everyday knowledge. After all, there is widespread recognition that media outlets have the potential for bias (albeit there is disagreement about which direction this takes), but, as discussed above, science is widely accepted as objective. The mantle of objectivity surrounding science is thick – not only is science credited for advances in technology and medicine that have greatly improved standards of living globally, but the scientific method is the
gold standard for the revelation of “facts.” Scientists who question these facts face high costs, in terms of both resources, and professional reputation (Latour 1987). In light of this, questioning the foundation of science itself, including whether it is indeed converged on the appropriate topics and units of analyses, is undoubtedly an uphill endeavor. Yet as Latour (1987: 29) also points out, when facts go unquestioned, the case for their status as truths is reinforced, while inquiry weakens them. So any effort to refocus science in new directions first requires calling attention to potential flaws in current scientific approaches, including how ideologies may operate to restrict important avenues of investigation.

Underlying ideology in the science of medicine are two main themes: 1) the idea that there is a biomedical magic bullet that can be aimed at and destroy all ills, biomania, and 2) the idea that maintains the individual is solely responsible for his or her own health.

Waitzkin’s (1989) discussion of ideology helps frame understanding of how biomania influences the practice of medical science. For example, he describes how Lukacs’ concept of reification,

involves the transformation of social relations into things or thing-like beings that take on their own separate reality in people’s consciousness. Shaped by ideology, consciousness focuses on the concrete problems and objects of everyday life, especially economic commodities, rather than on the totality of social relations that lies behind these routine concerns (Waitzkin 1989: 223).

In the case of health, consciousness becomes focused on individuals’ symptoms and how to treat individuals, such that these become the focus of the encounter, while
social root causes are removed from consideration. “Symptoms, signs, and treatment take on an aura of scientific fact, rather than subjective manifestations of a troubled social reality” (Waitzkin 1989: 224).

Waitzkin also extends the ideas of Habermas surrounding ideology in science to medical science. Habermas argued that science’s claim to be objective is exactly what makes it ideology. Ideology in science reinforces and validates dominant forces by defining problems with technical solutions. Placing social problems within the scientific domain removes them from the critical eye of the public, thus relieving the dominant class (in this case the social structures and social forces responsible for manufacturing illness) from responsibility for the creation of illness. Locating problems in the medical domain also gives tremendous power to physicians and the medical-industrial complex.

Another ideology that draws attention away from social root causes is that of individual responsibility for troubles. This belief runs deep in American culture in many domains, including increasingly in health. It is possible to hypothesize that this may offer a partial explanation for why, even when social causes for problems are identified, solutions often remain individual in focus (Winett 1998): Solutions are constructed within a social system which values individualism. Because of this, researchers might not reflect on individualism in their health research and in their mental health research, and as a result, they may take for granted that the individual is the level at which research should be done. Similarly, if funding for health research is directed at the level of the individual because those responsible for constructing the content of funding mechanisms are also shaped by a society where this is assumed, it is important for us to overtly consider this funding and how it might reinforce the status quo at the expense of real
solutions to health problems.

I now turn to a review of historical understandings of mental health, as well as current medical and psychological models of mental health.
CHAPTER 3: MODELS OF MENTAL HEALTH: HISTORICAL, MEDICAL, AND PSYCHOLOGICAL

I. Historical Perspectives on Mental Health

What we now term problems of mental health has been understood from myriad angles over time. The Biblical suffering of Job was a test of piety allowed by God and performed by Satan. Hippocrates located melancholia in the maldistribution of bodily “humors,” in particular “black bile” (Greenberg 2010: 26). “Madness” has variously been understood as caused by animal spirits, waking dreams, and acid vapors, among other explanations (Foucault 1965). Individuals exhibiting signs of madness have been expelled from society, such as when they were purportedly sent away on “Ships of Fools” during the 15th and 16th centuries, or confined with criminals and indigents during the 17th century, in asylums during the 19th century (Foucault 1965), and in hospitals until the middle of the 20th century. They have been brutally physically punished, plunged in cold water, exposed to unpleasant odors, given blood transfusions, wounded to allow for the escape of toxic vapors, taken horseback riding, fed coffee and quinine, and rubbed with vinegar (Foucault 1965). As recently as the early 1900s, pelvic massage and corn flakes were on the treatment menu at a sanitarium run by the Kelloggs (Greenberg 2010: 90) and in the 1930s schizophrenics were injected with insulin and seizures induced in attempts to cure them (Greenberg 2010). And, of course, the infamous frontal lobotomy will always hold a special place in the history of the treatment of the mentally ill.

It seems clear now that these efforts to understand and treat mental illness were at best misguided, and at worst, torturous. Yet at the time they were considered the moral
(Foucault 1965) and appropriate intervention for the individual and for the protection and comfort of society. The proponents of these explanations surely were as confident as the current medical community that they had found the solution to suffering of a mental nature and its odd behaviors. As these examples illustrate, with few exceptions, through time, mental anguish and non-normative behavior have been located within the individual. They also have been considered treatable by experts. Psychiatrists, neurologists, psychoanalysts, social workers, physicians, and clergy have all claimed special powers to cure these problems. Each of these groups has benefited financially from these efforts and by being awarded power over a marginalized group.

Historical conceptualizations of mental health also have varied across cultures. Fugue states and “running amok” experienced in Europe and Asia have not been observed in the United States. But new evidence suggests that America is exporting definitions of mental illness and symptoms in the same way that the American lifestyle has been globalized (Watters 2010), providing evidence that the nature of mental illness remains poorly understood even using purportedly modern explanations. I will now turn to a description of the medical and psychological models which currently dominate understandings and treatment of mental health problems.

II. The Medical Model of Mental Health

The medical model of mental health views the troublesome feelings and behaviors of the mentally ill as resulting from disease of the brain. In recent years, a “biological revolution” has taken place in psychiatry with an increased focus on genes and
pharmaceuticals in attempts to explain and cure mental health problems (Schwartz 1999: 79). The goal of the medical model is to define the underlying biological processes that work to create mental illness, and typically focuses on neuroanatomy, neurochemistry, and genetics as the offenders (Schwartz 1999). Solutions for mental health under the medical model focus almost exclusively on pharmacotherapy.

Efforts to identify biological underpinnings of mental illness have been largely unsuccessful to date. In terms of brain structure, to date, no definitive replicable brain abnormalities have been found for the two most researched disorders, schizophrenia and depression (Schwartz 1999; Schwartz & Corcoran 2010). On average, brains of schizophrenics exhibit small structural differences from those of individuals without schizophrenia, but while brain lesions have been linked to schizophrenia in some patients, other patients show no anomalies at all (Schwartz & Corcoran 2010). Neurochemical models have received some credibility in the alleviation of several symptoms with a combination of medications; however the actual chemical processes of mental illness have not been explicated (Schwartz 1999). Moreover, it is still unclear whether the neurotransmitter excesses and deficiencies noted in cases of depression cause the depressive symptoms, or vice versa (Schwartz & Corcoran 2010). For findings where neuroanatomical and neurochemical anomalies have been detected, it is important to consider that the presence of physiological correlates does not signal physiological causation (Cockerham 2006). Instead, it appears that problems that arise in the social environment often play a role in altering physiology – social factors trigger the process that has as its outcome mental disorders. For example, studies of brain structure in adults with PTSD have revealed hippocampal changes, and corpus callosum changes have been
reported in children with PTSD or maltreatment history (Stover, Berkowitz, Marans & Kaufman 2007). These changes can be linked to circumstances which arise in the environment – a traumatic event or series of events.

While evidence exists for a role for genetics in the expression of mental disorders, how these mental health genes are transmitted is still unknown, and the identification of specific genes responsible remains an elusive task, with many promising studies resulting in disappointment when replication could not be achieved (Schwartz & Corcoran 2010). There are two genes that have been implicated for schizophrenia, neuregulin-1 and dysbindin, but methodological problems have yet to be fully overcome, precluding definitive attribution to these genes at this time (Schwartz & Corcoran 2010). Genes don’t act alone in the creation of mental illness; instead there is a complicated interplay of genetic and environmental factors. So despite the ubiquitous nature of biologic claims on mental illness, neuroanatomical, neurochemical, and genetic underpinnings have yet to be verified and replicated (Schwartz 1999; Schwartz & Corcoran 2010) and these explanations ignore the important role of the social world in the creation of mental health problems.

Biomania, the belief that we will find a biological or genetic component to just about everything if we dig deep enough, exists in public perception despite published research in these domains that explicitly admits that these explanations are never complete (Wheaton 2001). Even the scientific community’s acclaimed randomized, controlled trials seem to overstate the importance of pharmacological treatments (Greenberg 2010). It is well known among the academic community that studies with positive results, that is, studies that show statistically significant differences favoring
treatment over control groups, are more likely to be published in scientific journals than those that show no significant difference. This practice biases the information available to evaluate the effectiveness of psychopharmacological interventions. Interpretations of the results of published research may also overstate the effectiveness of these medications for many people diagnosed with mental illness. For example, Fournier et al. (2010) found that while antidepressants had a substantial effect for severe depression, little difference was found between antidepressants and placebo for mild to moderate depression.

Greenberg (2010: 204) reports the results of a study on antidepressants that found that placebo effects account for 80% of the overall effect. This evidence suggests that the reliance on pharmacological interventions, at least for depression, especially mild to moderate depression, is built on shaky ground.

Much of this biomania in mental health can be linked to the processes of medicalization and biomedicalization. Medicalization is the “process by which nonmedical problems become defined and treated as medical problems, usually in terms of illnesses or disorders” (Conrad 1992: 209). Medicalization includes using medical definitions of the problem, medical language, medical models of understanding, and medical intercessions as solutions (Conrad 1992: 211). Biomedicalization (Clarke et al. 2003) is an extension of medicalization to the internal body, made possible by rapid technological and scientific advances. In biomedicalization, illness, disease, and health are subsumed under the medical model. During the process of biomedicalization, health also becomes a moral obligation of individuals due to the abundance of information available about health risks, as well as an increasing ability to monitor and prevent threats to one’s own health. So not only is it the responsibility of the individual to address
disease with medical intervention, but also to use biomedicine to maintain a state of constant well-being or risk being characterized as lazy, careless, or even reckless, and a burden on society.

Conrad (1992: 213-214) discusses secularization and “medical imperialism” as causes of medicalization; interest groups also play an important role. For example, the National Alliance for the Mentally Ill (NAMI) defines mental illnesses as “biologically based brain disorders” (NAMI 2008). Both interest groups and medical industries stand to gain from medical definitions of the problem in question, albeit in very different ways. Interest groups fight for medical definitions of social problems to bring attention to their issues for the purpose of obtaining solutions, and to reduce stigma: The NAMI website states “Stigma erodes confidence that mental disorders are real, treatable health conditions” (NAMI 2008). In contrast, industries, including pharmaceutical companies and producers of medical technology and information, have a clear financial interest. Perhaps that is why the author of a reaction to the Fournier study, the director of a psychopharmacology clinic, tries to explain away the unfavorable results for antidepressants based on the fact that they excluded studies that corrected for the placebo effect (Friedman 2010).

III. Psychological Models of Mental Health

Psychological approaches to mental illness also follow an inner pathology model. Psychological approaches to treatment generally rely on individual therapy, but also embrace the use of medication, or some combination of therapy and pharmacological
intervention. According to Peterson (1999), several major theories of psychopathology are predominant. Psychodynamic theories, including Freud’s psychoanalytic theory focus on internal energy from innate drives. In this model, experiences from childhood, including repressed emotions (Horwitz 2003), can cause these drives to go awry. When individuals use too much of their energy on “defense mechanisms” or don’t focus enough of their energy on defense, problems arise (Peterson 1999). Self-regulation would thus be an important target of psychotherapy – while childhood experiences may be at fault, the problem arises due to drives within the individual, and it is up to the individual to get these under control through therapeutic work. Humanistic-existential-phenomenological models focus on needs and experiences as central to meaning in life – pathology arises from the frustration of these needs. In this model, the focus in therapy would be finding ways to overcome or deal with the frustrations, not addressing the injustices which lead to their existence. Family systems theories center around homeostasis in the family. Conflicts in one area of family will lead to other changes to restore it (Peterson 1999). Sociological theories also include theories related to the family and are discussed further in Chapter 4.

Cognitive-behavioral theories inform the dominant model of psychological practice today (Greenberg 2010). These models stress the importance of learning, conditioning, and modeling, including the meaning of learned thoughts and behaviors (Petersen 1999) to individual functioning. Cognitive-behavioral therapies focus on retraining the individual to learn new thoughts, which should then translate into new behaviors. While troublesome thoughts and behaviors are seen as arising from social interactions, the effort in therapy is to change the individual’s reaction to them, not on
improving the social environment. The onus of responsibility is thus placed on individuals for their role in the solution of their own unhappiness. This focus on individuals as solely to blame for their health can be seen as a reflection of a larger ideology of individualism in American society. A majority of Americans embrace the belief that they and other Americans are in control of their lives. “Opportunity for economic advancement is plentiful in America; it follows that individuals bear personal responsibility for their own economic fate” (Mirowsky, Ross & Van Willigen 1996: 323).

It is clear that many Americans also believe that they and their fellow citizens bear responsibility for the fate of their health. Because there is a belief that medicine and behavioral change can solve your ills, including your mental ills, continued distress can be viewed as a failure on the part of the sufferer to seek help, or to follow the professional advice that is rendered.

Another recent branch of psychology, positive psychology, is concerned not with pathology, but with “building positive qualities” (Seligman & Csikszentmihalyi 2000: 5). Positive psychology founder Martin Seligman describes how, after a discussion with his 5-year-old daughter in which she explained that if she could quit whining, he could cease being a grouch, he came to realize he needed to change his grumpy ways, as well as those of psychology. His goal, through positive psychology, is to nurture positive qualities, which include, in individuals, “positive individual traits: the capacity for love and vocation, courage, interpersonal skill, aesthetic sensibility, perseverance, forgiveness, originality, future mindedness, spirituality, high talent, and wisdom” (2000: 5). On face value, the aim of positive psychology is worthy – developing well-being in all rather than continued focus on disease. But one area of inquiry within positive psychology is
optimism, which stresses the importance of thinking positively despite difficult circumstances, pain, and suffering. An imperative to think positively in the face of disease has the potential to create additional distress in patients who are implored to think positively or risk negative outcomes (Ehrenreich 2009), which further blames individuals for circumstances over which their control is limited.

Health experts play a role in perpetuating the idea that individuals are the appropriate locus of health intervention and are often seen in the media discussing the nature of health problems, stressing the importance of “living a healthy lifestyle” and avoiding noxious situations and environments. Seldom do these experts acknowledge that for some people, this is simply not possible. Instead, this emphasis on individual behaviors is viewed as part of the problem for rising healthcare costs and has translated into an emphasis on “health promotion” as a public health policy. Health promotion, which arises from the cognitive-behavioral psychology tradition, emphasizes changing health behaviors, or unhealthy habits of individuals which contribute to their poor health, including smoking, consuming excessive amounts of alcohol, using illegal substances, eating unhealthy foods, not exercising enough, not seeing a doctor when ill, not sleeping enough, and not coping well with stress. Health promotion is predominantly guided by the “stages of change” model and is typically aimed at individuals who are already engaged in “problem” behaviors (Bunton, Baldwin, Flynn & Whitelaw 2000). The model is intended to determine the readiness of individuals for intervention and to match specific interventions to the particular stage they are deemed to inhabit. Yet rather than determining predictors of stage location, the model focuses on individuals’ “inner” states, and if you are not “ready,” you don’t get help. Using the model in intervention does
nothing to address why an individual would have commenced this “problem” behavior to begin with, nor why some might be ready to change while others are not (Bunton, Baldwin, Flynn & Whitelaw 2000). These models follow an “ideology of choice,” implying that unhealthy behaviors are both conscious and intentional (Lowenberg 1995: 320). In this model, social and structural causes of unhealthy behaviors are ignored, reducing the problem to the individual, blaming the person for his or her situation, and contributing to social stigmatization.

Critical psychology arose in Europe as a response to the “bourgeois” nature of these mainstream psychological approaches, which paid little attention to the role of the social and cultural in shaping both illness experiences and diagnostic processes (Tolman & Maiers 1991). Critical psychologists were concerned with how the practice of psychology served dominant societal forces and was not really in the interest of ordinary people. In the case of the West, mainstream psychology served the interests and power of capital at the expense of working people. Rejecting the idea that the science of psychology is value-free, critical psychology explicitly sides with individuals and calls for a recognition of social and historical context in psychological methodology (Tolman & Maiers 1991). From a critical psychology perspective, all of the four dominant psychological perspectives on mental health etiology can be criticized for their failure to challenge the status quo and failure to address how social arrangements affect individuals’ well-being.

Like pharmacological interventions, therapeutic interventions owe credit for their success to the placebo effect and to factors that are common across all types of therapy, not the cognitive model particularly (Greenberg 2010). And despite the popularity of
cognitive-behavioral models, attempts to implement broad-based behavioral interventions have not been successful, which has been attributed to lack of understanding of, and attention to, the gradient in health that exists along socioeconomic lines, and which can only be addressed by taking aim at distal social forces (Glass & McAtee 2006). The focus on individual risk factor epidemiology in health research (Pescosolido, McLeod & Alegría 2000) based on medical and psychological models shrouds these social forces from critical consideration.
CHAPTER 4: SOCIAL MODELS OF MENTAL HEALTH

I. Social Factors and Health

Sociological models of health focus on factors external to the individual as explanations for illness, as opposed to solely internal features as in the medical and psychological models. Durkheim (1951) was the first to study the effects of social factors on health. In his study of suicide first published in 1897, Durkheim demonstrated how social integration in religious, domestic, and political spheres of society affects suicide rates. Durkheim proposed that suicide results from social processes, including the lack of integration of the individual into society. As evidence, Durkheim notes that rates of suicide are higher among Protestants, who embrace a highly individualistic ideology, than among Catholics, who are highly integrated as a community. He also provided evidence that married persons are less likely to commit suicide and that during a national crisis, suicide rates decline presumably due to heightened collective goals.

Since Durkheim, social explanations for health have been further elaborated, and the medical model has been subjected to much critique for its exclusive focus on biological determinants and solutions for health. Not only do social relationships, or lack thereof, affect health, but an array of factors occurring within the context lived and experienced by individuals in their daily lives, as well as larger social structures which condition these experiences through stratified exposure to risk, are implicated in health outcomes. And these factors are amenable to intervention, as demonstrated by huge strides made in public health over the past 150 years. A major development in
recognizing the role of social factors in health came with McKeown, Record, and Turner’s (1975: 391) study of the decline of mortality during the second half of the 19th century. The authors found that the decline in mortality was due not to therapeutic developments targeted at the individual level, but to universally rising standards of living, in particular a more nutritious diet and improvements in hygiene and sanitation. The contribution of immunization was limited to the smallpox vaccine, which was responsible for only about 1/20 of the observed reduction in deaths.

Since then, the link between social factors and health has been well established, including for SES (Mirowsky, Ross & Reynolds 2000; Robert & House 2000); gender (Rieker & Bird 2000); race/ethnicity (Smaje 2000); political power (LaVeist 1992); and social relationships (House, Landis & Umberson 1988), which are stratified by gender, SES, and age (Turner & Marino 1994). Particularly compelling is Marmot’s (2004) recent work demonstrating the relationship between health and relative position in society: For almost every health outcome, a social gradient emerges, and this gradient cannot be explained by the usual suspects – individual risk factors and genetics. In the case of heart disease, less than one-third of the social gradient in deaths can be explained by adjusting for individual risk factors (Marmot 2004: 44). Using height as an indicator of “biological fitness,” Marmot further demonstrates that differences in individual genetics can’t explain inequalities in health-related characteristics. For example, there has been a 4- to 5- inch growth in average height over the past 150 years: In black men the average height increased by approximately 3 and a half inches, while the average height of white men increased by about 1 and a half, so that average heights are now about the same for both races. Obviously, genes don’t evolve quickly enough to account for this
change, underscoring the importance of social factors such as nutrition in this development. While genetics may largely explain differences among individuals in the same environment, differences between groups are strongly related to environmental factors (Marmot 2004: 49-52).

Marmot further points out that focusing on individual risk factors as the driving force behind health outcomes reinforces and may even increase inequalities in health. Intervening to minimize risk factors at the individual level may result in decreased risk for some people. However, some individuals will be helped more than others, with those who are already primed for the interventions benefiting disproportionately. This unintended consequence, increased inequality, produced by concentrating on individual risk factors to the exclusion of social ones, highlights the importance of concerted reflection on both the causes and solutions for health outcomes to avoid this and other undesirable outcomes. Marmot’s findings point to control and participation in society as mediating factors in the health gradient: Stratified social arrangements which deny those at the bottom of the distribution control over their lives and integration into social institutions lead to chronic distress and ill health. In other words, social factors are *causative* in their effects on health.

In studies of mental health, social causation is also found in the case of almost every problem studied. Evidence for the relationship between social factors and child mental health are presented below, following a discussion of sociological theories that attempt to explain the mechanisms producing this connection.
II. Sociological Theories Relevant to Mental Health

Multiple theories in the study of mental health have arisen out of the sociological tradition. Stress, social psychological, structural strain, symbolic interaction, including labeling and family, social response, and social construction theories are among the most commonly studied.

Stress theory is based on the idea that factors in the environment (stressors) can pose threats or excessive demands, or constrain individuals in ways that may negatively affect functioning and well-being (Wheaton 1999: 281). Initially, life events, such as the death of a loved one or a significant trauma, were the focus of stress-related research; however chronic strains and daily hassles are now recognized as important factors in the creation of psychological distress. The stress model attempts to quantify these stressors and determine their relationships with various outcomes while considering the effect of various stress buffers on magnifying or diminishing their effects. Coping resources, including social networks and support and financial resources, are some of the factors considered relevant as mediators or moderators of stress. Social psychological models stress the importance of self esteem and self-evaluations, perceptions of control and mastery, affective orientation, and coping strategies as influences on mental health outcomes.

Some variations on the stress model emphasize the interaction of biological systems and social experience. Perry and Szalavitz (2006: 21-22) describe the physical impact of early trauma and abuse on the brain, in which all four primary areas of the brain can be affected due to an impaired stress response produced by the traumatic event.
The brain stem, which regulates sleep and attention; the diencephalon which controls emotional responses guiding behavior and fear; the limbic system partially responsible for social and relational behavior; and the cortex which guides language, speech, abstract thinking, planning, and decision-making, as well as social and relational behavior, all exhibit dysfunction. Essentially these disturbances result in a persistent stress response, with behaviors interpreted as mental health troubles. Despite these brain changes that arise with trauma, the authors’ work with children who have experienced the most gruesome situations of abuse lead the authors to stress the importance of social relations in both prevention and recovery from this trauma – “what works best is anything that increases the quality and number of relationships in the child’s life” (Perry & Szalavitz 2006: 80). New lines of inquiry by sociologists also extend the stress model to gene-environment interaction, including the study of how environmental stressors can activate or serve as buffers against genetic vulnerabilities (Shanahan, Erickson, Vaisey & Smolen 2008).

In the stress paradigm, some controversy exists regarding appropriate study designs, with critics claiming that medical and sociological models can sometimes become blurred. Anshensel, Rutter, and Lachenbrush (1991: 166) point out that sociological models focus on the mental health effects of social organization while sociomedical models are concerned with social precursors of specific mental disorders. The difference in the two is that the sociological model examines the non-specific effects of stress while the sociomedical model examines only the outcomes of stress for the disorder under study. The sociomedical model is thus inadequate for examining effects of social arrangements on health – it leaves out all people who are adversely affected by
stressors broadly because it typically focuses only on the disease-specific outcome (Aneshensel, Rutter & Lachenbrush 1991).

Sociological models of health also vary in their focus. Aneshensel (2005) further elaborates her position on differences in sociological models of mental health by comparing the social etiology model (similar to the sociomedical model criticized in her earlier work) and the social consequences model. She argues that the social etiology model is insufficient because it relies on a single-disorder, diagnostic approach. Individuals are studied because they have a specific diagnosis, which ignores the many ways in which social arrangements can affect mental well-being. Additionally, variables reflecting social arrangements often serve as control variables, and mental health problems are considered to be “abnormal” reactions, which constitutes a “pathological orientation” and leads to the “individualization of risk” (Aneshensel 2005: 224). Critics of the stress model in general question whether it is correctly classified as a sociological model because it does not typically consider social structural factors as independent variables. Additionally, it does not explicitly consider that many of the psychological factors that serve as buffers of stress are distributed across social strata. Aneshensel (2005) advocates instead for a social consequences model, where mental health outcomes are considered broadly, where social arrangements are considered independent variables, and where it is recognized that current social arrangements produce unequal results for different groups.

Structural strain theory, another sociological model of mental health, is closely related to Aneshensel’s social consequences model. In this model, mental distress originates in the way a society is organized, with some groups having relative positions
of advantage or disadvantage. This model attends to the idea that risks are structured based on one’s social position, such as in Marmot’s work discussed above, and is particularly relevant to the differential sorting imposed by economic structures, which is felt as chronic strain to those in the lower strata, leading to differential rates of mental health problems (Thoits 1999). Link and Phelan’s (1995) theory of fundamental social causes is central to understanding how SES as a macro-level force affects the lives of individuals differentially. The theory of fundamental causes underscores the importance of SES and its embodiment of resources that can be dynamically engaged to avoid risk factors for various illnesses. Social capital or “social networks and the norms of reciprocity and trustworthiness that arise from them” (Putnam 2000: 19) is one of these resources. In fact, for children, social capital is one of the two factors (the other being poverty) responsible for the most significant effects on well-being across a range of domains (Putnam 2000).

Other sociological theories of mental health focus on the creation of mental illness through interactions, and how different groups and cultures define what is and what is not mental illness. Within the symbolic interaction tradition, labeling theory posits that primary deviance is not the problem in mental illness. Rather the problem is secondary deviance, or the internalization of the diagnosis, which leads to differential treatment and likely a deviant career (Thoits 1999). In the case of mental health, having behaviors labeled as deviant, and being labeled with a psychiatric diagnosis, could lead to an “illness career.” Labeling theory is exemplified in the classic study by Rosenhan (1973) where several “sane” individuals feigned psychiatric symptoms to gain admission to psychiatric hospitals. Upon admission, they ceased displaying the symptoms but could
not shake their diagnosis. Their behaviors became viewed as psychiatric symptoms even when they were quite normative; such benign tasks as note-taking were viewed as obsessive behaviors. The “pseudo-patients” were never detected by hospital personnel. In real life, it is not difficult to envision how assignment of a diagnosis of a mental disorder could result in being treated differently by others, eventual internalization of the label, and acting accordingly. Schoolchildren may be especially vulnerable to this labeling, as evidenced by the rising tide of diagnoses of Attention Deficit Hyperactivity Disorder (ADHD). While a diagnosis may help the child and his or her family access needed resources, it may also color the way parents and teachers interact with him or her and lead the child to believe that this is the expected behavior.

Family theories of mental illness can also fall under symbolic interaction models when problems arise due to consistent patterns of interaction and socialization to norms and roles. Family theories may also be informed by exchange, systems, ecological, and conflict theories (Klein & White 1996).

Other sociological theories are relevant to mental health, but do not attempt to explain how social factors might translate into symptoms. For example, social response theories focus on how social factors influence response to mental symptoms such as when education or gender color attributions about problematic behaviors and help-seeking for troubling symptoms (Horwitz & Scheid 1999). Social construction theory states that mental health is the product of cultural definitions, which provides an explanation for the symptoms and diagnoses which vary across cultures and across time.
III. The Evidence for Social Causation of Children’s Mental Health Problems

Given the dominance of medical and psychological models of mental health, it is necessary to clarify the importance of explicitly considering the role of the environment and other social factors in the genesis of these problems. It has already been demonstrated that social experiences such as trauma can become embodied in brain structure and function (e.g., Perry & Szalavitz 2006). Even more compelling is Jencks’ (1980: 726) argument concerning the gene-environment connection: While the contribution of genetic factors to individual behavior can theoretically be calculated, because genes affect the social environment, *there is no upper limit on the explanatory power of non-genetic variation in human behavior.*

Jencks explains how genetic characteristics influence how one is treated based on societal expectations and socially desirable characteristics. Males and females are treated differently, as are individuals who meet, or fail to meet, societal definitions of physical attractiveness. In these cases, genetic traits influence everyday social interactions, favoring those with some characteristics over others. Additionally, the fact that genes manifest their effects through the environment has profound implications for social intervention: Changing the environment can change genetic expression. Phenylketonuria, (PKU), a genetic disease, can be eliminated by changing one aspect of the environment – diet – thereby eliminating genetic inequality (Jencks 1980).

A wide range of studies focusing on various factors have demonstrated a relationship between social conditions and child mental health that extends well beyond individual genetic, biological, and chemical make-up. These studies consistently show
that child mental health is firmly embedded in social-structural arrangements and within the contexts in which children live their lives. Research is accumulating that socioeconomic status, neighborhood factors, schools, family context, and traumatic experiences all play a role in the making of children’s mental health problems. Additionally, age, race/ethnicity, and gender, are significantly related to child mental health; while these three factors are measured at the individual level, they reflect social arrangements. Variations in mental health by age, race/ethnicity, and gender reveal trends that cannot be explained by developmental, genetic, or hormonal differences alone.

A. Socioeconomic Status

Effects of socioeconomic status on child mental health can be studied using the stress paradigm and structural strain models. Direct effects of socioeconomic status (SES) on children’s mental health support the theory of fundamental social causes (Link & Phelan 1995). Additionally, SES indirectly influences children’s mental health through other contexts of their lives. Research repeatedly demonstrates that poor children have more internalizing mental health problems, more externalizing mental health problems (Duncan, Brooks-Gunn & Klebanov 1994; Strohschein 2005; McLeod & Shanahan 1993; Wickrama & Bryant 2003), and are more likely to have severe emotional disturbances (the presence of a DSM diagnosable disorder and significant functional impairment), than children who are not poor (Costello et al. 1998). A study of the public health impact of low SES found that low income and parent education together were associated with one-third of the cases of adolescent depression in a nationally representative sample; one-third
of the cases of depression would be prevented if the SES risk factor were eliminated (Goodman, Slap & Huang 2003).

Additionally, children’s mental health is affected by past poverty as well as the length of time they spend in poverty, underscoring the importance of poverty history and persistence in conjunction with current poverty status. For example, Duncan, Brooks-Gunn, and Klebanov (1994) found that among children who were poor at 12 months of age, children who were persistently poor at age 5 had significantly higher internalizing and externalizing behavior problems scores than children who were transiently poor during that time. Both McLeod and Shanahan (1996) and Strohschein (2005) found that children from low SES homes start out with higher levels of depression and antisocial behavior than those from higher SES homes, and that for children whose families stay in poverty, antisocial behaviors increase at an accelerated rate. Their findings on depression differed, however, with one study finding that the slope for depression doesn’t change based on subsequent poverty. Instead, there are steadily increasing parallel lines for poor and non-poor children, indicating that early persistent poverty is associated with depression but later changes in poverty status aren’t as influential (McLeod & Shanahan 1996). By contrast, Strohschein (2005) found that differences in depression between high and low SES decrease as children age (the trajectories converge).

In other studies, mental health problems show sensitivity to changes in family income over time. One study found that conduct disorder and oppositional defiant disorder were responsive to moving out of poverty, while anxiety and depression were not affected (Costello, Compton, Keeler & Angold 2003), another found that for children whose families experience increases in income, depression and antisocial behavior levels
drop, while children whose families experience decreases in incomes experience a rise in both (Strohschein 2005). Variations in types of mental health problems experienced by children of low SES point to a need to further elaborate upon the social consequences model to gain a better understanding of the breadth of the effect poverty can have on various child outcomes.

Economic factors can also have an indirect effect on children’s mental health. For example, a recent study reported in *TIME magazine* showed an association between macro-level economic conditions present during the recent recession and an increase in rates of shaken-baby syndrome. Shaken-baby syndrome has been previously linked to parental stress and can lead to behavioral disorders, among other problems (Park 2010). In addition to increasing the risk for child abuse, a well-known precursor to child mental health problems, socioeconomic factors also influence child mental health indirectly through neighborhood, family, and school variables.

**B. Neighborhood**

The effects of neighborhoods on children’s mental health are receiving increasing attention. Six frameworks for understanding neighborhood effects on children’s outcomes were proposed by Jencks and Mayer (1990:113-117): (1) the contagion or epidemic model, including association with deviant or positive peers; (2) collective socialization, including role models or lack of role models within the community; (3) institutional models, or the influence of adults such as teachers and policy officers who are typically from outside the community but are part of institutions within the community; (4) relative
deprivation, or comparisons with others, as the driving force for behaviors; (5) cultural conflict, or the creation of cultures that normalize behaviors considered deviant by the mainstream; and (6) competition for scarce resources. Whether through community deprivation in economic or social capital, all of these frameworks underscore the power of context and relationships, including those beyond the family, in shaping the lives of children.

Children in low-income neighborhoods have been found to be more depressed (Wight, Aneshensel, Botticello & Sepúlveda 2005), and to have more internalizing mental health problems than children from higher SES neighborhoods, even after accounting for other child and familial characteristics (Xue, Leventhal, Brooks-Gunn & Earls 2005). Contextual-level effects of SES may operate directly or indirectly on adolescent mental health. For example, low SES youth have been found to perceive their neighborhood as more dangerous, and this perception was associated with multiple mental health symptoms, including higher levels of depression, anxiety, oppositional defiant disorder, and conduct disorder (Aneshensel & Sucoff 1996). Additionally, Wickrama and Bryant (2003) found that structural factors in the community (ethnic heterogeneity and formal social integration) were directly related to adolescent depressive symptoms, and community resources indirectly affected adolescent depression through family resources. Caspi, Taylor, Moffitt, and Plomin (2000), using a twin study, demonstrated that neighborhood effects on child mental health are independent of genetic effects.

A review of studies of neighborhood effects on child mental health by Leventhal and Brooks-Gunn (2000: 325) found that neighborhood SES is positively related to
internalizing and externalizing problems, usually accounting for about 5% of mental health outcomes. However, family-level factors are also very important as pathways to mental health outcomes. Burton and Jarrett (2000) further stress the importance of considering family in studies of neighborhood effects, and the importance of considering dynamic factors such as residential mobility, extended kin, and family protection. Further, perceived social support from family, as well as from friends and other adults, has been found to moderate the influence of contextual SES on internalizing and externalizing problems particularly for those in higher SES (Wight, Botticello & Aneshensel 2006).

C. Family Context

Research on family impact on child mental health and outcomes in general is typically focused on family structure, family functioning or processes, and family resources (Uhlenberg & Mueller 2003). Additionally, parent level factors include: “parental role commitment, generational role boundaries, parenting styles, resource-seeking behaviors, advocacy efforts, child-monitoring strategies, in-home learning strategies, and normative value orientations concerning education, social mobility and humanistic value” (Burton & Jarrett 2000: 1124).

Family structure includes factors such as whether there are two parents, whether stepparents are involved, being parented by a single parent, and number of siblings. Living in a single-parent household often results in reduced income, and may also mean less access to social capital, particularly when the father is absent, which in turn can
affect child mental health. However, residing in a two-parent home with significant parental conflict is also problematic. Morrisson and Coiro (1999) found that no matter what the level of conflict present in the marriage, parental separation and divorce are related to increased levels of behavior problems, but for intact marriages with high conflict that remained intact, children’s behavior problems increased even more. Videon (2002) found differences in how children respond to divorce based on ethnicity, gender, and relationship with their opposite-sex parent. Boys’ depression was not affected by parental separation, but was affected by the quality of their relationship with their mother, with better quality relationships being related to less depression. Boys’ relationships with their fathers were not related to subsequent depression. For girls, the opposite was true: Their relationship with their fathers, but not their mothers, predicted depression.

Family functioning and processes include parental supervision, parent stress and parenting practices, all of which may be influenced by family resources, including economic assets and available time. Hill and Bush (2001) found that parenting style, parenting efficacy, and family interactions were related to child anxiety and conduct problems; however the patterns differed between European Americans and African Americans. While family structure and processes play a role in the mental health outcomes of children, it is important to consider that families are located within social contexts as well, and factors such as single-parent families, parenting practices, and parenting-related stress are socially distributed. Additionally, family effects on child mental health are intertwined with school and neighborhood factors, among others, and research on the effects of each factor requires attention to all three to adequately describe the pathways by which child mental health is affected. For example, Cook, Herman,
Phillips, and Settersten (2002) examined the contextual effects of neighborhood, school, family, and friendship group and found that the contexts together had a large effect on adolescent outcomes across a range of variables, but that individual contexts tended to exert an influence over domains differently. For example, family was most relevant to mental health, while peers influenced negative social behavior. However, their findings did not hold for Asian students, further demonstrating the need to consider cultural variations in child mental health.

**D. Abuse and Victimization**

The relationship between childhood abuse and later mental health difficulties is well established in the literature. Victimization in many forms, including physical (Springer, Sheridan, Kuo & Carnes 2007), sexual (e.g., Molnar, Buka & Kessler 2001; Spataro et al. 2004), and emotional (Edwards, Holden, Felitti & Anda 2003) abuse has been linked to mental health problems across the life course. Further, evidence exists that the effects of victimization cumulate: Mental health outcomes worsen as more types of abuse are experienced (Edwards, Holden, Felitti & Anda 2003). Several studies (Turner, Finkelhor & Ormrod 2006; Springer, Sheridan, Kuo & Carnes 2007; Molnar, Buka & Kessler 2001) have found the relationship between child abuse and subsequent poor mental health exists even after controlling for other childhood adversities, while others (Horwitz et al. 2001), have found little direct effect of victimization on mental health outcomes when other stressful life events are controlled, leading them to conclude that children who are abused suffer from a “matrix of disadvantage” (2001: 195) that includes
poverty. Turner, Finkelhor, and Ormrod (2006) found that racial and ethnic minorities, children in low SES families, and children living with one parent or in stepfamilies experienced more victimization, and that each of these factors and victimization individually affected mental health. It seems that structural arrangements and social contexts put children at risk for victimization, which both directly, and indirectly through victimization, lead to mental health problems.

**E. School**

Various school factors are beginning to receive attention as potential contributors to child mental health. For example, Parcel and Dufur (2001) examined family and school capital for child mental health and found that while family influence exceeded that of school, both are important, leading them to conclude that interactions between the two must be considered to understand how each affects child outcomes. In some cases advantages in one can compensate for disadvantages in the other, while sometimes resources (or lack of) in one area boost the effects of resources (or lack of) in the other. Similarly, Goodman, Huang, Wade, and Kahn (2003) found that household income and average school income were significantly related to depressive symptoms after controlling for other individual and school factors. Additionally, children who reside in low-income households who attend low-income schools experience depressive symptoms at approximately two times the rate of those who attend schools with higher income, indicating that school-level income can be protective for children from low-income households.
School environment is also gaining recognition as an important factor in child mental health. A recent study of a large metropolitan school district found that, in addition to socioeconomic, neighborhood, and family factors, punitive and inconsistent school disciplinary practices, lack of supervision and positive role models in the schools, school safety concerns, lack of supportive teachers, and insufficient mental health resources placed students at risk for emotional and behavioral disorders (American Institutes for Research 2008: 13-18).

F. Age, Race, and Gender

Developmental theories posit increases in specific mental health problems that occur as a normal part of the adolescent experience due to taking on new independence or to hormonal change. Much research focuses on the difference in rates of depression being higher for girls (Cryanoski, Frank, Young & Shear 2000; Nolen-Hoeksema & Girgus 1994) and externalizing problems being higher for boys. Age trends in symptoms are also frequently cited. For example, prior to age 11, girls and boys have similar rates of depression, but between ages 11 and 13 girls experience a rapid increase and by age 15, are two times as likely to have experienced depression (Cryanoski, Frank, Young & Shear 2000; Nolen-Hoeksema & Girgus 1994). Research has also focused on determining the reasons for these differences, including self-salience messages contributing to greater externalizing symptoms in boys and internalizing symptoms in girls (Rosenfield, Lennon & White 2005).

But adolescence is not experienced universally by males and females, or by race
and ethnicity. McLeod and Owens (2004) found that early poverty history was associated with higher depression for boys but not for girls and symptoms of hyperactivity increased with subsequent poverty for boys but not girls. While overall, girls had higher depression and lower hyperactivity, black girls had lower levels of depression than black boys, and Hispanic girls had higher levels of hyperactivity than Hispanic boys at ages 10 to 11. Additionally, over time, white girls’ depression increased compared to white boys, but the same was not true for Hispanics.

IV. Conclusion

Despite growing recognition of mental health as a problem that affects the lives of children and the knowledge that social factors contribute to child mental health, individual children are often defined as the locus of the problem for the purpose of treatment, and in much research serve as the level of analysis. Given that children are politically, socially, and culturally disempowered, and as such do not have the power to act on their social situation, placing them at the center of service intervention efforts is in effect blaming them for their situation, while failing as a society to provide the social circumstances that would have prevented their problems in the first place.

The literature on mental health intervention is sparse in terms of recommendations based on social causation, primarily centering on the psychological and biological, but not on larger social forces that create the context to begin with, or institutional-level forces and microsocial interactions which have been shown to influence mental health. Research and services for children’s mental health suffer not
only from the problem of microfication (Hagestad & Dannefer 2001), but from neglect of the social in general.

While it would be foolish to fall into the “Luddite trap” (Farmer 1999: 14) and not treat individual children for the suffering they are facing in light of their mental health problems, treating the individual is both insufficient and short-sighted. Failure to address the social causes of mental health problems results in never halting the downstream flow of individuals into mental illness. In the words of Paul Farmer (2008) who was describing the injustice of treating individuals for HIV/AIDS but not helping them access adequate nutrition, treating individual children for mental health problems, then sending them back to the same family, same community, and same opportunity structures is also akin “to washing your hands then drying them in the dirt.”

In the following chapters I examine a possible explanation for this phenomenon – an overwhelming focus on the individual in federal funding for children’s mental health research and services based on an ideology of individualism and biological hegemony pervading the belief systems of those responsible for shaping funding priorities.
CHAPTER 5: RESEARCH APPROACH AND METHODOLOGY

The constructivist and critical approach utilized in this study can be pursued with a variety of methods. I employ a mixed-methods, explanatory sequential design (Creswell & Clark 2011: 66), where qualitative data are utilized to \textit{explain} and \textit{triangulate} quantitative data (Bryman 2006 in Creswell & Clark 2011: 62). I begin with quantitative content analysis of federal funding opportunities (RFAs and PAs) for research and services related to children’s mental health, followed by qualitative discourse analysis of in-depth interviews of program officers responsible for the construction of these funding opportunities. In my study, I employ quantitative priority (Creswell & Clark 2011: 65): The quantitative method is primary, while the qualitative method plays a supporting role in the research design.

The study protocol # 20090209 was granted IRB exemption on February 17, 2009, under 45 Code of Federal Regulations (CFR) part 46.101(b)(3).

I. Analytic Strategy: Quantitative and Qualitative Content Analysis and Discourse Analysis

A. Content Analysis

Because my interest lies in how RFAs shape the types of research and programs that are funded, and ultimately shape solutions to the social problem of children’s mental health, for part 1 of my study, I performed a content analysis, examining how facts about children’s mental health are constructed through the written text of RFAs. Content
analysis is defined by Holsti (1968: 14) as “any technique for making inferences by systematically and objectively identifying special characteristics of messages.” Content analysis is a valuable technique when the goal of research includes the study of *meaning systems* to measure and uncover ideologies shared by professionals and organizations (Ventresca & Mohr 2002: 819-820).

My approach in determining posited causes and solutions for children’s mental health present in the RFAs was to test a specific hypothesis – that RFAs will be constructed in such a way that there is relatively more focus on causes and solutions at the individual level. The comparative focus on different causes and solutions present in the RFAs is observable and quantifiable. Content analysis can be both quantitative and qualitative – counts are a way to organize the manifest content of the data, while an examination of the latent content involves unraveling symbolism that lies beneath the surface (Berg 2004: 269). In this study, the latent content I am interested in is the communication of expectations regarding appropriate levels of analysis relative to the study of children’s mental health delivered through RFAs. This approach involves the use of abductive inferences (Krippendorf 2004: 36), or inferring the dominant ideology driving children’s mental health research and services based on the content of RFAs. This is accomplished by examining the framing of causes and what types of research and interventions related to solutions are considered appropriate to fund. From these findings it is possible to infer dominant understandings of the nature of mental health.
B. Discourse Analysis

For part 2 of my study, interviews (see Interview Guide, Appendix B) with program officers involved in the creation of RFAs were conducted in order to gain an understanding of their belief systems and assumptions regarding the origin of mental health difficulties and how the problem of mental health should be solved. My conceptualization of belief systems and assumptions is synonymous with Berger and Luckmann’s (1966) description of consciousness. Berger and Luckmann point out that in order for humans to make sense of everyday life, we need to have common understandings of reality. These understandings, or our consciousness of various phenomena, are constructed through language and interaction, yet become internalized as common sense, and are assumed to be reality (Berger & Luckmann 1966). It is in this sense that I am interested in exploring program officers’ belief systems, or their understandings of child mental health: The ways in which they talk about causes and solutions for children’s mental health problems has become their assumed common sense reality. It seems implicit that program officers’ belief systems would influence the work that they do, including the ways in which they frame RFAs. Here the intent was to become aware of how the authors of RFAs approach the problem of mental health because of the influence their understandings have on the creation of research policy. Additionally, I explored the factors that authors named as having an influence on the process and content of RFAs. My purpose overall was to develop ideas about super-scientific factors, including the beliefs of RFA authors, that may influence the way federal science policy is initiated and executed, and to understand the relative focus on
research and interventions related to individual versus social factors.

Discourse analysis is “the study of the way versions of the world, society, events and psyche are produced in the use of language and discourse” (Gibbs 2002: 241); critical discourse analysis recognizes the political and ideological nature of language and the importance of contextualizing language within the larger context in which it occurs (Hammersly 2002). Participants were viewed as exhibiting their version of the nature of mental health with responses regarding its genesis and their favored solutions. Their answers were examined for evidence of paradigmatic orientations to specific models of mental health, specifically whether they embraced the medical model which was dominant in the analysis of RFAs, and which allows for the concealment of larger social forces responsible for explaining at least some of the occurrence of mental health issues in children.

An ethnomethodological perspective was also useful in examining the process of RFA construction. Lynch (1993: 5) describes ethnomethodology as “the study of the ordinary ‘methods’ through which persons conduct their practical affairs,” a way of examining the relationship between social activities and how these activities are described. Ethnomethodology is useful in uncovering taken-for-granted assumptions about these activities (Lynch 1993). In this study I was interested in the way program officers understand the construction of RFAs and whether they reflect upon this activity or its consequences. Later in the interview, I specifically initiated reflection on the process by asking them to consider findings from the content analysis of RFAs. Questioning program officers regarding findings from the RFA analysis was also an opportunity to triangulate findings, discussed below.
C. Approach to Data Quality

Qualitative research is often subjected to criticisms regarding its status as “scientific,” resulting in questions about its epistemological value relative to quantitative methods rooted in the positivist tradition. While quantitative research is appropriate for measurement, it is only through qualitative research that meanings and concepts can be illustrated and clarified (Berg 2004). Regardless of the approach, data quality is an issue that must be addressed in all research designs. I employ several techniques for maintaining data quality, including triangulation and crystallization, as well as several additional techniques to improve reliability and validity.

Triangulation and crystallization are techniques to improve understanding of data. Berg (2004: 5) describes triangulation as “combining several lines of sight” to clarify and verify components of theoretical models. Original conceptualizations of triangulation referred to utilization of several types of data to understand one construct, but Denzin (1978: 292, 295) added the idea of “multiple lines of action,” or multiple types of data, methods, theories, or investigators to improve insight into data. This study utilizes content analysis and in-depth interviews to understand the construction and content of RFAs related to children’s mental health— including two types of data, quantitative and qualitative, two types of analysis, content analysis and discourse analysis, and two theoretical approaches, constructivist and critical. Approaching the research question from multiple angles is useful as a data quality monitor, and relating various data types improves confidence in validity (Fielding & Fielding 1986). An important aspect of my
in-depth interviews was to ask interviewees if the results of my RFA analysis coincided with their own experience. Additionally, I was able to ask RFA authors to explain the findings of the content analysis to determine whether my inferences regarding dominant ideologies driving RFA content were consistent with their experiences.

Crystallization has different aims from those of triangulation but also represents an approach to reaching greater understanding of the phenomenon under study. While triangulation attempts to perfect the understanding of a topic by using multiple methods, crystallization recognizes that researchers and participants ultimately co-construct reality, and always, inevitably, do so incompletely (Ellingson 2009: 22). Crystallization relies on five concepts, which are present in varying degrees in qualitative research, including the use of thick descriptions and interpretations; blending artistic, middle-ground, and scientific approaches to knowing; producing writing based in multiple genres; considering the researcher’s role in the research process; and adopting a conceptualization of knowledge that recognizes its contextualized, multi-faceted, and power-bound nature (Ellingson 2009: 10). This study draws upon several of these concepts, in particular an in-depth, “thick,” understanding of the phenomenon of RFA content through analysis of the documents and conversations with authors; the use of multiple approaches to knowing from counts to abduction to discourse; and understanding the creation of RFAs as contextualized within a society dominated by a medical model kept in place by powerful forces. The points of view of participants are each viewed as important and as reflective of truth, as is my interpretation.

In addition to developing multi-faceted understandings of data through triangulation and crystallization, reliability and validity are addressed in multiple ways.
Reliability is concerned with *consistency*, including the ability to replicate findings, while validity is concerned with *accuracy*. For the examination of causes and solutions present in the RFAs, the conceptualization and operationalization of all constructs, as well as the method of analysis, are laid out in detail (see below) so that other investigators could follow the same logic to select the sample and produce results. Additionally, the coding strategy and code categorizations were reviewed and refined with my dissertation advisor as a check for consistency and accuracy in categorizations.

Maxwell (2005: 108-109) discusses two threats to validity that are often suggested in relation to qualitative design: researcher bias and reactivity. He argues that what is important is not trying to eliminate biases or the influence of the researcher on participants ("reflexivity" in the context of interviews), because this is not possible. Instead, researchers should explore their own biases and state how they will be addressed, as well as come to an understanding of the ways in which their actions influence research participants, and discuss how this might affect the validity of interview data. I specifically hypothesized that there would be a bias toward individualized approaches to children’s mental health but was transparent about how I selected and coded the RFAs. Using the systematic coding scheme I developed minimized the possibility that the frequencies with which individual versus social causes and solutions occurred in the RFAs were subject to bias. I plainly state that I examine these phenomena from a critical perspective: Biomedical control over solutions for the problems of children’s mental health should be revealed, subject to critical analysis, and revised when beneficial to the children who suffer these problems. However, caution was taken during the interview process to not allow my beliefs regarding the importance of breaking from biomania to
affect the interviews through reflexivity. To accomplish this, I reviewed my interview
guide with my advisor, committee members, and several colleagues to assure that the
questions were not leading, biased, or offensive.

Several procedures are suggested to counteract threats to validity in qualitative
research, including “member checks,” which involves asking the interviewees whether
interviewer interpretations of the data match their experiences; using “rich data,” or
precise transcripts, to assure accuracy; and employing descriptive statistics to
approximate the amount of evidence accumulated to confirm or invalidate hypotheses
(Maxwell 2005: 110-113). As discussed above, data from RFAs and interviews were
compared to assess confirmatory or contradictory evidence. Additionally, important
statements were clarified with interviewees. All interviews were audio recorded and
transcribed.

II. RFA Sample Selection, Coding, and Analysis

A. RFA Sample

I utilized the U.S. Department of Health and Human Services, Office of
Extramural Research, National Institutes of Health Advanced Funding Opportunities and
Notices Search (USDHHS 2008b) to find historical and current relevant funding
opportunities. The search engine allows for active and inactive funding opportunities
from 1992 to the present from all possible issuing organizations (e.g., AHRQ, DHHS,
NIH, NIMH). All issuing organizations were considered as possible contributors to the
samples, as were both RFAs and PAs. A search of all RFAs, active and inactive, from all issuing organizations from January 1, 1992, through May 12, 2009, retrieved 6,637 records, the total number of funding offerings during this time period.

All records were exported to SPSS for coding in order to develop a sampling frame. The development of the sampling frame took place in two steps. First, records were selected for possible inclusion based on the title of the RFA and the issuing agency. Second, records were narrowed down based on content and focus. Procedures for sample identification of RFAs related to general child mental health and these disorders specifically are presented below. Sample inclusion and exclusion criteria were reviewed and revised based on consultation with committee members, including one committee member who is an expert in child mental health.

RFAs were first coded by title to identify RFAs which may be broadly related to mental health. If the title included the following words, or similar words, the RFA was included as potentially meeting criteria for sample inclusion: “mental health,” “mental illness,” “mental disorder” (including specific mood/anxiety disorders, behavior disorders, and psychotic disorders), “emotion,” “stress,” “psychopathology,” “psychological,” “psychiatry,” “behavior,” “neuro,” or “brain.” Also included were all RFAs with “social” in the title to assure no bias against RFAs which focused on social factors and mental health.

Additionally, at this step, all RFAs issued by the National Institutes of Mental Health (NIMH) and Office of Behavioral and Social Science Research (OBSSR) were coded for possible inclusion. Both of these agencies would be likely to sponsor research
activities highly relevant to children’s mental health based on their stated objectives\(^1\); OBSSR RFAs were included at this step in effect to *oversample* those which may include a social focus. Using this strategy, 1,045 records were identified for possible inclusion.

This study is focused on general mental health and disorders of childhood/adolescence that normally fall under the purview of mental health professionals, such as mood/anxiety disorders, attention-deficit and disruptive behavior disorders, attachment disorder, and eating disorders. Mood and anxiety disorders include

\(^1\) The stated objectives of the NIMH are:

- Promote discovery in the brain and behavioral sciences to fuel research on the causes of mental disorders;
- Chart mental illness trajectories to determine when, where, and how to intervene;
- Develop new and better interventions that incorporate the diverse needs and circumstances of people with mental illnesses;
- Strengthen the public health impact of NIMH-supported research (NIMH 2009).

The stated mission of the OBSSR is:

- To provide leadership and direction in the development, refinement, and implementation of a trans-NIH plan to increase the scope of and support for behavioral and social sciences research;
- To inform and advise the NIH director and other key officials of trends and developments having significant bearing on the missions of the NIH, DHHS, and other federal agencies;
- To serve as the principal NIH spokesperson regarding research on the importance of behavioral, social, and lifestyle factors in the causation, treatment, and prevention of diseases; and to advise and consult on these topics with NIH scientists and others within and outside the federal government;
- To develop a standard definition of “behavioral and social sciences research,” assess the current levels of NIH support for this research, and develop an overall strategy for the uniform expansion and integration of these disciplines across NIH institutes and centers;
- To develop initiatives designed to stimulate research in the behavioral and social sciences arena, integrate a bio-behavioral perspective across the research areas of the NIH, and encourage the study of behavioral and social sciences across NIH’s institutes and centers;
- To initiate and promote studies to evaluate the contributions of behavioral, social, and lifestyle determinants in the development, course, treatment, and prevention of illness and related public health problems;
- To provide leadership in ensuring that findings from behavioral and social sciences research are disseminated to the public;
- To sponsor seminars, symposia, workshops, and conferences at the NIH and at national and international scientific meetings on state-of-the-art behavioral and social sciences research (OBSSR 2009).
Depressive Disorders, Bipolar Disorder, and Anxiety Disorders; behavior disorders include Oppositional Defiant Disorder (ODD), Conduct Disorder (CD) and Attention Deficit Hyperactivity Disorder (ADHD); attachment disorders include Reactive Attachment Disorder; and eating disorders include Anorexia Nervosa and Bulimia Nervosa. To narrow down to a sample more specifically focused on general child mental health and these disorders, the following RFAs were excluded:

1) RFAs focused on intellectual disabilities, communication disorders, learning disorders, motor skills disorders, pervasive developmental disabilities, feeding disorders, tic disorders, and elimination disorders were excluded unless they were explicitly related to mental health in conjunction with disorder or behavior. These disorders fall more in line with disabilities or accepted physical illnesses. While these disorders are listed in the DSM-IV-TR, they are typically treated by speech pathologists, occupational therapists, educators, and physicians, and do not match my conceptualization of mental health.

2) RFAs which focused on other disorders or illnesses (including substance abuse disorders and HIV/AIDS), other social problems of children (such as child neglect) or on “behavior” were excluded unless they were explicitly related to mental health in conjunction with that disorder or behavior. These RFAs were eliminated to eliminate any bias toward individualized/medicalized causes or treatments that may accompany these disorders in particular.

3) RFAs which focused specifically on older adults or aging, or on disorders that are typically associated with aging, including delirium, dementia, Alzheimer’s and Parkinson’s were excluded. Because NIH policy requires the inclusion of children in research unless justification is given for their exclusion (NIH 2010b), RFAs which focused on mental health but were not specific about age group were not eliminated at this step.

4) RFAs which were intended for infrastructure or technology were excluded unless they were specific to mental health.

5) RFAs which focused exclusively on non-human subjects were excluded.

RFAs for which the title did not provide a clear description of the focus were examined individually to determine whether they were mental health-related. According
to one or more of these criteria, 611 RFAs were eliminated, leaving 434 RFAs identified which matched my conceptualization of mental health, 39 of which explicitly focused on children. Twenty-four of these were unique RFAs/PAs (not re-issues of previous ones). All 39 RFAs were included in the final sample.


Thirty-five RFAs were funded by the National Institute of Mental Health (NIMH), one by the Office of Behavioral and Social Sciences Research (OBSSR), one by the National Institute on Drug Abuse (NIDA), one by the National Institute on Neurological Disorders and Stroke (NINDS), and one by the Agency for Healthcare Research and Quality (AHRQ).

Research activity codes categorize the type of project eligible for funding: For the 19 grants issued between 1992 and 2002, no activity codes are available. All of the remaining grants fell under the “R, Research Project” activity code, including 11 R01s, four R21s, one R34, and four with multiple activity codes. See Appendix A for further description of activity codes.

It was not possible to determine the amount of allocated funds because this information was typically presented as a range of funding, if at all.

The unit of analysis for the identification of causes of child mental health problems was the “causal meaning unit,” described below. The unit of analysis for the analysis of solutions was the intervention type.
B. RFA Coding and Analysis

To answer research question 1, “To what extent are RFA funding opportunities in the area of child mental health services and research focused primarily on individuals as the locus of intervention and unit of analysis, to the exclusion of those which recognize
the role of social factors in the causation of child mental health problems?”, I coded for two major themes present in the RFAs: 1) causes of children’s mental health problems that were stated as known causes or suggested as possibilities, and 2) solutions offered for children’s mental health problems. RFAs were first reviewed and coded broadly for these two themes, then more specifically within the “causes” and “solutions” nodes to identify specific suggestions made in the RFAs. Coding was performed utilizing a qualitative software program, NVivo 8 (QSR International 2009). Microsoft Excel was utilized for frequency counts and percentages.

i. Causes of Children’s Mental Health Problems

For question #1, causes of children’s mental health problems, RFA text was further divided into “causal meaning units” representing statements of causation or contribution for mental health outcomes, including risk factors, and factors influencing the need for services. The purpose was to identify those variables that the authors of the RFAs considered important to the development of mental health problems. Causation was stated directly or implied in numerous ways. Language identified as indicating causation is presented in Appendix C. Because I am interested in factors involved in the genesis of mental health problems, I did not code units with phrases such as “related to,” “associated with,” or “correlated,” unless it was safe to assume that the factor temporally preceded the mental health problem.

Causal meaning units are reflected as causal models, or path diagrams, for each cause stated in the RFAs, for example, for the text,
There is a need for detailed empirical study of specific…emotional…processes that are impaired in childhood disorders…For example,…Identifying critical deficits in…emotional processing and regulation. Specifying the nature of deficits in these domains to identify…biologic…risk processes involved in the etiology of these deficits (RFA-MH-02-011)

biologic risk processes are involved in the etiology of emotional processing and regulation, which are functionally impaired in childhood mental disorders. Causal themes were contextualized within the RFA; in this example, the RFA is focused on childhood/adolescent mental health disorders and the outcome is emotional functioning within mental disorders. For the preceding statement, the meaning unit is:

BIOLOGIC RISK PROCESSES→
DEFICITS IN EMOTIONAL PROCESSING AND REGULATION→
IMPAIRMENT IN EMOTIONAL FUNCTIONING IN MENTAL DISORDERS

In a few RFAs, mental health was positioned as a mediating or moderating variable for other problems of childhood (such as substance abuse or academic functioning); however I was only interested in statements of cause about mental health, thus all meaning units ended with mental health. Each statement of cause was coded even if it represented the same causal process multiple times in the same RFA.

Causal meaning units were categorized based on the independent variable

2 Multiple causal meaning units were often present in the same statement. For clarity, text related to other causal meaning units was removed from this excerpt and replaced by ellipses.
represented first in the causal chain. The first variable in the causal chain, the one that is most distal to the mental health outcome, is viewed as representing the origin of the mental health problem, or the “fundamental cause.” Sociologists such as Link and Phelan (1995) consider social arrangements, including SES, to be the fundamental cause of many health problems. Geneticists may consider genes to be the fundamental cause of mental health problems; neuroscientists may believe that the root of the problem lies in brain chemistry or physiology. Because of their location at the beginning of the chain, fundamental causes represent the RFA authors’ view on the origins of mental health problems, and thus a crucial node for interventions. In the case of the preceding example, “Biologic Risk Processes” would be the first link in the chain, and therefore the purported “fundamental cause.” The purpose of the categorization was to determine the relative contribution of individual/reductionistic and social fundamental causes for children’s mental health disorders presented in RFAs. Fundamental causes may have direct, independent effects on the mental health outcome of interest, or they may have indirect effects on mental health through a mediating or moderating variable. Counts for each category and subcategory were compiled and percentages were calculated. Results are presented both by RFA and by meaning unit: Counts of each category of causes within individual RFAs are tallied, as are meaning units overall.

Categories of causes included *individual* (biological, psychological, developmental, behavioral, multiple); *individual-in-context* (experiences/stress/life events, individual plus social, individual goodness-of-fit with environment); and *social* (institutional, interpersonal, family, contextual, multiple).

Within *individual* causes, biological causes include any causes originating within
the body, ranging from the microlevel of cells and molecules to the brain and its regions to entire bodily systems, as well as genetics and specific physical illnesses. Psychological causes include attention, cognition, emotion, motivation, personality, and other mental disorders or substance abuse. Developmental causes include chronological age, development, and life transitions. Behavioral causes include specific behaviors or behavior generally.

Cases categorized as individual-in-context included experiences, stress or life events of the individual that resulted in mental health problems, the individual’s goodness-of-fit with the legal and educational environment, as well as the combination of individual and social causes.

Social causes are comprised of institutional (school); interpersonal (non-family or nonspecific victimization and peers); family (victimization, parental characteristics, environment); and contextual (environmental/nonspecific social or contextual, community, cultural/ethnic, economic, gender/sexual orientation) causes.

While fundamental causes represent the first point in the causal chains and the most distal from the development of mental health problems, proximal causes, when articulated, represent potential loci of secondary preventive measures. Therefore, intervening proximal causes, when present, were also identified in the causal models. Proximal causes represent the cause immediately proximate to the mental health outcome in causal chains when more than one cause was identified. These causes can be assumed to have a presumed direct effect on the mental health outcome under study. Proximal causes were categorized in the same manner as fundamental causes. For example, in the following causal meaning unit, both the fundamental and the proximal cause are
individual in nature. The fundamental cause, *genetic risk processes*, is individual and biological, while the proximal cause, *child temperament*, is individual and psychological:

GENETIC RISK PROCESSES→
CHILD TEMPERAMENT→
IMPAIRMENT IN EMOTIONAL FUNCTIONING IN MENTAL DISORDERS
(RFA-MH-02-011).

Categorization of fundamental and distal causes could also differ, as in the following example where the fundamental cause, *early adverse experiences*, is individual-in-context, and the proximal cause, *stress-response system development*, is individual and biological:

EARLY ADVERSE EXPERIENCES→
STRESS-RESPONSE SYSTEM DEVELOPMENT→
DEPRESSION
(PA-05-162).

ii. **Solutions for Children’s Mental Health Problems**

In identifying and classifying text for the second theme, *solutions for child mental health*, RFAs were first coded broadly for all text that identified factors related to mental health intervention. This text included mention of research related to treatment types, targets of treatment, processes of service, treatment providers, and locations of service.
Treatment types are the focus of this study and are defined as actions intended to prevent mental health problems or improve mental health outcomes for children diagnosed with a disorder. At times, identifying treatment types was quite straightforward, such as when authors utilized words such as “therapy,” “treatment,” “intervention,” or “service” within the text. For example, in the following text, it is readily evident that the authors consider group therapy, family therapy, and couples therapy relevant topics of interest:

Very little is known about other modalities – including group therapy, family (family of insertion not family of origin) therapy, or couples therapy for this population (RFA-MH-07-090).

In other cases, treatment types were less obvious, such as in the following text, where the treatment type is a “behavioral technique”:

Strategies and programs such as…classroom-based behavioral techniques, to name a few, have been found to improve outcomes for children with disruptive behavior disorders and their families (RFA-MH-00-011).

Technique is not a word typically utilized to indicate a type of mental health intervention, but nevertheless represents an intervention designed to improve mental health functioning in youth.

To determine the level of intervention at which RFAs directed attention, treatment types were categorized by their level of intervention: individual, individual-in-context, or social. Results are presented for individual RFAs and overall. Individual solutions were categorized as biological, psychological, or behavioral. Interventions designated as individual-in-context included those provided to the individual in a group or residential
setting. To examine the comparative focus on preventing children’s mental health problems versus intervening after symptom onset, social causes were categorized as either upstream social interventions or downstream social interventions. Upstream social solutions are preventive, and include non-specific preventive interventions (RFA text that mentions “prevention” with no further information) and “universal” preventive interventions, those addressing an entire population. Downstream social solutions include any social intervention attempted after problem onset, among them those at the institutional, family, interpersonal, and contextual levels, as well as “indicated” preventive interventions, those aimed at reducing negative outcomes after problem onset, and “selective” preventive interventions, or those designed to reduce risk in vulnerable groups. Selective preventive interventions are considered downstream because they do not address the reasons why some groups are at risk while others are not.

III. Interview Sample Selection, Coding, and Analysis

A. Interview Sample

Program officers/scientific contact persons were intentionally selected for possible study inclusion based on their stated role in the 39 RFAs reviewed for causes and solutions related to child mental health. All program officers/scientific contact persons were eligible – the entire population relevant to my research question. Fifty-three individuals were identified in this manner. The full name of each potential participant was searched for in the NIH directory (NIH 2009d) to determine whether he
or she was still actively employed by NIH. Thirty-three individuals remained active as of August 14, 2009, and were considered possible study participants. One individual was subsequently discovered to have left NIH, leaving 32 potential participants.

A concept frequently utilized relative to in-depth interviewing in qualitative research is *saturation*. When additional interviews do not present new information, saturation is said to be achieved (Schutt 2006: 312). The interview portion of this study was exploratory; the purpose of the interviews was to obtain a sampling of accounts that would either support or refute content analysis findings and provide a basis for understanding why RFAs are written the way that they are. The interview portion of my research represents a first step toward understanding whether RFA authors’ thinking about children’s mental health problems is indeed colored by an individual-level bias, and whether this problem merits additional attention. Therefore, I did not intend to achieve saturation through the interview process. The interviews represent a variety of views on causes and solutions for children’s mental health problems but were not intended to be representative of all program officers, nor even all officers working in child mental health.

**B. Interview Data Gathering Procedures and Process**

The initial strategy for contacting potential participants was to email an invitation to participate in the study (Appendix D), along with the informed consent document (Appendix E) for their review, then to follow up with phone calls approximately one week later to determine whether there were any questions and whether they were
interested in participating. The first three emails were sent August 14, 2009, and all three individuals contacted declined to participate.

The first potential participant responded via email that she was no longer involved in children’s mental health research and suggested that I contact the NIMH press office. I phoned her to let her know I was still interested in talking with her even if she was no longer in the field of child mental health based on her specific involvement in RFAs related to my study. She replied that there were a lot of people in child mental health who would be better to talk with and that she was “not allowed” to speak with me without permission from the press office. I contacted the press office and was informed that program officers were free to speak with me and I could contact them directly. Because she declined by both email and phone, I did not re-contact her with this new information.

The second individual also responded by email that he was not involved with children’s mental health research anymore and I again explained the manner in which the sample was selected, and that I would still be interested in interviewing him even if he no longer worked with children. He replied that it had been 8 years since he worked in child mental health, and felt that he could not be helpful for my study.

The third individual I contacted was very interested in the study (even suggested that we collaborate on a book relevant to the topic), and in participating, but voiced concern about protecting herself. She stated that she was not familiar with the particular individual in the press office with whom I had spoken. She additionally stated that she was concerned about her name being associated with the data and that she may want to put a disclaimer on her comments that she would be speaking for herself and not for the government. She stated that while she did not want to be audio recorded, she was willing
to answer global, general questions. When I followed up with her regarding informed consent, she replied by email that she was sorry but due to time constraints would not be able to participate.

At this point, I became concerned about the resistance I was encountering in sample recruitment. Two potential participants had expressed reservations about being “allowed” to participate. I called the NIMH press office again to attempt to obtain “official” permission to speak with program officers. While they would not provide official approval, I was again informed that program officers were free to speak with me if they chose. I discussed the problems I was having recruiting participants with my advisor and made several contacts with individuals familiar with the NIH to determine whether my recruitment procedures could be revised to promote participation.

As a result of these steps, I was able to obtain the assistance of a federal director of research (hereafter “the director”), who agreed to contact the individuals on the list of potential participants whom he knew to introduce me and ask for their participation: Five individuals were contacted and all agreed to participate. The director emailed the contact information for individuals who agreed to participate to me and I contacted them to arrange a time to hold the interviews. Four interviews were arranged in this manner. The fifth individual contacted by the director originally agreed to participate but did not respond to multiple requests to schedule a time to talk.

After conducting these interviews, I sought to speak with one or more program officers working directly and currently in child mental health. Six additional requests for interviews were sent via email, and one additional program officer was recruited in this manner. Of the remaining five, two did not respond, one cited time constraints, one had
transitioned to another institute and forwarded the name of another individual for me to contact, and one forwarded my request to the Science Policy and Evaluation Branch of NIMH. I scheduled and completed an interview with an individual from this office. Comments on the discussion with this individual and its implications are presented separately from program officer interviews, in Chapter 9.

Five program officers were interviewed in all. Participants were from the National Institute on Drug Abuse and the National Institute of Mental Health. Participants had been employed by NIH between 13 and 23 years. Backgrounds included neurobiology, pharmacology, psychiatry, and psychology.

The first four participants signed informed consent documents, however it was then determined that because the study was granted exempt status, this step was unnecessary; the fifth program officer and the individual from the policy office did not sign informed consent documents. Interviews were conducted by phone. Utilizing the interview guide (Appendix B), participants were questioned regarding their experiences as program officers, the development of RFAs, their ideas regarding the causes and solutions for children’s mental health problems, and reasons for the focus on individual-level causes and solutions in RFAs. If participants agreed, the interview was recorded to a secure server. Audio files were transferred to a secure laptop and deleted from the server.

C. Interview Coding and Analysis

Interviews were transcribed from audio files into Microsoft Word. Coding was performed utilizing a qualitative software program, NVivo 8 (QSR International 2009).
Again, this part of the study had two purposes: 1) to triangulate the findings from the content analysis of RFAs, and 2) to explore factors that might explain the relative focus on biomedical and other individual explanations for children’s mental health revealed in the RFA analysis.

I hypothesized that the content of RFAs may be due partially to program officers’ reductionist way of conceptualizing mental health problems: *RFA authors’ belief systems related to children’s mental health is one possible explanation for the individualized, biologically focused content of RFAs.* If program officers embrace biomedical and individualized models of mental health, the finding that RFAs are predominantly focused on these factors is not surprising. Respondents’ own ideas about the content of RFAs were also explored. *Respondents were specifically asked why there was so little focus on social factors found in the RFA analysis.* Here, respondents had the opportunity to reflect on the findings of the content analysis, refute these findings if desired, and present their own understandings of why RFAs are written the way that they are, regardless of whether they agree or disagree with the content analysis results. While respondents’ mental health belief systems and speculations about the content of RFAs are necessary to understanding the phenomena of individualization of federal funding, it is also important to consider the process by which RFAs are conceptualized, written, and approved for release. Individual program officers work within an institutional structure and forces beyond their own understandings of mental health also influence the content of RFAs. For this reason, program officers’ description of the process involved in creating RFA content was also examined to gain a better understanding of what factors outside of the control of program officers might cause the intense focus on biomedical research and intervention within
RFAs.

Interview coding was therefore conducted to determine whether the results of my content analysis were supported by program officers’ experiences, and to explore three possible sources of information for explanations for the content of RFAs: 1) RFA authors’ belief systems about child mental health, 2) respondents’ explicit explanations for the individualistic, biomedical focus of RFAs discovered by the content analysis, and 3) the process of RFA construction from the perspective of the authors.

First, text was coded for responses to questions about whether the findings from the content analysis coincided with their experiences relative to the primary foci of RFAs. Text for this code was generated directly from a question that sought to elicit their feedback on my findings, which asked whether, in their experience, most RFAs were centered on solving the problem of child mental health at the individual level. This line of questioning allowed for triangulation of RFA content analysis findings: Respondents agreed that the bulk of RFAs related to mental health are aimed at intraindividual processes.

Participants’ responses were coded for evidence of favored explanations and solutions for children’s mental health problems. Understanding program officers’ beliefs about children’s mental health problems is central to addressing my second research question, “What forces explain the content of RFAs and PAs related to children’s mental health?”, and specifically addresses Research Hypothesis 2a, “Authors of RFAs and PAs related to children’s mental health will articulate a reductionist perspective on the causation of, and appropriate interventions for, children’s mental health problems.” Respondents were asked what they believe causes mental health problems, as well as how
these problems should be addressed, but also revealed their views more subtly throughout the course of the interview as they discussed their experiences. Of particular interest is whether the respondents expressed or implied adherence to biomedical understandings of mental health (evidence for “biomania”), or other individualized approaches to mental health (evidence for reductionism generally), and whether they recognized the role of social factors in the genesis of children’s mental health problems and its potential solutions. For example, I asked one program officer to discuss what things are important in the genesis of psychopathology, and the respondent launched into a discussion of brain disorders. The statements made during this interaction illustrated commitment to the biomedical model. In another example, the program officer was asked what types of interventions would be appropriate if scientists could identify environmental triggers for genes that code for mental health problems. The program officer’s response focused entirely on genes; even when discussing environmental processes which might be involved, these influences were framed as genetic. The dialogue in this case was characterized as evidence that the environment tends to “disappear,” or become marginalized, in the discourse surrounding mental health. Several other themes were also documented which illustrated program officers’ views of the biomedical model, as well as their comparative recognition of the importance of environmental factors to mental health.

Hypothesis 2b, “Authors or RFAs and PAs related to children’s mental health will identify multiple ‘nonscientific’ factors that influence content,” was addressed by asking respondents directly about what factors they thought might explain the overwhelming focus on the individual, i.e., why are RFAs constructed this way? Respondents’ ideas on
what might explain the relative focus on individual and biomedical causes and solutions in the RFAs were then categorized into five themes that emerged from the responses. For example, when asked why individual factors are the focus of RFAs, one respondent stated that this is because the biological model frames all of the work of NIH, while another emphasized the importance of the “disease model” as the organizational structure upon which NIH was founded. The NIH biomedical framework thus became one of the explanations of program officers for the content of RFAs.

Hypothesis 2b was also informed by asking respondents to describe the construction of RFAs from beginning to end, and identifying those factors named as influential to the process and content of RFAs. These aspects of the process of federal funding of scientific research represent taken-for-granted ways of constructing problems and solutions around child mental health. Every element mentioned as germane to the RFA process was flagged and then categorized by its level of influence. Factors were sorted into five categories represented by the responses: Individuals (non-investigators and investigators), groups, institutional factors, political and social factors, and “the field.” For example, the Institute Director, an individual, and the advisory council, a group, were both mentioned several times as important influences in the development of topics for RFAs.
CHAPTER 6: RESULTS, CONTENT ANALYSIS OF RFAs

I. RFA Sample Description

The 39 RFAs/PAs identified are presented in Table 1, along with the year issued, the issuing organization, and the total number of causal meaning units and solutions identified within the RFA by type: individual, individual-in-context, or social.

Descriptive information on the 39 RFAs does not appear to reveal any clear trends related to the year of issue; however there were spikes in the number of RFAs issued in 2000 and 2006. It is not surprising that the majority of RFAs were issued by NIMH. As stated in Chapter 5, for the 19 grants issued between 1992 and 2002, no activity codes are available. All of the remaining grants fell under the “R, Research Project” activity code, including 11 R01s, four R21s, one R34, and four with multiple activity codes. While the number of RFAs with assigned activity codes is small, it is possible that the predominance of R01 activity codes may indicate that relatively more funding is distributed to well-established research programs with the infrastructure and experience to compete for funding at this level, while comparatively fewer RFAs are aimed at smaller preliminary/exploratory projects. If little funding is directed toward these fledgling projects, the development of innovative approaches to mental health may be hindered.
Table 1: RFAs/PAs Relevant to Children’s Mental Health, 1992-2009, N=39

<table>
<thead>
<tr>
<th>Title</th>
<th>Year</th>
<th>Org.</th>
<th>Ind</th>
<th>Ind-in-Cntxt</th>
<th>Soci</th>
<th>Ind</th>
<th>Ind-in-Cntxt</th>
<th>Soci</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Child and Adolescent Development and Psychopathology Research Centers</td>
<td>1993</td>
<td>NIMH</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>2) Research on Emergency Mental Health Services for Children and Adolescents</td>
<td>1993</td>
<td>NIMH</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3) Dissertation Research Grants in: Child and Adolescent Developmental Psychopathology HIV/AIDS Research Mental Health Services Research</td>
<td>1994</td>
<td>NIMH</td>
<td>13</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4) Multi-site Study of Mental Health Service Use, Need, Outcomes, and Costs in Child and Adolescent Populations</td>
<td>1994</td>
<td>NIMH</td>
<td>1</td>
<td>0</td>
<td>11</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5) Research on Effectiveness of Children’s Mental Health Services</td>
<td>1994</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>6) Effectiveness of Children’s Mental Health and Substance Abuse Treatment in the General Health Sector</td>
<td>1997</td>
<td>AHRQ</td>
<td>10</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7) Research Career Development in Mental Disorders of Children</td>
<td>1998</td>
<td>NIMH</td>
<td>76</td>
<td>9</td>
<td>21</td>
<td>4</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>8) Developmental Psychopharmacology</td>
<td>2000</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>28</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9) Early Identification and Treatment of Mental Disorders in Children and Adolescents</td>
<td>2000</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>13</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>10) Effectiveness, Practice, and Implementation in CMHS’ Children’s Service Sites</td>
<td>2000</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>13</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>11) Implementation of Intervention Strategies for Children with Disruptive Behaviors</td>
<td>2000</td>
<td>NIMH</td>
<td>1</td>
<td>0</td>
<td>6</td>
<td>5</td>
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<td>12) Interventions for Suicidal Youth</td>
<td>2000</td>
<td>NIMH</td>
<td>5</td>
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<td>0</td>
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<td>13) Research on Depression Comorbid with Externalizing Problems in Children</td>
<td>2000</td>
<td>NIMH</td>
<td>33</td>
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<td>0</td>
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</tr>
<tr>
<td>14) Exploratory Grants in Pediatric Brain Disorders: Integrating the Science</td>
<td>2000</td>
<td>NINDS</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<tr>
<td>15) Research on the Development of Interventions for Youth Violence</td>
<td>2000</td>
<td>OBSSR</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>16) Child and Adolescent Interdisciplinary Research Networks</td>
<td>2001</td>
<td>NIMH</td>
<td>46</td>
<td>27</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>17) Research Units on Pediatric Psychopharmacology and Psychosocial Interventions</td>
<td>2001</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td>0</td>
<td>0</td>
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<tr>
<td>18) Validation of Child Mental Health Diagnostic Measures</td>
<td>2001</td>
<td>NIMH</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>19) The Impact of Child Psychopathology and Childhood Interventions on Subsequent Drug Abuse</td>
<td>2002</td>
<td>NIDA</td>
<td>1</td>
<td>1</td>
<td>9</td>
<td>4</td>
<td>0</td>
<td>4</td>
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<tr>
<td>20) Developmental Psychopharmacology</td>
<td>2003</td>
<td>NIMH</td>
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<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>21) Effectiveness, Practice, and Implementation in CMHS’ Children’s Service Sites</td>
<td>2003</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
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<td>13</td>
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<td>Project Description</td>
<td>Year</td>
<td>Agency</td>
<td>Base Grant</td>
<td>Small Grant</td>
<td>Medium Grant</td>
<td>Large Grant</td>
<td>Total Awards</td>
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</tr>
<tr>
<td>Psychosocial Needs of Children Affected by AIDS in Low-Resource Countries</td>
<td>2004</td>
<td>NIMH</td>
<td>0</td>
<td>5</td>
<td>41</td>
<td>6</td>
<td>0</td>
<td>4</td>
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<tr>
<td>Neurodevelopment and Neuroscience Signaling in Adolescence: Relevance to Mental Health</td>
<td>2005</td>
<td>NIMH</td>
<td>227</td>
<td>16</td>
<td>2</td>
<td>14</td>
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<td>2006</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>28</td>
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<tr>
<td>Developmental Psychopharmacology</td>
<td>2006</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>28</td>
<td>0</td>
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<tr>
<td>Early Identification and Treatment of Mental Disorders in Children and Adolescents</td>
<td>2006</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>13</td>
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<tr>
<td>Early Identification and Treatment of Mental Disorders in Children and Adolescents</td>
<td>2006</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>1</td>
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<tr>
<td>Effectiveness, Practice, and Implementation in CMHS’ Comprehensive Community Mental Health Services Program for Children and their Families Service Sites</td>
<td>2006</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>13</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Effectiveness, Practice, and Implementation in CMHS’ Comprehensive Community Mental Health Services Program for Children and their Families Service Sites</td>
<td>2006</td>
<td>NIMH</td>
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<td>0</td>
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<tr>
<td>Neurodevelopment and Neuroscience Signaling in Adolescence: Relevance to Mental Health</td>
<td>2006</td>
<td>NIMH</td>
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<td>2</td>
<td>14</td>
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<tr>
<td>Neurodevelopment and Neuroscience Signaling in Adolescence: Relevance to Mental Health</td>
<td>2006</td>
<td>NIMH</td>
<td>227</td>
<td>16</td>
<td>2</td>
<td>14</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Refining and Testing Mental Health Interventions and Services for Youth with Mental Illness who are Transitioning to Adulthood</td>
<td>2006</td>
<td>NIMH</td>
<td>2</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Refining and Testing Mental Health Interventions and Services for Youth with Mental Illness who are Transitioning to Adulthood</td>
<td>2006</td>
<td>NIMH</td>
<td>2</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Developmental Psychopharmacology</td>
<td>2007</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>28</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Innovative Trials for the Treatment of Anorexia Nervosa in Late Adolescence and Adulthood</td>
<td>2007</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Neurodevelopment and Neuroscience Signaling in Adolescence: Relevance to Mental Health</td>
<td>2008</td>
<td>NIMH</td>
<td>227</td>
<td>16</td>
<td>2</td>
<td>14</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Neurodevelopment and Neuroscience Signaling in Adolescence: Relevance to Mental Health</td>
<td>2008</td>
<td>NIMH</td>
<td>227</td>
<td>16</td>
<td>2</td>
<td>14</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Developmental Psychopharmacology</td>
<td>2009</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
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<td>28</td>
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</tr>
<tr>
<td>Developmental Psychopharmacology</td>
<td>2009</td>
<td>NIMH</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>28</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
II. Results: Causes of Children’s Mental Health Problems

RFAs were coded to identify causes that were hypothesized as being related to children’s mental health problems, or definitively stated as related to the development of children’s mental health problems. Causes were represented as “meaning units” (see pages 77-81 for a detailed description of meaning units). Table 1 presents the results of the RFA-level analysis of causes and solutions identified by the content analysis, with the favored unit of analysis/intervention in bold. Of the 39 RFAs included in the sample, 21 contained text identifying causes for children’s mental health problems. Thirteen of the 21 RFAs identified more individual-level than social fundamental causes, six included more social causes, and two contained the same number of individual and social causes. On average, the RFAs where individual-level causes exceeded the social causes did so by 98.5 meaning units, while the RFAs focused on social causes exceeded individual causes by 11 meaning units on average: RFAs focused on individual-level causes presented far more posited causes than those favoring social causes. This finding could indicate that among RFAs focused primarily on individual causes, social causes are marginalized, while RFAs with more social causal meaning units relative to individual ones may be more likely to balance the two. The large number of individual causes within some RFAs seems to be due partially to multiple suggested biological pathways to mental health problems in these RFAs. Given that the specific pathways by which mental health is physically embodied is still a major unanswered question in the biomedical model of mental health, this is not surprising. This could also indicate the multiple lines of research being funded in the biomedical realm.
For the 13 RFAs with more individual-level causes, five are re-issues of the same RFA, “Neurodevelopment and Neuroscience Signaling in Adolescence: Relevance to Mental Health” (RFAs 23, 30, 31, 36, and 37 in Table 1) occurring between 2005 and 2008. This particular RFA seemed to have staying power, indicating continued interest in this topic. Importantly, additional RFAs where individual-level causes exceeded social ones also included an RFA focused on stimulating interdisciplinary research networks (RFA 16) and one intended to support career development in the area of children’s mental health (RFA 7). If individual-level research is favored in interdisciplinary work and in training future generations of researchers, this could have an effect that continues far beyond these individual RFAs.

The RFAs where social causes exceeded individual ones were varied. Most involved family or victimization issues but did not recognize factors which might differentially place families at risk. These included RFAs focused on: emergency mental health services (RFA 2), which included causes of mental health problems related to abuse and violence; interventions for disruptive behaviors (RFA 11), including the influence of deviant peers, abuse, neglect, harsh parenting practices, and negative family environments in creating these behaviors; interventions for violence (RFA 15), which cited interpersonal violence as causative; and the effect of child psychopathology on later drug use (RFA 19), with the initial pathology being related to family characteristics and environment, parental substance use disorders or psychopathology, stressful environments, and traumatic events.

One RFA, designed to initiate a multi-site study of mental health services needs (RFA 4), cited family roles and functioning and contextual/community variables as
relevant to these needs. This was one of just two RFAs which contextualized problematic family environments within a larger framework. The second was a study of the psychosocial needs of children who lost parents to AIDS in low-resource countries (RFA 22). This study identified parent HIV infection itself, community devastation from AIDS, stigma, the social environment, victimhood, and social support issues all within the context of location within a low-resource country. This RFA named the most social causes and was the most descriptive of social causation. Interestingly, this is research focused outside the United States, as if context and stigma are worthy topics in other countries, but not necessarily at home.

In-depth discussion of causal meaning units follows. Distal, or “fundamental” causes are discussed first, followed by proximal causes.

A. Distal/Fundamental Causes of Children’s Mental Health Problems

In all, 1,587 distal/fundamental causal units were identified. 84.0% of the fundamental causes were attributed to or arose at the individual level, 8.4% were classified as individual-in-context, and 7.6% were social. Results are presented in Table 2.
Table 2: Presumed Distal Causes of Children's Mental Health Problems Identified in RFAs, 1992-2009, N=1,587

<table>
<thead>
<tr>
<th>Individual</th>
<th>Individual-in-Context</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>(N=1333)</td>
<td>(N=133)</td>
<td>(N=121)</td>
</tr>
<tr>
<td>Biological</td>
<td>Experience/Stress/Life Events</td>
<td>68.4%</td>
</tr>
<tr>
<td>Psychological</td>
<td>Contextual + Individual</td>
<td>24.8%</td>
</tr>
<tr>
<td>Developmental</td>
<td>Contextual + Family + Individual</td>
<td>3.0%</td>
</tr>
<tr>
<td>Behavioral</td>
<td>Family + Individual</td>
<td>1.5%</td>
</tr>
<tr>
<td>Multiple</td>
<td>Goodness-of-Fit</td>
<td>2.3%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

i. Individual

As hypothesized, individual causes of children’s mental health problems were by far the most common type described in the RFAs. 1,333 unique individual causes were identified in the 1,587 meaning units. Individual causes were classified by their focus on biological, psychological, or behavioral features of the individual, by aspects of individual development, educational, legal, and multiple individual causes.

*Biological* causes far outnumbered all types of causes of children’s mental health problems combined, with 1,173 causal meaning units, or 88.0% of individual causes and 73.9% of the overall total. Specific biological causes included genes and genetic determinants/factors/risk processes, causes at the micro-level of the body (molecular, cellular, hormonal, neuronal, biochemical), or brain or brain region-level (brain changes,
brain development, anomalies of brain development, neurobiological changes in
amygdala circuits, neurobiological changes in hippocampus) causes, and physical illness.

Genetic causes played a prominent role in the biological category. In an RFA
related to pathophysiology of mental disorders, the call was for:

Proposals to identify genes involved in anomalous development, degeneration or
injury processes by exploiting growing knowledge of neurogenetics in
development, cell cycle regulation, and the cascades evoked by injury
(PAS_99_080).

Here, genes produce developmental abnormalities or structural defects, which result in
mental disorders, seemingly skipping a step by which these abnormalities might translate
into problems of mental health, as well as any indication of what might cause gene
activation. Other RFAs proposed that genes are responsible for changes in psychological
functioning in several areas of mental health, again neglecting the processes by which
these changes are initiated or carried out. For example, an RFA focused on
neurodevelopment and neuroendocrine signaling relevant to mental health, called for
research to:

Expand models to identify critical genes, molecules, and circuits underlying
changes in cognitive and emotional function (including, for example, fear,
anxiety, depression) across adolescent development (PA-05-162).

Another area of great interest was adolescent brain neurobiology, including research to:

Define molecular and cellular mechanisms regulating neural atrophy, pruning,
and growth across adolescence and delineate how these processes impact brain
function and behavior in model systems relevant to mental illness (PA-05-162).
This statement takes mental health to origins in molecular and cellular mechanisms, which initiate a complex series of bodily processes resulting in mental illness in adolescence. Again, there is no indication of how these mechanisms are activated or whether they are susceptible to environmental influences.

Physical illness, including HIV/AIDS and disabilities, were mentioned infrequently; however there were interesting implications for causation based on the manner in which they were presented. In an RFA calling for doctoral research in child and adolescent developmental psychopathology and HIV/AIDS research, one potential area of study was “…elucidation of how HIV infection produces specific neuropsychiatric syndromes” (PAR-94-063). No mention is made of how receiving a diagnosis of such a serious illness or the stigma of HIV infection may result in mental health symptoms, despite research that suggests that these may be important avenues for continued study. For example, in a meta-analysis of studies of HIV and risk for depressive disorders, Ciesla and Roberts (2001) found that HIV-positive individuals were almost twice as likely as HIV-negative individuals to have a current diagnosis of depression, and that there was no difference between symptomatic and non-symptomatic groups, leading the authors to suggest that the difference was not necessarily the result of disease progression. Additionally, internalized HIV-related stigma has been associated with symptoms of depression and anxiety (Lee, Kochman & Sikkema 2002). While there are multiple pathways by which HIV may result in psychiatric symptomatology, in this RFA, these symptoms are classified as resulting from infection and as neuro or at the
level of the central nervous system, including the brain.

While biological or genetic causes were sometimes mentioned in the same causal meaning unit as environmental causes, typically the RFA as a whole was focused on biological causes, with environmental causes seemingly added as an afterthought, or as a token nod to the possibility that not all would be explained with biology and genetics. Only a small subset of biological and genetic causes included interest in the interactions between these and environmental causes (these are categorized as individual-in-social); mostly they were presented as distinct factors. None attended to the possibility that the two are bi-directional or co-constituted.

*Psychological* causes represented 5.5% of individual causes and 4.6% of the overall total and included attention, cognition/cognitive development, emotions/emotional development, motivation, and co-occurring conditions, such as other mental health disorders or substance use disorders. For example, in the following text, cognitive and emotional factors underlie psychopathology and psychiatric disorders:

Research of interest includes factors underlying cognitive, emotional…development in children and adolescents that underlie problematic behaviors, maladjustment, psychopathology and diagnosed psychiatric disorder (RFA-MH-99-002).

*Developmental* causes accounted for 1.7% of individual causes and 1.4% of the total causal meaning units. Adolescence and puberty were considered important as a period during which mental health problems arise related to brain changes, timing of the transition to puberty, emotional reactions to puberty, experiences during adolescence,
adolescence as a unique period of sensitivity, hormonal changes of adolescence, and physical changes of puberty. In addition to being a discrete category, developmental causes were also present in every one of the causal meaning units in the *multiple individual* causes category, which represented 3.5% of individual causes and 3.0% of the total causal meaning units. An example of a developmental cause follows:

Adolescence is a developmental period encompassing dramatic hormonal, physiological, and behavioral change. It is also a uniquely important period for brain and psychological development during which the symptoms of several mental disorders such as depression, schizophrenia, eating disorders, and substance abuse are often first reported (PA-05-162).

In this example, adolescence appears to be the critical factor in the onset of mental health disorders. Cultural and historical differences in the experience of adolescence are not recognized.

*Behavioral* causes (behavior, behavioral processes, behavioral factors, attempted suicide) accounted for 1.3% of individual causes and 1.1% of the total. Behavioral factors as causes for children’s mental health problems were not well developed nor were they descriptive of the specific aspects of behavior hypothesized or expected to lead to the development or manifestation of mental health problems. Instead, these were broadly referred to as “adolescent behaviors,” “behavioral factors,” or “behavioral processes” in all but one case. For example, a PA focused on the relevance of neurodevelopment and neuroscience to adolescent mental health stated:

Studies in normal human adolescents and clinical populations are encouraged to explore…behavioral…processes contributing to changes in cognitive and affective regulation, the expression of symptoms of psychopathology during this
period (PA-05-162).

In this example, unidentified and undefined behavioral processes contribute to changes in the regulation of psychological processes, which are linked to the development of psychopathology during adolescence. Potential causes of behavioral processes are not identified.

The only RFA that specifically named a behavior related to children’s mental health was a PA with the stated purpose of encouraging research on emergency mental health services for children and adolescents which identified “attempted suicide” as indicating a need for psychiatric or psychosocial services (PA-93-075). There was no clear link between attempted suicide and any precipitating event or more fundamental cause for taking this action.

ii. Individual-in-Context

Causes categorized as individual-in-context recognized the role of experiences, stress, and life events (68.4% of individual-in-context or 5.7% of the total) on the development of mental health problems, as well as individual causes in conjunction with social causes (29.3% of individual-in-context or 2.5% of the total), and causes related to goodness-of-fit with the environment (2.3% of individual-in-context or 0.2% of the total). Stress as a fundamental cause is exemplified in an RFA aimed in part at understanding the relationship between brain development and mental health disorders:
Studies of the effects of the postnatal environment (e.g., stress) on neural structure and function (RFA-MH-99-002).

While the social context of the individual was recognized as a potential cause for physical changes that result in mental health disorders, differential exposure to stress was not mentioned as a potential area of inquiry.

iii. Social

Causes classified as social included interpersonal, institutional, family, and contextual factors, as well as multiple causes that were social in nature.

Interpersonal causes accounted for 9.1% of the social causes and less than 1% of the total causes and were related to association with deviant peers (one meaning unit indicated this) and being a victim or witness of non-family or non-specific violence. Institutional causes accounted for less than 1% of the social causes and less than 1% of the total – one meaning unit referred to the school environment.

33.9% of social causes and 2.5% of total causes could be attributed to family factors. Family-level causes were categorized as victimization within the family, parental characteristics, family environment/unspecified, and other. Family victimization included studies related to abuse and neglect, including:

Effects of child abuse (physical, emotional or sexual abuse and/or neglect) on development of psychopathology and behavioral problems (RFA-MH-99-002).
Parental characteristics included parental illness and how they coped with illness, psychopathology, and substance use disorders. For example:

Research conducted in the U.S. has suggested that children of HIV-infected parents – particularly those with symptomatic illness – experience higher rates of grief, depression, dysphoria, anxiety, post-traumatic stress disorder, irritability, social withdrawal and impaired cognitive performance than others (RFA-MH-05-008)

Family environment, characteristics, roles, structures, risk processes, parenting practices, and attachment were also considered relevant to the development of child mental health problems.

In general, RFAs did not discuss the embeddedness of families in context or the structured differences in risk and opportunities families face. Mechanisms by which family problems might translate into child mental health problems were also absent.

Contextual factors (environmental/non-specific social or contextual, community, cultural/ethnic, economic, gender/sexual orientation) accounted for 34.7% of social causes and 2.6% of the total meaning units, and include unspecified environmental, social, and contextual causes, as well as causes related to community, culture/ethnicity, economics, gender/sexual orientation, and multiple causes related to context.

Environmental, social, and contextual factors were typically non-specific as in the following example:

Research of interest includes factors underlying…social…development in children and adolescents that underlie problematic behaviors, maladjustment, psychopathology and diagnosed psychiatric disorder (RFA-MH-99-002).
Community and economic factors included devastation from AIDS, neighborhood environments and risks, and community poverty and rates of unemployment. Degree of acculturation was the only specific causes related to culture/ethnicity. Additionally, Latino females, and lesbian, gay and bisexual youth were considered to be at higher risk for mental health problems.

*Multiple social* causes accounted for 21.5% of social causes and 1.6% of the total causes and included contextual and family, family and interpersonal, and contextual and family and interpersonal causes. In general, even causes categorized as social did not discuss stratification of risk (i.e., for victimization), or multi-level causation, such as families being embedded in larger social structures.

**B. Proximal Causes of Children’s Mental Health Problems**

Proximal causes were even more focused at the individual level, accounting for 95.9% of causes immediately preceding the mental health outcome of interest. However *psychological* causes were more important than biological causes, with psychological causes comprising 65.2% of the total proximal causes compared to biological causes, which accounted for 12.6%.
Table 3: Presumed Proximal Causes of Children’s Mental Health Problems Identified in RFAs, 1992-2009, N=1,277

<table>
<thead>
<tr>
<th></th>
<th>Individual (N=1225)</th>
<th>Individual-in-Context (N=20)</th>
<th>Social (N=32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological</td>
<td>12.6%</td>
<td>Stress + Individual 100.0%</td>
<td>Interpersonal (Peers) 50.0%</td>
</tr>
<tr>
<td>Psychological</td>
<td>67.9%</td>
<td></td>
<td>Family 50.0%</td>
</tr>
<tr>
<td>Developmental</td>
<td>5.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral</td>
<td>9.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple</td>
<td>4.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

III. Results: Solutions for Children’s Mental Health Problems

RFAs were examined for text pertaining to appropriate solutions for children’s mental health problems. Several nodes emerged related to services and treatment, including research on service types, targets, processes, locations, and providers. While treatment types are the focus of this study, brief descriptions of the other treatment-related foci are also presented to illustrate the range of service-related research content in the RFAs.

A. Treatment Types

The central focus of the analysis of solutions was the identification of treatment
types put forth as appropriate interventions for children’s mental health problems. By examining treatment types, it was possible to determine the relative focus on individual versus social solutions for children’s mental health problems, as well as the comparative focus on upstream versus downstream social interventions. Treatment types are categorized as individual, individual-in-context, and social, upstream or downstream. A full list of all treatment types by category is available in Appendix F.

Thirty-three RFAs included text related to treatment types (see Table 1 above). Twenty-seven of these RFAs favored individual-level interventions to social ones, five included more social than individual interventions, and one contained an equal number of social and individual solutions to children’s mental health problems. On average, the RFAs in which individual-level interventions exceeded the social ones did so by 13.1 intervention types, while the RFAs where social interventions exceeded individual ones did so by 6.2 types on average. Though not as notably as with causes for children’s mental health problems, when individual solutions were favored, there again seemed to be a less balanced approach than when social solutions were favored.

RFAs that favored individual solutions were many; however two RFAs with multiple reissues accounted for 12 of the 27 RFAs with more individual than social solutions. Seven RFAs (RFAs 8, 20, 24, 25, 34, 38, 39) were related to developmental psychopharmacology; all of the solutions from these RFAs were pharmacological. Five RFAs (RFAs 23, 30, 31, 36, 37) targeted neurodevelopmental and neuroscience signaling in adolescence and its relevance to mental health. These RFAs included solutions of hormonal, neuroendocrine, and neurodevelopmental treatment and prevention, pharmacological treatment, and psychosocial treatment, as well as environmental
treatment and prevention. The remaining RFAs giving preference to individual solutions were diverse in focus.

When social solutions were favored, myriad types of interventions were proposed. The five primarily social RFAs focused on: interventions for disruptive behavior disorders (RFA 11), for which interventions ranged from changing seating arrangements, shortening assignments, providing parent education and support, and mentoring/tutoring, to non-specific prevention activities and prevention for specific ethnic groups; interventions for suicidal youth (RFA 12), including enforcing underage drinking laws and unspecified interventions to prevent suicide in youth with substance use disorders; and interventions for youth violence (RFA 15), including family support and parental supervision, as well as community policing, crime watch, and public policy. The only RFAs which explicitly mentioned upstream, universal prevention were focused on effectiveness, practice, and implementation in programming sites of the Center for Mental Health Services (RFAs 21 and 29). These RFAs also suggested service coordination, educational reform, and selective and indicated prevention. While several of these RFAs mentioned policy and preventive interventions, these were very non-specific, unlike individual-level treatments, which tended to be very specific, whether focused on biomedical or psychological interventions (see Appendix F).

Overall, individual solutions accounted for 77.8% of the total interventions identified within the 33 RFAs, individual-in-context interventions for 3.5%, and social solutions comprised 18.7% of the total solutions named in the RFAs. In all, 92.3% of all solutions were aimed downstream.

A total of 545 solutions (treatment types) for children’s mental health problems
were identified in 33 RFAs. Table 4 summarizes the results of the categorization of treatment types.

Table 4: Solutions for Children’s Mental Health Problems Identified in RFAs, 1992-2009, N=545

<table>
<thead>
<tr>
<th></th>
<th>Individual (N=424)</th>
<th>Individual-in-Context (N=19)</th>
<th>Social (N=102)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacological</td>
<td>58.0%</td>
<td>Residential/Group/Foster Care</td>
<td>100.0% Contextual</td>
</tr>
<tr>
<td>Biological/Medical</td>
<td>20.5%</td>
<td></td>
<td>Family</td>
</tr>
<tr>
<td>Psychological</td>
<td>19.6%</td>
<td>Selective Prevention</td>
<td>11.8%</td>
</tr>
<tr>
<td>Behavioral</td>
<td>1.9%</td>
<td>Indicated Prevention</td>
<td>4.9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interpersonal</td>
<td>3.9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Institutional</td>
<td>2.9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DOWNSTREAM TOTAL</strong></td>
<td>58.8%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonspecific Prevention</td>
<td>39.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Universal Prevention</td>
<td>2.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>UPSTREAM TOTAL</strong></td>
<td>41.2%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

i. Individual

As with causes for children’s mental health problems, individual solutions dominated RFAs, accounting for 77.8% of the total solutions identified. Pharmacological solutions were particularly favored, accounting for 58% of individual solutions and
45.1% of the total, followed by psychological solutions, which represented 19.6% of individual solutions and 15.2% of the total identified solutions. 1.9% of individual and 1.5% of total interventions were classified as individual-behavioral.

In a study on the effects of psychotropic medications on the developing brain, investigators were invited to:

Study possible toxicities of psychotropic medications, which are specific or more common in certain phases of development as compared with adulthood (PA-03-113).

Other biological solutions were also proposed, including the use of alternative therapies directed at regulating bodily systems in an effort to treat youth with mental health problems:

Test the efficacy and safety of promising alternative treatment approaches, such as dietary interventions or supplements, for youths with emotional and behavioral disturbances (RFA-MH-02-002)

In all, biomedical (pharmacological and other biological) solutions accounted for 78.5% of individual solutions and 61.1% of the total proposed solutions.

Individual psychological solutions included case management, skills training, day treatment, and individual therapy, among others. Many proposed topics of study were evaluations of interventions, such as one intended to evaluate a psychological intervention provided within schools:

…other more broadly implemented school-based interventions such as social or
cognitive skills training need to be systematically evaluated for their replicability across systems (RFA-MH-00-011).

*Behavioral* interventions made up 1.5% of the total, and were typically non-specific:

Interventions on pharmacologic approaches (individual and combination medications), behavioral and psychotherapeutic approaches are encouraged (RFA-MH-99-002).

### ii. Individual-in-Context

Solutions categorized as *individual-in-context* made up 3.5% of the total and included those that take place in a residential or group setting such as foster care, respite care, out-of-home placements, and group therapy. For example:

Funds for the CMHS program are authorized to be spent on services that are underdeveloped or nonexistent in most communities: respite care…therapeutic foster care (PA-00-135).

### iii. Social

*Social* solutions comprised 18.7% of the total solutions. 58.8% of social solutions were downstream, while 41.2% were upstream. Overall just 7.7% of all solutions were *upstream* solutions. Downstream social solutions included institutional, family, interpersonal, and contextual solutions, as well as indicated and selective preventive interventions. Upstream solutions included universal prevention and non-specific
Institutional interventions comprised 2.9% and interpersonal interventions comprised 3.9% of social interventions. Institutional and interpersonal solutions each comprised less than 1% of the total. Institutional interventions were classroom-related and included changing seat arrangements, allowing frequent breaks, and shortened assignments. Interpersonal interventions included peer support, tutoring, and mentoring.

Family interventions accounted for 15.7% of social interventions and 2.9% overall, and included family support, family therapy, parent education, management, training, supervision, and couples therapy. For example,

The CMHS Children’s Services Program, because of the diversity of services offered to communities, provides an opportunity to examine both the disseminability of already-established services (e.g., multi-systemic family therapies…) (RFA-MH-99-002).

Contextual solutions made up 19.6% of social interventions and 3.7% of all solutions, and include service coordination, community policing, crime watch, educational reform, policy, and enforcing underage drinking laws. One RFA asked, “Does greater enforcement of under-age drinking laws reduce youth suicide rates?” (PA-00-077).

Upstream solutions accounted for 41.2% of social solutions, but just 7.7% overall. Upstream interventions were mostly non-specific, such as,

The purpose of this PA is to encourage research to be conducted within the Children’s Services Program or SS/HS sites to assess the effectiveness of child mental health interventions (either preventive or treatment)…(RFA-MH-99-002).
Universal preventive measures were mentioned just two times:

…studies which examine the impact of specific…prevention models (including universal, selective, and/or indicated preventive interventions) on clinical, functional, environmental, service, or systemic outcomes for children, adolescents, and their families (PA-04-019).

While treatment types were the focus of the analysis, it is interesting to note that several other aspects of interventions were considered important topics of research, including treatment targets, processes, locations, and providers, discussed below.

**B. Treatment Targets**

Treatment targets represent the specific problems addressed by interventions referred to in RFAs and the individuals, groups, organizations, or systems which are targeted (as opposed to specific interventions which are the focus of treatment types). Intended outcomes were related to: adjustment, anxiety, cognition, co-occurring conditions, coping strategies, effects of abuse, emotion regulation, emotional resilience, functioning, future morbidity, judicial responses, neighborhood cohesion, police response/involvement, psychological distress, risks, school dropout, self care, self-destructive behaviors, sexual exploitation, skill development, social interaction processing, social isolation, stigma, strengthen support system, and violence. Individuals, families, gangs, peer networks, policy makers, protective services, social networks, and social services were considered targets of interventions.
C. Treatment Processes

Treatment processes include factors related to services, such as development and provision of services, organization/structure of services, barriers to service, and factors which might affect access or entry into service. Several factors were suggested that should be considered in the development of treatment models. Favored models were innovative or promising, based on developmental psychopathology or other theories, considerate of critical windows for intervention, undertaken in early childhood, culturally specific, faith-based, or family-driven. Additionally, dissemination, portability, implementation, and evaluation of model outcomes, quality, safety, unintended consequences, and client satisfaction were potential topics. Specific aspects of the provision and structure of services, such as engaging and retaining clients, matching clients with the correct services, integrating different services, combining or sequencing services, and assessing effectiveness of various treatment dosages and intensity were considered pertinent subjects. Potential barriers to services included organizational structure, culture, and climate, administrative, cultural, financial, and geographic barriers. Other factors recognized as affecting service entry and outcome included social norms, equity, privatization, Medicaid regulations, managed care, insurance coverage, systems of care, program accessibility, referral source, community factors, socioeconomic factors, gender, culture/ethnicity, family factors, and dynamics between caretaker and child. Individual factors affecting treatment initiation and outcomes included client motivation, cognitive capacity, attitudes, beliefs, help-seeking behavior, adherence to treatment, treatment resistance, attributional changes, and changes in expectations.
D. Treatment Locations

Several treatment locations were presented as relevant to service provision, including juvenile justice settings, classrooms, communities, schools, shelters, child welfare settings, homes, primary care offices, clinics, and foster homes. Research foci included: service patterns across settings; effectiveness/outcomes across locations including understanding how various aspects of setting might affect outcomes; efficiency and effectiveness of treatment model dissemination to various settings; assessment of model generalizability across locations; developing services in underserved areas and settings where some youth may be at higher risk; and providing safe communities and schools.

E. Treatment Providers

Several attributes of service providers were suggested as topics of inquiry. Provider attitudes, beliefs, motivation, skills, behavior change, and decision-making were suggested as potentially affecting treatment model implementation and sustainability or treatment outcomes. Additionally, it was suggested that organizational factors may influence these characteristics. Research related to training, management, and supervision of treatment providers was also a potential topic of investigation.

Specific counts of treatment targets, processes, locations, and providers were not tallied; however it should be noted that these factors represented a significant portion of
the text relative to interventions compared to specific types of intervention.
CHAPTER 7: RESULTS: PROGRAM OFFICERS’ MENTAL HEALTH BELIEF SYSTEMS

The interview portion of this study was designed to triangulate and explain the findings of the RFA content analysis. To reiterate, in Chapter 4, I demonstrated that children’s mental health problems derive very substantially from serious pathologies of family, community, and school relations, disproportionately related to poverty. In Chapter 6, I showed that in spite of the overwhelming evidence for the sociogenesis of children’s mental health problems, the content of RFAs resolutely avoids such issues, using myopic blinders to avoid confronting such realities in favor of focusing on intra-individual problems. Because RFAs are the mechanism through which the federal government funds mental health research, it is vital to understand why the individual endures as the preferred unit of analysis and location of intervention. Thus, the second research study question and related hypotheses are:

**Research Question 2:** What forces explain the content of RFAs and PAs related to children’s mental health?

**Research Hypothesis 2a:** Authors of RFAs and PAs related to children’s mental health will articulate a reductionist perspective on the causation of, and appropriate interventions for, children’s mental health problems.

**Research Hypothesis 2b:** Authors of RFAs and PAs related to children’s mental health will identify and/or manifest multiple “nonscientific” factors that influence content.

In the exploratory interviews, I investigate potential explanations for the reductionist and downstream focus of RFAs related to children’s mental health. One
possible reason is that the authors of the RFAs embrace the individual as the appropriate level of intervention, not considering social and structural preventive measures when they construct calls for applications. Therefore, relevant to Research Hypothesis 2a, data were coded for both RFA authors’ child mental health belief systems, and for respondents’ explicit explanations for the individualistic, biomedical focus of RFAs discovered by the content analysis. I first analyze points of view given by program officers relative to children’s mental health problems to determine if they believe that the causes of these troubles can be attributed to factors that lie at the individual level, and that solutions should be aimed toward treating individuals who have already manifested symptoms. I also consider whether respondents seem to reflect on their own perspectives, or if these remain unexamined assumptions. Next, I analyze program officers’ commentary on the content of RFAs to determine what factors they think are responsible for the substance of RFAs. Results for these two topics are presented in the current chapter.

A second possible explanation for the content of RFAs is the influence of extra-scientific factors on the practice of science. Questioning program officers about the process of RFA construction reveals data germane to Research Hypothesis 2b, which are presented in Chapter 8.

I present below results for interviewees’ mental health belief systems, including commitment to the biomedical model and recognition of environmental factors. I then provide respondents’ explanations for the biomedical, downstream focus of RFAs. Finally, I discuss these results relevant to my hypothesis that program officers will articulate a reductionist perspective on mental health.

As described in Chapter 5, five National Institutes of Health program officers
comprised the sample. All respondents were listed as scientific contact persons on one or more of the 39 RFAs related to children’s mental health identified for the content analysis.

I. Interviewees’ Mental Health Belief Systems

Even with a small number of participants, the story of program officer belief systems is not an easy one to tell. I hypothesized that program officers would express reductionist views on the causes and solutions for children’s mental health problems. While several respondents at times expressed potently reductionist views, in particular ones embracing biomedical explanations for mental health problems, even the most avowedly reductionist admitted that environment plays some role in the genesis of mental health troubles and potential solutions to address these issues. The following quotations demonstrating interviewee mental health belief systems are organized separately according to biomedical and environmental factors addressed by respondents, but this does not indicate mutual exclusivity of these ideas. All participants expressed both views in our discussions, but to different degrees.

Throughout the quotes that follow, some text has been placed in italics for emphasis.

A. Commitment to Biomedical/Genetic Model

On face value, The National Institutes of Health is framed by the medical model:
The tagline on the NIH website is “The Nation’s Medical Research Agency” (NIH 2010c). But to what extent do program officers at NIH take up this model, especially as it relates to mental health, its causes, and appropriate solutions to its troubles?

A. Unequivocal Acceptance of the Biomedical Model

Several quotes demonstrate the salience of biomedical thinking among NIH program officers. One response suggests that support for the biomedical model is unequivocal in the minds of NIH insiders, implying that reflection would be pointless:

L³: Do people at NIH question the medical model?
R⁴: No, I never hear anyone question it because we all believe in it.⁵

The biomedical nature of the approach to mental health at NIH was evidenced in many ways throughout my conversations with program officers. Their thoughts about the nature of mental health and how it should be studied revealed how entrenched the biomedical model is, at least for these respondents. In the following example, the respondent elaborates a biomedical and genetic perspective on mental health very articulately, and in great detail:

3 Lynn, interviewer
4 Respondent
5 This portion of the conversation was not recorded and this interaction is paraphrased.
L: So when you talk about pathophysiology what kind of things do you think are important in the genesis of psychopathology? Beyond genetics, we’ve talked a little bit about that. What kinds of things do you think trigger those types of reactions? Or is that still kind of in that unknown area?

R: Well you have to remember who you’re talking to. So you’re talking to a neurobiologist who’s a reductionist and a scientist and I think that my behavioral science colleagues and I both would agree that serious mental disorders are biological disorders. Period. So schizophrenia is not caused by a refrigerator mother syndrome, or some kind of life stress event. It doesn’t happen that way, there’s something wrong at birth. There is absolutely, these are brain disorders, pure and simple. Now what exactly causes the brain disorders, now we’re going to diverge. So I’ll give you my perspective. So these disorders are all polygenic disorders, so what that means is that there isn’t one gene, one disease. So it’s not like you have gene X got screwed up so now you’re going to have schizophrenia. It doesn’t work that way. There are a whole bunch of genes that control various aspects of brain function and screwing up any one of them in any bunch of different combinations of which we’re not sure yet what they might be, but any number of combinations can put you at risk for bipolar disorder, schizophrenia, PTSD, anxiety, whatever it is. Then other factors, like environmental stress, or like prenatal infection in utero, or even perhaps other things like environmental toxins can give you kind of a double hit and trip you over the edge. But you’re not going to become schizophrenic just because of environmental impact. You have to be predisposed to it; you have to have a biological susceptibility to it. So you know for example, schizophrenia affects 1% of the population. Period. So 1 in 100 people no matter where you live, who you are, where you were born to, when you were born, are going to be schizophrenic and that is a biologic disorder, it is a genetic disorder, and it has a complicated manifestation, but it is purely a brain disease, and the same thing with autism, and we know that much. It’s just which genes, which processes, and which mechanisms in the brain are affected and then what other factors might influence that…

Like the first example, this respondent’s orientation toward the origin of mental health problems is unambiguous: The serious mental disorders are biological brain disorders and there is no room for discussion of this – it is a fact. Biological susceptibility is absolutely necessary for the expression of disease, and this is evidenced by the universality of diseases like schizophrenia. Far from seeing the study of mental health problems at the most extreme micro-level as problematic, this program officer even uses
the term *reductionist* in self-reference.

Respondents seem to embrace the biomedical model as the legitimate basis for institutional organization and as the undisputed target for investigation despite recognition that there is no known pathophysiology of, or biomarkers for, mental health:

L: And what do you see as the most crucial unanswered questions in mental health? Are they genetic questions?

R: Gosh, we don’t have time for that. That could take a workshop that goes on for months. Um, so what are the biggies? Um, so let me give you the biggest. *So the mental disorders do not yet have a known psychopathology*. So in neurology, if you have a stroke, it’s obvious that some cells died and why they died is obvious; what to do about them is not. If you have Parkinson’s disease, we know what causes Parkinson’s disease. We don’t know why or how to control it but it’s really obvious what happened. *So if I ask you what’s wrong in a schizophrenic brain, you can’t tell me, all right? The data isn’t there yet. We have lots and lots of data to tell you what we think is wrong*. What’s wrong in people who have bipolar disorder? What’s wrong in people who have depression? *We don’t have yet, in 2010, a definition of what’s wrong in the brain of these people who have serious mental disorders. We don’t, and that’s like #1*. So what is the pathophysiology of these diseases is still unanswered. And the next question is, in most medical disorders, we have measures of disorders that aren’t purely behavior. In mental disorders, behavior is the only tool to know whether somebody has schizophrenia or not; in other disorders you can take blood, you can take spinal cord fluid, you can take urine, you can take all these other biological measures and say aha, you have this particular problem, or you have biomarkers for cardiovascular disease, and we don’t have that in mental disorders. *So having a biological measure would be the holy grail*. That’s the holy grail. Knowing what the pathophysiology is is step one, step two is knowing what the biomarkers are for our diseases, and step three is once you have those two things in place, new therapeutics is the third and final holy grail. And the fourth obviously would be prevention, to be able to prevent early on.

In this respondent’s mind, the unanswered questions in mental health are all biological ones. Scientists don’t know what’s really wrong and can’t define or measure it, but are certain still that it is a brain disease. Therefore, research should focus on biology as “the
B. The Biomedical Model as Functional

In the preceding quotes, the biomedical model is explicitly accepted by respondents and expressed as a matter of fact as an explanation for mental health problems: These respondents seem to accept the biomedical model on “scientific” grounds, despite its shortcomings. But program officers also view the model as functional to the treatment of mental disorders in the sense that it allows for treatment coverage by insurance plans:

R: For a long time in that there was not insurance parity given to mental disorders, nor was there to drug abuse treatment, and I think that some of those RFAs and PAs reflect a desire to be associated with the medical model to promote payment parity with insurance companies and such. And now that that’s actually written into the law, it’ll be curious to see if that continues to show up.

R: [Referring to belief in medical model]: Problems become easier to fix because insurance provides for it – it’s a way to pay for it.

Association with the medical model is also viewed as a way to reduce stigma. By calling mental health disorders medical problems, the perception of children with these problems as “crazy” can be shifted to a paradigm in which they are “sick”:

R: But if you really want to, and if you look at the advocacy groups, everybody wants their child to be treated, and it’s in their interest as well to have a medical model because then it’s…the other thing that’s happened previously is that these people who had, these people who themselves are taking psychotropic meds, or whose children actually needed them were being very stigmatized, they’re crazy,
they’re not normal, they’re not like us, we can take care of our own problems and as soon as you can put a medical handle on it, it changes the way you are perceived.

The medical model receives further support because pharmacological interventions are recognized as the gold standard for mental health treatment. In the following example, the program officer states that mental health treatment essentially consists of medication; pharmacological intervention is considered the way to help someone who is suffering. The only other therapy mentioned is “talk therapy,” which, according to this respondent, requires a lengthier wait until results are evident, making it less attractive as a remedy:

L: …When I look at requests for applications related to children’s mental health, and this has been found in other areas, too, the causes that are discussed in the RFA background and also the solutions that are proposed are overwhelmingly at the individual level and, you know, mostly focused on biological factors. So from your experience, what do you think might explain that?

R: [Laughs] The DSM-IV. Because I think that, all of mental health, the entire mental health field is treated with psychopharmacology and if you don’t have a druggable disease, you’re not encouraged to identify one, because if you can prescribe an ethical pharmaceutical, you can presumably help somebody. Things like talk therapies work but they take a whole lot longer. I think people, it’s just, behavioral pharmacology is really it as far as mental health goes.

C. The Disappearing Environment

Another way that program officers demonstrate commitment to the biomedical model is their tendency to use highly specific language when describing it, while not elaborating upon, or even mentioning, potentially relevant environmental factors which
may be involved in mental health causation. Under these circumstances, the environment and social factors potentially implicit in the genesis of mental health problems become marginalized to the point of invisibility. In the following excerpt, the respondent uses detailed language to describe the specific processes purportedly involved in the development of mental health problems: Genes code for proteins and proteins affect cells. The missing link is exactly what the cells are doing. At the same time, the program officer fails to mention any potential environmental factors that could disrupt a genetic sequence:

L: Do you think particularly for schizophrenia or autism that the – what would be most effective? Finding those genes and then having some kind of gene therapy? Or if we know that there’s environmental triggers or various environmental factors that can affect those genes, where do you think the best intervention would be and what kinds of interventions would you do if you locate the specific genes?

R:....So, for example, in schizophrenia we know that schizophrenia is a polygenic disease, so identifying all the genes that might be implicated in schizophrenia is step one and a corollary, this is not necessarily a linear thing, like step one and step two, we’re doing them simultaneously is to look at what those genes code for. And the genes code for proteins and the proteins do something in the cell, right, so once you have the gene, you want to know, well what’s that gene code for and what’s that stuff that it codes for do in a cell? A lot of times you find genes in which you don’t know what the proteins they code for are actually doing in the cell because that part of biology has somehow been missed and it is don’t know. Now there’s a famous gene in schizophrenia called DISC1, you may have heard of it, and so DISC1 was discovered in a Scottish family pedigree that had high incidence of mental disorders and it turns out they had this translocation disruption in their chromosomes – chromosome 1 and chromosome 11 kind of get cut during gametogenesis and right at the cut point, there’s a gene in there called DISC1 and every one of the members of the family who had mental disorders, whether it was schizophrenia or bipolar or depression, had this disrupted schizophrenia phenomenon. And so that identified that gene and nobody knew what the hell that gene did and then it was discovered that this gene codes for a master scaffolding protein that coordinates the distribution of just about everything in a neuron and it’s like WOW. So it’s like this thing has a huge role in a lot of stuff that the nerve cell does and if you mess with that gene and disrupt
DISC1 protein you get a lot of different effects, and all those different effects could be interpreted when you look at the behavior of an individual with a disruption as bipolar disorder or schizophrenia or depression and that gene could be disrupted along with lots of other polymorphisms in your genome that combine to give you a phenotype for a disease that DSM-IV calls bipolar or schizophrenia, but it all started with a common background in genotypes. So what we need to do is then know what all of the pathways are.

In this example, the program officer seems to be describing an epigenetic process, that is, the chromosomal disruption referred to may be an example of an inherited phenotypic expression that did not change the underlying DNA structure. If this is the case, environmental influences would be the necessary deciding factor in expression. But instead of suggesting that it is important to understand under what environmental circumstances genes may be expressed, the respondent is focused more and more on the micro-level of the genes involved.

Even when explicitly prompted to talk about the environment, as in how a recent focus on the gene-environment interaction might lead to cross-discipline collaboration, the discussion comes back to biology and the environment becomes imperceptible. In the following interaction, the respondent first talks about neuroscience as being the (unquestioned) basis for the National Institutes of Health (NIH), then, when discussing relevant disciplines which might collaborate on gene-environment initiatives, the program officer mentions that one scientist has to wear the hats of neuroscientist, cell biologist, physiologist, and anatomist to answer these questions, but does not mention a single non-biomedical scientist as relevant to the gene-environment question. Later in the quote, when the respondent mentions epigenetics and the environment, only genes and biology seem relevant:
L: What about, I know there’s more of a focus now on the gene environment interaction or epigenetics, do you see more collaboration with kind of the trend in that, or, do you see a trend first of all in that direction, and do you see more kind of cross-disciplinary collaboration because of that?

R: Well yes. And the reason for it has to do with the science. So in biology, and especially like for example in neuroscience, and neuroscience drives the mental health institute, the child mental health institute, the neurology institute, that’s the science that undergirds all of the questions in our diseases. And when you talk to a neuroscientist you say, are you a cell biologist, are you a physiologist, are you an anatomist and they’ll usually say, well, yeah, I’m one of those things but really I have to be everything because the nature of the question demands it. So in order to figure out how cells work, how circuits work, how regions of the brain work, and how the environment interacts with the brain and the brain responds to the environment, you kind of have to marshal all of these techniques in order to be successful. …And so people really want to know not only which genes are associated with disease but how do genes get controlled by getting turned on and off and regulated, what are the mechanisms of that, and then how does that process get influenced by environmental factors, also called epigenetics and epigenetics has a lot of other connotations besides just environmental factors, and then how does that manifest itself in the functioning biology and then ultimately the functioning behavior that we see in human beings. So yes, that is truly a multidisciplinary and highly interactive process.

Thus, for this program officer, cross-disciplinary collaboration involves only scientists interested in the human body and its components, and epigenetic interactions are framed as intra-individual problems.

D. The Environment Becomes Part of Biology

As demonstrated above, respondents tend to discuss biology in specific, technical terms, while ignoring or minimalizing the role of the environment. Another statement illustrates how the environment actually becomes part of biology when talking about
scientific processes: Rather than thinking of the two as separate or intertwined influences, they both become subsumed as biological in nature, again causing environmental influences on mental health to disappear. In the following example, the respondent discusses how “receptor subunits” act within a cell culture, and wonders about whether they will act similarly in living beings. The cell culture is an environment, manipulated by humans, but the problem is framed entirely in physiological terms. This program officer acknowledges that brain function can be changed, that you “can affect” it, which necessarily requires intervention that is external to the body, much like the way that social circumstances might affect the brain; yet this is framed in terms of physiology:

R: It’s something that I don’t think many people are doing very much of, and I heard, it’s how receptor subunits come together to form new entities that are regulated differently than either subunit by itself, and so it’s really powerful because these things are fluid in a membrane so they can form complexes with different receptors and they become what they call dimers or heterodimers, which means multiple units acting together as a unit, and what’s so nifty about these is that if these actually are, if these things actually exist physiologically and most of these things are shown not physiologically but in cell culture and stuff like that. And it’s a new way of looking at how neurotransmitters are regulated, how brain function can change or how you can affect brain signaling or brain functioning, which is tremendously exciting because it opens the possibilities for new targets for therapeutics. It really tells us how the brain might work in real life, how does it sort through all the signals that it sees on a second-by-second basis, And so these are physiologic constructs that may or may not actually occur, I mean they have a physiologic, you can get them to do stuff, but do they work in a living critter?

It makes sense to question whether the relationships formed in the culture will work in “real life” in the complex environment of the human body, just as it is reasonable to try to understand how the body reacts to its environment. But the environment becomes just part of the process to uncover biological aspects of the question under study.
Thus far, the role of the environment in mental health is getting short shrift from respondents. Next, I will review respondents’ understandings of environmental influences on mental health. How do program officers discuss the environment when they recognize it as relevant to the discussion of mental health?

B. Recognition of Environmental Influences on Mental Health

Even when respondents discuss the environment, biology seems to edge in to the discussion, especially as the target for intervention using pharmaceuticals. However, there are a few notable exceptions which deserve attention.

i. The Environment Doesn’t Stand Alone

When discussing solutions for children’s mental health issues, program officers rarely mention specific solutions that recognize the role of the social environment. When respondents do bring up environmental interventions, they are typically vague, and they don’t “stand alone,” but are accompanied by pharmacological treatments. In the following quote, “environmental,” “family,” and “community-based” therapies are mentioned as potentially important for schizophrenia, to delay or prevent the onset of symptoms, or to ameliorate problems after onset. However, these interventions are mentioned in conjunction with psychotropic medications, not as sufficient in and of themselves. Additionally, is not clear what environmental or family or community-based therapy entails; these interventions may be delivered entirely at the individual level:
R: … And so you say now OK, now we have a biologic predisposition towards a disease and you say, well how do we develop therapies for it? Early on in development, and this is another thing we’re doing, is we’re looking at what’s called the schizophrenia prodrome. We’re looking at at-risk kids who come from families with a high incidence of schizophrenia and say do we see anything in these kids way before the onset of the disease. So schizophrenia is an 18-24-year-old general age of onset disorder. You don’t really diagnose it in 5, 6, 7, 8, 9, 10, 11, 12-year-olds. You diagnose it at 18 when somebody becomes fully psychotic but it’s been known for a while that by the time they become fully psychotic the disease is probably way, way, way progressed. So if you go back and look is there any antecedent to that? Is there anything we can see really early on in development that might give a hint to that, and if you see that, is it possible that we could give, either psychotropic medications or that we could do some kind of environmental or family or community-based therapy to either delay onset of symptoms, prevent onset of symptoms, or ameliorate the severity of the symptoms and so we’re at the stage where we’re identifying kind of premorbid conditions in early development.

Another example also illustrates the dependence on psychotropic medications as the preferred treatment method and the lack of attention to super-individual interventions.

In clinical trials, “talk therapy” is evaluated separately from, and in addition to, medications. However, there is no mention at all of more macro-level intervention like those focused on the community or family:

R: [Referring to belief in medical model]: But large clinical trials always couple medications with talk therapy, never medication alone.

Another respondent states that the gene-environment model is the accepted model for mental health. But further probing demonstrates that thinking about mental disorders as biological may lead to a focus on research that is substantially about the brain, not equally about biology and environment. In the following interaction, first, I ask about causes for mental health problems, and the respondent embraces the genetic
predisposition-environmental interaction perspective:

L: What do you think are the causes for mental health problems in children? When you think about what things are generating these problems, what are the causes that come to mind?

R: Well generally speaking now, the conceptualization of these kind of mental health disturbances is that there is oftentimes a genetic predisposition in general terms that is very evident for certain conditions like autism, attention deficit disorder for instance. And the interaction of these genetic predispositions with environmental stressors - that can be early life adversity, it can be substance abuse during adolescence and so forth. So it’s a gene-environment interaction model that has been proposed and then basically proven for a variety of conditions in the last 15-20 years and now is what dominates the thinking.

Because there is recognition by the program officer that environment matters to mental health, it seems reasonable to expect that mention of solutions to ameliorate mental health problems will acknowledge this, but instead the respondent focused on brain function as a necessary aspect of research to understand the problems:

L: And based on that, what do you think are the appropriate solutions for solving the problems of children’s mental health?

R: Well from my perspective, it’s to understand better what are really the causes and the mechanisms so that treatment can be developed that are more targeted to the specific needs of individuals. So I think we have treatments already, these treatments by and large of modest to moderate efficacy generally speaking in really changing the trajectory of psychopathology so we need more effective treatments, and to develop those we need better to understand the mechanism of the pathogenetic underlying processes so I think we need to integrate more research that is coming from an understanding of how the brain functions, into how these mechanisms can go wrong and can produce the symptoms that we call psychiatric disorders.
When I ask for further solutions, those beyond the biomedical, the solutions are still individualized, this time psychologically. Psychotherapy, or “talk therapy,” seems to be the next most widely accepted treatment after pharmacology. It seems that, in general, especially without prompting, it is not easy for the respondents to come up with environmental or social factors that may cause children’s mental health problems or solutions that may be aimed at a macro-level:

L: How important do you think other types of therapies are besides pharmacological therapies? How important do you think individual therapy or those that focus on environment are in terms of solving the problem of children’s mental health?

R: Very important for certain conditions. There are a number of studies already proving for instance that the use of psychotherapy, like cognitive behavioral therapy, is certainly as effective as medication and sometimes more for obsessive-compulsive disorder and for anxiety disorders in children, so this is very important information. Even in conditions like Tourette’s for instance, there are forthcoming data that indicate that behavioral interventions are very effective. So there is strong evidence that non-pharmacological intervention is a really critical component of the management of psychiatric disorders in children.

ii. The Exceptions

Although even the discussions of environmental factors seemed to come back to biology, or other individual-level factors, there were a few exceptions which I note below.
a. Potential Areas of Study Involving Social Factors

Social environment was not entirely ignored by the respondents; environment was recognized, including the role of family as potentially protective against disorder. In this example, the program officer, in describing how a gap in knowledge in a specific area might trigger the development of an RFA, suggests that it is a logical possibility that someone else (someone in my field, for example) might want to study social factors relevant to mental health:

R: So you say, you know if we had more studies, on you know, in your field for example, maternal-infants dyads and the bonding process and how that is protective against stress disorders later on in life, it would really help and you know we only have a small number of researchers who do that, maybe we should have more.

This respondent suggests that maternal-infant dyads may be an area where very few researchers are conducting studies, and that if so, this would be a potential area for augmentation through the RFA process.

b. Social Construction of Diagnoses

Another respondent provided a hint that there is recognition that diagnoses are influenced by social factors. While this is different from saying there is a social cause of ADHD, it nevertheless is an acknowledgement that the processes involved in the construction of mental health problems are not entirely “scientific”: 
R: When you look at kids, I find it alarming that the number of kids diagnosed with ADHD keeps going up. And I think that a lot of that is, and you as a mental health professional will probably disagree with this, but I think that it’s not necessarily a reflection of an actual increase in numbers but a lack of patience by the parents.

c. HIV/AIDS

The major exception to the tendency among program officers to offer very little description of social factors was from one working currently primarily in the area of HIV/AIDS research, not mental health (although, like all participants, this individual was listed as a scientific contact person on one or more RFAs related to children’s mental health). The following example demonstrates this more nuanced view of social factors relevant to causation and prevention:

R: Doing network research is, and to get clever ways to understand how people interact within their social networks and within their sexual networks plays a tremendous role in how efficient transmission will be in those populations because it’s all a matter of with whom you’re having sex and how risky the partners are or who you’re sharing needles with and how risky those people are and so it’s not just the levels, you could exhibit a lot of risky sexual risk behaviors and have very low probability of contracting HIV because you’re not interacting with groups of people that have high background prevalence of infection, there’s not much infection there, so the probability, even though you’re doing, you’re exhibiting the behaviors, you’re not in contact with high risk people.

 Coronary heart disease has very high prevalence rates in minority populations. Well if you go into the supermarkets in neighborhoods where there’s a high concentration of minority population the food type that’s being sold at these markets are not necessarily the most nutritious and best food that they should be eating. If you change the nature of the food with social marketing, you cannot just
change it overnight but you can do it slowly using social marketing to encourage people to eat different types of food. The only thing that comes close to that in HIV research are issues dealing with legislation issues like changing a law that is hindering people from engaging in healthy behaviors or more health. There’s a lot of paraphernalia laws, which is it’s illegal to carry syringes and you can go to jail so people don’t carry the syringes and when they go and buy their drugs, they use whatever syringes are available at the location they’re buying drugs or the shooting gallery or whatever and the reason they’re not carrying sterile needles is if they get caught with it they’re going to go to jail and they want to avoid going to jail.

This respondent’s comments are encouraging to advocates of social factors research:

There is recognition that social interactions and socially determined risk factors matter in the transmission of the disease, that changing behaviors requires changing access to healthy choices, and that legislation has the potential to impact disease transmission rates. Despite being the only respondent to provide much detail regarding social factors, this program officer also acknowledges that there are few known interventions that can be implemented at a structural level to decrease the spread of AIDS. A lack of known interventions and the difficulty of implementing macro-level interventions are discussed in more detail below.

In the next section I review program officers’ responses when asked to specifically identify explanations for the intensely individualistic focus of RFAs. Why are social factors so absent from RFAs related to children’s mental health?

II. Explanations for Reductionist RFA Content

Responses to questions inquiring why RFAs fail to recognize social and upstream
factors fall broadly into several categories: 1) the framing of NIH research by the medical model; 2) difficulty in controlling structural interventions or controlling for social factors in research; 3) disciplinary issues, including the division of responsibility for dealing with different levels of analysis, and lack of sociological representation at NIH; 4) not having enough knowledge accumulated about social factors to have a research program; and 5) the belief that environmental factors don’t matter for mental health.

A. The NIH Biomedical Framework

The biomedical framework for research at NIH is offered as one explanation for the lack of focus on social factors found in RFAs. Notice that like the program officer in one of the preceding quotes, the respondent in the next excerpt uses the word reductionist, suggesting this is a common term used to describe the nature of scientific work at NIH:

L: So I obtained this sample, and I looked through them and what I found was that the vast majority of causes for children’s mental health that were posited were individual in nature, for example genetic, biochemical. Very little…

R: Neighborhood?

L: Exactly.

R: …I think a lot of it comes from the sort of reductionist way of thinking. That sort of, and you know there is a strong biological underpinning to a lot of NIH, but then again there’s gene-environment are talked about a lot, but I don’t know how much is actually done.
This quote may also offer another important insight into the content of RFAs. While this program officer hints at structural issues, including “neighborhood” which may be related to children’s mental health, the respondent also implies that discussion of gene-environment interactions may be just talk, not actually followed by action in terms of investigation of environmental factors related to children’s mental health.

B. Control

When asked why there was not more of a focus on social factors, multiple issues related to control arose – the difficulties of implementing structural interventions, lack of power and authority to make social change, and controlling for social factors in research. It is clear that program officers feel that doing intervention on the structural level is difficult. It is even hard to sell despite the acknowledgement that this could bring about positive results, and, in this case, the desire to do so:

L: Do you have an opinion of whether there would be a benefit to having more of a focus on social factors?

R: Since I was in branches that tried to do that, I guess I have sort of a bias towards trying to do that. But it’s, it’s hard to do, it’s hard to sell that, it just is. And I’m not sure of all the reasons.

When asked about whether trends toward examining the gene-environment interaction might change the focus to be more cognizant of environmental factors, again the fact that it is difficult to do this is named as a reason, in this case the difficulty in manipulating the
environment, as opposed to the relative ease of addressing individual risk factors:

R: I think it will stimulate an interest in giving more credit to the environment than it currently gets. The gene-environment initiative that we’ve had over the last years at has definitely given more of a presence to the environment’s drastic impact, given certain genes express themselves or not given their exposure to the environment, so people are realizing – most people have always known the nature nurture thing – it’s like you get that in 101 undergrad biology. You never really focus on the environment and how to manipulate that. I guess it was easier for them to think about addressing individual risk or vulnerability factors than actually take on more macro-level issues, I don’t know.

Another respondent was more specific about what types of things would need to be changed at the structural level to promote mental health, and that, in addition to being complicated to modify, those individuals responsible for addressing mental health issues just don’t have control over these things:

L: OK, well I recently looked at all the RFAs I could find back to 1992 related to children’s mental health and I found, after I did a content analysis, that the vast majority of causes that were posited for children’s mental health problems in the RFAs were individual in nature, so for example, genetic, biochemical, or psychological, as opposed to being related to the environment, or experience, or context. And also that the solutions for children’s mental health were the same – individual therapy or psychopharmacological interventions as opposed to upstream preventive interventions and I just wondered, based on especially this new, newer focus on gene-environment interactions why you think that would be the case, and why there isn’t more of a focus on social arrangements in terms of the research, where the research is going and what type of research is ongoing?

R: That’s a good point, and actually I don’t know, I don’t have an answer to it, it’s a good question. It’s possible that it’s much more difficult to make changes to the social situations, social environments, and also because mental health treatment or prevention is typically dealt with by mental health specialists, and mental health specialists are not really experts in changing social environments, they are experts in changing symptoms of individual patients and so that’s why, I think. But you know when you get to address issues such as crime in certain
neighborhoods, poverty, unemployment, those are big issues that are not under the control really of psychology, psychiatry, social workers.

In this example, the program officer makes the connection between larger structural issues and mental health, and concludes that addressing these issues requires policy intervention, but that mental health specialists aren’t trained to do this. Program officers do express frustration at this lack of control over social factors in their work:

L: Do you think others at NIH who are focusing on mental health see it as problematic that they aren’t able to address these other factors?

R: I think that’s my impression but even clinically seeing patients there’s an element of frustration that we cannot change sometimes the social situation – there are factors of course that cannot be controlled. That is an element of frustration.

In addition to being judged too difficult, making structural change is also considered a slow process. One respondent uses a public health prevention example to discuss how changing rates of disparity in coronary heart disease requires not just offering healthier foods in supermarkets, but marketing these foods:

R: …Because you can’t, in the example of the food and supermarkets, you can’t just change it, they won’t eat it. So you’ve got to have social marketing that goes with that to slowly change that and get more people to be to accept the types of food that they’re eating. So it’s not going to be an easy fix, but if you find what would make a difference then it’s a matter of how do we go about implementing that, changing that major structural thing that’s having adverse effects.

Another way that both difficulty and control are relevant to the framing of RFAs in individualistic terms is the struggle to control for social and human factors in research:
R: So we have an entire branch that’s devoted to behavior and cognitive stuff. *My branch is basic functional neuroscience so I don’t really deal with anything like that and the less I deal with that, the happier I am because, no well it sounds funny, but I really like things that you can control and quantify and if I’m going to do an experiment, I’d like to have the most rigorous control that I can. I cannot always do that in a social type of thing because *if you’re using people, you don’t control what they eat, you don’t control what time they go to bed, and you don’t control who they play with, and I think that all those things are really important variables in the kind of response that you get. If I’m dealing with a rat or a mouse, I know what stage of the estro-cycle they’re in, I know pretty, usually within an hour, how much they’ve eaten, you know all those kinds of things, whether they’ve been housed socially, if there’s a dominance hierarchy, you know. There’s all this stuff that people bring to the table that’s just really difficult to control for.

This respondent is uncomfortable with the complexity brought to research by human choice. It is indeed difficult to assess and measure these factors, but, again social factors research seems to become marginalized due to difficulty. The program officer mentions that these things belong to a different branch, one distanced from neuroscience. This example also touches on the second explanation for the lack of focus on social factors in RFAs – issues of disciplinary responsibility.

### C. Disciplinary Divisions

Another explanation for the lack of focus on social factors has to do with institutional and disciplinary divisions. This respondent claims that some NIH institutes do focus more on social factors relevant to mental health:

R: Some institutes have more interest than others on it. NICHD has a group that does a lot of demography and they have a big strong interest in that. NIMH, and
us to a certain extent as well, have interest in doing that so if someone comes up with an RFA that asks to join the RFA we would be inclined to join or if we issue one we could ask the others to join our RFA like NIMH and NICHD would probably be the two institutes that have a strong interest. They’re not as uniquely biomedical as NIAID, National Institute on Allergies and Infectious Disease, they’re very biomedical in nature and they don’t do a lot of behavioral or structural interventions at all.

Another respondent also indicates that social factors research takes place elsewhere in NIH:

R:…*We have a very rich area of research that deals with these issues, social issues and their influence on, both on mental illness, and on services, because definitely these factors not only are risk factors for developing mental illness but also negative factors for treatment because adherence to treatment is impaired by these factors and so there is an entire area of research to try and increase the uptake of evidence-based treatment and preventive intervention in the community.*

L: Would that be found more in the adult mental health focus?

R: Both, I think both, there is a lot of research in juveniles for instance, so I think in both areas, *they belong to services research branch* so I don’t got a direct familiarity with this project but I know that it is a substantial amount of research in this area.

**D. Sociology Not Represented at NIH**

Another disciplinary explanation for the lack of attention to social factors in RFAs is that sociology is not represented well at NIH:

R: *I’m not sure; it may be that other disciplines have never gained a toe-hold, or they didn’t interact that much with NIH or ADAMHA institutes or people aren’t so much from those disciplines. I mean off the top of my head, the number of sociologists at NIDA, I don’t know – there are a lot of people with a psychology background but I would say… So it really, some of it is the types of disciplines*
that people come from.

This respondent suggests that the presence of sociologists is required in order to include social factors broadly in research relevant to children’s mental health.

E. Not Enough Known

One program officer not only assigns social factors research to another division, but adds that there just might not be much to do in an under-researched area, or just not much known about it. Rather than considering that perhaps underrepresented areas of research are marginalized due to power differentials between disciplines, or are areas where important discoveries could be made, the respondent instead states that there is “very little to do” suggesting that these areas are unimportant:

R: My colleagues that are in the division of services and intervention research – they know a lot more about prevention. But generally, if there is a deficit of work in a particular area, it probably represents the fact that there is very little to do or known. So it’s not because we aren’t focused or aren’t trying, it’s because it’s an area that just has so little in it it’s so hard to make progress in it and we don’t know very much about it, and so we need to lay the groundwork on a more basic perspective, or a more normal pathway in order to develop enough data to be able to begin asking intervention questions, and that probably reflects that.

F. The Environment is Not Important

A final quote on disciplinary division of responsibility drives home the thinking
of one respondent relative to the importance of environmental influences on mental health – the environment is trivial and genes determine everything:

L: Yes it does. Do you think there’s a recognition in your division, or in other divisions like your division, of the environment but you just you have, like you said, the division of intervention research would be more…

R: Yeah, you’re talking. Yeah, they would handle that. There’s a lot of recognition of that. You’re talking to a reductionistic biologist, um you know, I think the environment is trivial. And there’s people who would look at me like you idiot, you know nothing about human behavior at all, why are you talking to this poor woman from Case, you’re distorting everything that we do and maybe you should just be quiet. You know, so it depends on who you talk to. I’m a hard-core biologist and I think everything is deterministic at the genetic level, it manifests itself through biology, and yeah, there’s a lot of environmental influences on how genes get expressed and how biology works but you know it’s like stress doesn’t cause schizophrenia period in my mind.

III. Summary and Discussion

In this chapter, I presented the results of interviews with National Institutes of Health program officers who had served as scientific contact persons on one or more RFAs related to children’s mental health. Program officers are foremost experts on scientific subject matter and possess substantial power in dictating science policy in their specific domains. These interviews were designed to triangulate and explain the results of the content analysis of RFAs which revealed a tendency to focus on individual factors such as biology, genetics, and psychology as causes for mental health problems, and downstream interventions like pharmacology and individual therapy as solutions. When asked whether their own experiences with RFAs matched that found in the content analysis, program officers corroborated my quantitative findings: Based on both the
content analysis and program officer accounts, individual-level causes and solutions to children’s mental health problems are favored in federal Requests for Applications for research and services related to children’s mental health.

In addition to triangulation, the interviews were an opportunity to question those who authored RFAs about their own views of mental health. One explanation for the downstream, individual approach taken in RFAs is that those who construct these documents believe that this is the best way to solve the mental health problem. For this reason, I was specifically interested in investigating whether program officers would, like RFAs, articulate a reductionist perspective on the origins of mental health problems and a focus on the individual as the locus of intervention. Respondents also provided explanations for the unbalanced content from their perspective and based on their experience with the RFA process.

The program officers interviewed do largely accept the biomedical model as the basis for their work; they believe in it, and it appears to be unquestioned as the proper institutional structure upon which to conduct research related to children’s mental health. The medical model is perceived as functional: By framing problems as medical, there is a formalized structure, medical insurance, to pay for services. Rather than changing this funding arrangement to allow for broader preventive and treatment interventions, ones that recognize the context of mental health troubles, the existing medical framework is reinforced. The medical model is also viewed as useful in that it has the potential to remove or reduce the stigma of mental illness from its sufferers and their families. The power of advocacy groups, often comprised of family members of persons with specific mental health issues, in defining the nature of mental troubles as medical is suggested by
one respondent. Schooler (2007) has previously documented the influence of health lobbying organizations in pressuring funders to use their resources to find cures for specific diseases. These groups have adopted a view that studies focused on social or other non-disease-specific research are wasteful, especially expressing hostility toward any research that may suggest familial involvement in mental illness causation (Schooler 2007).

One respondent was particularly ardent about the perceived value of the biomedical perspective, and provides a window to a potential line of thinking about mental health among some NIH scientists (see quote on page 122). This quote deserves attention for several reasons. First, the program officer used the term *reductionist* in self-description. Embracing a perspective that reduces the complexity of human behavior to the smallest possible components certainly reflects disciplinary preferences for biomedical and micro-level research; however using the precise term may also indicate that there is broad awareness of reductionism as a potential criticism to the biomedical/genetic model, but that this criticism is not given credibility. Instead, it can be conjectured that reductionism is worn as a badge of honor due to the perceived value of studying at the most micro-level among scientists. For example, Schooler (2007: 60) argues that there is a “prestige hierarchy” that operates within scientific communities, including NIH, in which there is an inverse relationship between level of analysis and prestige, with micro-level analyses accorded higher levels of regard.

Second, despite the program officer in this quote being prompted to think about causes for mental health problems *outside* of genetics, several mental illnesses are stated as genetic disorders of the brain, and this is stated as definitive fact, while existing
evidence suggests, but fails to authoritatively establish, this relationship (Schwartz 1999; Schwartz & Corcoran 2010). The respondent additionally claims that schizophrenia is found in populations across the globe and at various times in history at the same rate. Yet one systematic review of relevant studies found that significant heterogeneity exists in global prevalence and incidence rates of schizophrenia (Goldner, Hsu, Waraich & Somers 2002). Certainly this respondent, as a neurobiologist, is more likely to be familiar with the research literature published within the discipline. But another possible explanation for continued support of genetic models over ones that recognize social influences relates to publication patterns. Latour (1987) suggests that the number of references supporting an argument matters in establishing it as fact: A challenger would have to overcome all of these previous studies in order to discredit the argument. It is reasonable to assume that the number of published papers supporting the genetic explanation for mental health far exceeds the number questioning it. From the perspective of at least some program officers establishing research policy then, the “black box” (Latour 1987) on the causes of mental health problems is closed despite plausible arguments that suggest this is premature and misguided.

Finally, the respondent’s statement also seems to imply that genetics are enough, alone, to cause mental health disorders, that environment’s role is relegated to “give you kind of a double hit and trip you over the edge.” This perspective doesn’t acknowledge that some psychiatric disorders may arise subsequent to extreme trauma or deprivation (Perry & Szalavitz 2006) or brain injury (Fann et al. 2004). More importantly, the view that because genetic predisposition is required for certain disorders, these are necessarily genetic disorders, does not give due consideration to how the environment can be the
deciding factor in the expression of disorder. For example, Gluckman and Hanson (2006) have described how very small variations in the environment can lead to dramatic differences in population health in other domains. Under these circumstances, prevalence rates differ not because of genetic predisposition but because of varying phenotypic expression due to these environmental variations, *epigenetic* influences. Such occurrences could even explain familial patterns of disease: If an entire family manifests a condition, it may be due just as much to exposure to an environmental stimulus as to genetic predisposition. Yet the naming of mental disorders as genetic reifies the cause of mental health problems as biological, and results in a focused biomedical approach to research and treatment when much remains unknown in terms of causation and treatment. By concentrating so heavily on biomedical approaches, potentially fertile grounds for research on environmental and social factors in mental health go unexplored. Moreover, much of the evidence provided to legitimize the hegemony of the biomedical model isn’t even factually established.

In this example and in others, respondents tend to use language that leads to the disappearance of social and contextual factors. Latour and Woolgar (1979: 23) note how, over time, “social factors” relevant to scientific processes become subsumed as normal aspects of science, resulting in the disappearance of features that are social in nature. Another way that social factors become trivialized is due to the use of what Dannefer (2010: 11) calls the “heuristic of containment” where only a limited number of social variables are examined, and any unexplained variance becomes attributed to the individual, rather than to social factors that aren’t included in the analysis. In the same quote referenced above (page 122), the program officer mocks the “refrigerator mother
syndrome” as an explanation for schizophrenia. By using this specific, and out-of-date, explanation for the origin of schizophrenia, the program officer pushes the dominance of the biomedical position even further, implying that social causation is ridiculous. Most other references to the environment are vague, with no specified mechanism of action. By using either specific and overtly flawed, or vague and unspecified, social explanations for mental health, program officers essentially remove these as reasonable areas of study.

When asked to think outside the biomedical model, there was a striking absence of suggestions for extra-individual solutions for children’s mental health problems. Non-pharmacological solutions offered still come in the form of downstream, individualistic approaches like individual therapy, provided in conjunction with pharmacological treatments. If it were empirically legitimate to say that these problems originate in the brain, and that medication and retraining thought processes were enough to eliminate these troubles, these positions could be justified. However, as I showed in Chapter 4, much evidence points to the role of social factors in the causation of mental health problems. Social factors like socioeconomic status, neighborhood, school, and family factors are directly implicated for a range of child mental health problems; for this reason, unquestioned assumptions about the individual as the appropriate location for intervention fail under scrutiny. It is important to note that the necessity of investigating genetic, biological, and psychological bases and solutions for mental health problems is not in question. Indeed, there are already individuals who are suffering from these problems who deserve the full range of ameliorative options available. But just as it would not serve those at risk for, or already experiencing, mental health difficulties for mental health experts to solely talk about social structures and power as the bases for
their problems, a tunnel-vision focus on genetics and biology is not likely to provide the requisite solutions either.

In addition to examining respondents’ mental health belief systems as an explanation for the downstream, individualized approach to mental health found in the RFAs, respondents were asked to reflect upon the findings of the content analysis. Program officers tend to view structural types of interventions as too difficult to control or as someone else’s problem. One participant blatantly stated that the environment is trivial in its import to mental health. Although it is impossible to determine how widespread this view might be at NIH, it certainly raises concerns over the lack of social factors research in mental health to a whole new level. It is one thing to be unaware of, or feel powerless over, structural influences on mental health. It is another thing entirely to believe these are utterly unimportant.

Respondents suggested that individual-level interventions are easier to implement, however large-scale efforts to execute behavioral interventions have largely failed (Glass & McAtee 2006), and both pharmacological (Friedman 2010; Greenberg 2010) and cognitive therapies have been shown to operate at least partially via placebo effects (Greenberg 2010). Regardless of their effectiveness, none of these are intended to prevent the child mental health problem. In *The Cult of Statistical Significance* (2008: 55), Ziliak and McCloskey argue that continued focus on statistical significance to the exclusion of examination of effect magnitude are reminiscent of the story of the drunk who loses his keys after leaving the bar. A friend sees him searching under a street light and asks whether he is certain this is where he lost his keys. His response is that, though he lost his keys somewhere in the dark, the light is much better under the street light. “It’s too hard”
explanations of why the focus on mental health remains at the individual level and continued searching for the answers to mental health solely within the individual is like the drunk looking for his keys under the street light.

The notion that preventive social interventions are being investigated through the work of another branch is not reflected in RFAs – there simply isn’t substantial funding available for social research related to children’s mental health. One respondent suggested that NICHD would be relatively more likely to focus on structural types of issues, yet not one of the RFAs identified from the population of grants distributed by Grants.gov since 1992 was issued by NICHD as the lead agency. Additionally, the research framework provided on the NICHD website doesn’t mention social environment at all. The online material refers vaguely to “events” that affect health and well-being, while an area related to growth and development “focuses on cellular, molecular, and developmental biology to build understanding of the mechanisms and interactions that guide a single fertilized egg through its development into a multi-cellular, highly organized adult organism” (NIH Almanac 2010). On the other hand, NICHD is co-sponsoring the National Children’s Study (2010), an effort to “examine the effects of environmental influences on the health and development of 100,000 children across the United States, following them from before birth until age 21.” This will be an interesting and important study to follow, particularly in terms of its relative focus on biological and social influences and outcomes.

The lack of sociologists on staff at NIH was also mentioned as a potential reason for the continued focus on the individual in RFAs. Scientists who are represented, including biomedical scientists and psychologists, don’t have an incentive to change the
focus of RFAs, at least from the perspective of disciplinary maintenance and reproduction. A program officer who worked in HIV/AIDS is one exception to the emphasis on the biomedical model, but can offer few examples of structural intervention even in HIV/AIDS. This finding is particularly interesting because the one RFA that had a predominantly social focus was related to the psychosocial functioning of children whose parents died of AIDS. Additionally, a respondent whose quote is presented in Chapter 8 mentioned that one individual had a tremendous impact on the AIDS research portfolio due to his interest in ethnography.

Under these conditions – strong institutional structures, the belief that the medical model is functional, dedicated advocacy groups, resignation that structural interventions are too hard, and a lack of incentive to change – posing challenges to the medical model is a difficult proposition. Clearly, sociologists need to be more dedicated to and savvy about advocating the position that the social environment matters. The bottom line should be about prevention and helping children and their families who are suffering mental health problems and this needs to be an interdisciplinary effort.

In the next chapter, I present the findings of program officers’ descriptions of the RFA process, which reveal compelling evidence that the construction of science is an inherently social process.
CHAPTER 8: RESULTS: FACTORS INFLUENCING THE CONTENT AND CONSTRUCTION OF RFAS

In this chapter I describe program officers’ accounts of the process of RFA construction. How are RFAs actually written? What factors play a role in the conceptualization and final substance of calls for proposals for federal funding of children’s mental health research? The purpose of answering these questions is to explore whether “nonscientific” factors inform federal science policy. That is, are there other factors, outside of science, in addition to the belief systems of the authors of RFAs, which might explain the downstream, individual-focused pattern of funding?

Some of the reasons for the reductionistic content of RFAs as understood by program officers are discussed in Chapter 7, including the undergirding of NIH by the medical model, individual institutes’ orientation toward specific models of research, the stigma of mental health diagnoses, insurance parity, and the DSM-IV. This chapter presents all of the additional factors identified by program officers as relevant to the construction of RFAs, primarily drawn from respondents’ discussions of their experiences with writing and participating in the development of RFAs. These data represent accounts of program officers’ beliefs about part of the process of creating federal research policy.

Program officers do not always achieve consensus on the RFA process, indicating in part, differences in procedures among institutes, but also variation among individuals in the framing and understanding of the practice. This chapter is not intended to critically examine program officers’ versions of the process, but rather to demonstrate the wide
range of factors that potentially influence science policy. I hypothesized that authors of
RFAs related to children’s mental health would identify multiple “nonscientific” factors
that shape content; this was indeed the case. In fact, it is striking that so few program
officers would identify so many varied influences on RFA construction just in the course
of talking about their work. Factors identified by participants as influencing the process
and content of RFAs can be categorized as individuals (both non-investigators and
investigators), groups, institutional factors, political/social factors, and the field. Table 5
identifies these factors by category. Relevant quotes are presented below.  

Table 5: Factors Influencing Construction and Content of RFAs

<table>
<thead>
<tr>
<th>Individuals</th>
<th>Groups</th>
<th>Institutional Factors</th>
<th>Social/Political Factors</th>
<th>The field</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-Investigators</strong></td>
<td>Advisory council</td>
<td>Budget</td>
<td>Stigma</td>
<td>Practical problems</td>
</tr>
<tr>
<td>Institute director</td>
<td>nonscientific public</td>
<td>competition</td>
<td>Administration</td>
<td>Knowledge gaps/opportunities</td>
</tr>
<tr>
<td>Division directors</td>
<td>advocacy groups</td>
<td>relative merit</td>
<td>Congress</td>
<td>Lack of researchers</td>
</tr>
<tr>
<td>knowledge of literature</td>
<td>External research networks</td>
<td>cross-institute collaboration</td>
<td>Government system</td>
<td>DSM-IV</td>
</tr>
<tr>
<td>Financial officers</td>
<td>Meetings/ conferences</td>
<td>Incrementalism</td>
<td>Ideology</td>
<td>Science</td>
</tr>
<tr>
<td>Program officers</td>
<td>Review sections</td>
<td>Institute orientation</td>
<td>Insurance parity</td>
<td></td>
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<tr>
<td>power of one individual</td>
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<tr>
<td>social skills</td>
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</tbody>
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6 Some examples are omitted because quotations are presented elsewhere.
relationship with investigators
relationship with other officers

Investigators

I. Individuals

A. Non-Investigators

Individuals who were mentioned as influencing the RFA process included the institute director, division directors, financial officers, and program officers.

The director of each institute wields tremendous power over which initiatives are approved for funding and therefore the final content of RFAs (also see references to the institute director’s authority throughout the other examples below):

… each institute’s director...has really the ultimate authority. He or she who runs the institute has the ultimate authority.

Division directors are also influential in the process, as is their knowledge of the literature:

So it’s a mixture of feedback from program to the division director and also the division director’s knowledge of the literature and discussions with investigators that will actually identify what our initiatives for new RFAs would like to see.
Financial officers serve as guardians of financial resources:

At the planning meeting you’re really playing off scientific things with how much money, so the financial people will be there…our institute director, will be agreeing to all sorts of things, and they’ll say wait a second you’ve already spent more than you have to spend in the year. They’re sort of the check on things.

Individual program officers are often responsible for composing the RFA, with input from others:

So typically I may write something and then I’ll ask for input from the different divisions. And then I’ll take input and put it all together. Sometimes it’s pretty much an individual is doing it but then again that individual has to run it through their division. And then ultimately gets circulated throughout NIDA and people can comment, change it, or whatever.

And individual program officers can have significant impact on the type of research that gains favor. This particular individual made a difference in the AIDS portfolio:

Sometimes an individual can make a big difference and I’m thinking now very specifically of a guy who used to work at NIDA who was very big on ethnography and [individual’s name] sort of singlehandedly built a large ethnography portfolio.

Social skills of individual program officers are important in convincing the institute director of the importance of specific topics:
So it’s sometimes, it’s not sometimes, it’s always, we have a limited amount of money in the budget and we have to prioritize what we want to put money in as set aside, and she’s the one who makes the call and it’s a matter of having, your luck of having it get approved is a mixture of the science and your social skills in selling it to the institute director.

When speaking about cross-institute collaboration, a program officer points out that the amount of co-authorship undertaken depends on individual personalities:

A lot of it involved personalities. Some people are a lot easier to work with than other people. I mean you know you’re not going to keep going back if somebody’s been a pain and hasn’t been easy to work with you’re probably not going to go back – you just aren’t.

B. Investigators

Investigators also shape RFAs:

How those topics come about is basically on the science and how critical it is to try to move a research area in a certain direction and the feedback for that comes mainly from staff and also discussions with investigators, attending conferences, seeing what people are working on, and what the major stumbling blocks are for accumulating knowledge in a certain area.

Some investigators have more influence than others over program officers:

I think we all kind of approach it a little bit differently. I keep in pretty good contact with my grantees, especially the ones who I think are either promising or superstars, the ones who are extremely productive, and out of that bunch, the ones that keep showing innovation.
II. Groups

Groups that have a role in shaping RFAs include advisory councils, external research networks, attendees at meetings and conferences, and review sections.

Advisory councils, comprised of scientists, advocates, and the nonscientific public, serve as reviewers of potential funding opportunities:

… the grants then as a whole group, all of the institute’s grants, the NIMH grants, go to our council three times a year, and council is made up of people who are both from the nonscientific public, people who are scientific specialists, and advocates in the particular areas that NIMH might be active in. And that whole group looks at all the grants that we’re potentially going to be funding and as a final process of reviews says “it’s good for you to spend public money on this slate of grants that you have this round.”

But the groups are advisory in nature only, and again the institute director makes the final decision on funding matters:

…they have absolutely no authority whatsoever. They’re an advisory group…He or she who runs the institute has the ultimate authority. And they use council’s advisory capacity to help them make decisions but they ultimately make the decisions.

External research networks influence whether an RFA is constructed on a particular topic:

So the what makes, what determines if there is an RFA on a certain topic is basically the literature, program, external research networks of people saying
there’s a need for this, and attending conferences and seeing what are some problematic issues that people are not answering and that’s what drives what actually gets awarded in an RFA.

Meetings and conferences are important fora for generating ideas on potential funding opportunities:

We have two ways to promote initiatives. One, we have a program opps in my division so that we actually formally present initiative possibilities to our director, and the other thing is that we can ask to, we can ask the institute to support a meeting in a particular area for us. Sometimes they say no, sometimes they say yes. Once we have this kind of meeting, then we are more likely to be able, the meeting is often a prelude to developing a funding opportunity or announcement, with money behind it hopefully because it allows us to determine what the gaps and the opportunities are in the research.

How those topics come about is basically on the science and how critical it is to try to move a research area in a certain direction and the feedback for that comes mainly from staff and also discussions with investigators, attending conferences, seeing what people are working on, and what the major stumbling blocks are for accumulating knowledge in a certain area.

Specific conferences held by the field also shape what types of research are funded:

The Gordon conference is a series of conferences in many, many topics. This one happened to be on catecholamines. And it’s something that runs every 2 years on this particular topic… So it’s a thing that, you know it’s done by leaders in the field. Because I’m also the funding agency, they often talk to me about what might be coming down the pike, what they might want to look for, or suggestions for speakers. And because of the kind of position I have where I actually know a couple things, I’m helpful to them. So it’s another way of shaping the science agenda.
A lack of appropriate review sections is a possible reason for constructing an RFA in a particular area:

…when you have an area not represented on a committee, its chances of doing well are not very good. So that’s another reason for an RFA. You say, I know that the grants that are coming in on this are dying because of the review process, so you do an RFA and that gets you a tailored review…another reason for an RFA, if you know there’s a need and it can’t be met because review committees don’t have expertise, there’s no one on any committee… an RFA is way of jump starting an area.

III. Institutional Factors

Institutional factors that drive RFA topics and content include budget considerations, the individual institute’s and NIH’s orientation to disease (see Chapter 7), and incrementalism, or efforts to combat it.

The institute budget drives funding decisions, including competition between topics, and evaluations of the relative merit of various ideas:

…so you have the institute director, and then the institute is divided up based on its scientific or its therapeutic or health mission into different divisions, and then each division has a director, and within the division you have programs and you can have various hierarchies within there so each of the divisions through their division director makes their advocacy to the institute’s director, and we advocate competitively with one another, collaboratively with one another, and sometimes aggressively with one another.

…once you develop the things you’d like to have initiatives for, then have to look realistically at the pots of dollars. And when you develop an initiative you put aside money for it which means you take it away from anything that comes in as an unsolicited grant. So it’s a balancing act.

People want to get proposals to come to them. So you get into these funny kind of
things where they want to put in whatever magic words they think will push applications to their branch. So you can end up with fairly, you know, things that aren’t so good.

The decision-making power of the director is highlighted when considering the relative value of different proposals:

…getting support is driven by the final decision maker, which is the director, so it becomes, at one level it becomes, are you able to convince the director of the significance and the relevance and how timely it is to do this and is it worth the investment and dollars for answering that question compared to other initiatives that she’s getting requests for RFAs as well? So it’s like it’s not just one initiative and its own merit itself, it becomes there’s a relative value to the RFA compared to others because she’s comparing the value of putting money, investing money, in a certain research question compared to other research questions that have been proposed to her.

When comparing proposed opportunities, the director prefers cross-division collaboration:

We have a limited amount of money in the budget and we have to prioritize what we want to put money in as set aside, and she’s the one who makes the call, and it’s a matter of having, your luck of having it get approved, is a mixture of the science and your social skills in selling it to the institute director. So it’s not just pure science – it’s, that is important, it’s probably the most important component – but it’s one individual that makes the decision and that’s the institute director, and she’s got like, in this institute, typically about 25 proposals for RFAs for the coming year and she’s the one who’s going to say yes or no to each one of them. So it’s a matter of competing against, different division directors competing against each other. The fact that it’s, if you do engage more than one division, then it’s more appealing to her because it’s not just going in one division it’s more across divisions, it’s good for the entire institute, it’s going to bring research into play, like we have a division that’s basic science, basic biomedical science, and we have another one that’s more clinical epidemiological that looks at prevention issues and all that so you may have a research question that calls into play both, you know, and that way if you have an RFA that you’re saying well I’d
like to have an RFA that would be attracting some basic biomedical research, whatever, or better understanding some certain process but you also want some clinical studies that would be epidemiology or prevention, then it may be more appealing to the director because it engages more than one division so that, too, is a factor that comes into play.

Incrementalism is viewed as necessary by some, but as antithetical to research progress by others. In the following example, incrementalism is viewed as the manner in which most scientific progress takes place:

So innovation is trying to get really hard things to work, and everyone knows what the hard things are, it’s just getting them to work. And so when we fund grants and when grants are reviewed, most of the time it’s based on ideas that are good and have a very good chance of succeeding because they provide the experimental success that builds the data and builds the knowledge base that moves the field forward. Yes, incrementally, sometimes gradually. Sometimes frustratingly slowly but that’s the machine that eventually spits out a couple of really cool ideas that move the field forward in kind of dramatic ways. But you can’t say I’m going to go do something dramatic and have it happen because you say it, sometimes it’s luck. So innovation, it’s not lacking, it’s just it’s hard, it’s hard to make it work. And so a lot of what NIH does, is it’s, yes, based on this kind of incremental, slow, plodding way but it reflects science.

Yet others suggest that science should be driven by novel ideas that drive the field forward in more dramatic ways and that is one purpose of RFAs:

...we’re asking for a crazy, novel, unusual idea that may have tremendous public health impact if it works, but we know going in that we’re going to fund a truckload of these things that will never work, but it’s worth taking the chance to have one creative idea, and there the point of the requirement is that it can’t just be an extension of what already is known and would be the obvious next step. So in an area we’ve accumulated this, we have quite a bit of data on that and we postulate that this, this, and this should be happening, and the mechanism is this, and everyone agrees, and it makes common sense and it gets funded as an R01 but we don’t want that. We want people to come in with proposals that are out in left
field, that are really creative ways of looking at an issue. So that got, that RFA got issued because we wanted to generate more creative research areas so the reason why we do an RFA can vary; it’s a mixture of things.

Incrementalism is even suggested as going against science, or as hindering progress:

_{I think that if we continue to do science incrementally, we’re not doing science. We’re doing, basically we’re being technicians. I want ideas that are going to change the way the field thinks. This is the ideal, it’s not always what we get, but it’s the way it is._

_{I think the system works reasonably well but does have biases toward doing what’s been done before...It sort of does box people into incrementalism pretty much._

**IV. Social/Political Factors**

Various social and political factors influence content of RFAs, including stigma and insurance parity, discussed in Chapter 7. Political factors suggested include the Presidential Administration, Congress, and even the United States’ system of government. The Administration can have a profound effect on the types of initiatives that are funded:

_Well OK, in the, so when Mr. Bush was president, he made a big deal about faith-based communities and faith-based communities were encouraged to apply for grants across all of NIH, not just drug abuse, not just mental health, now I can’t think of anything that has less science to it than a faith-based community. I think faith is nice, you know, I mean, I think it’s a good thing, but I don’t think that it’s something that you can easily quantify, and science is something that’s quantifiable, and so in our notices, we always add things like who, there’s a section called who’s eligible and I believe they now all say faith-based communities are eligible but later on in the announcement it always says that these ideas, you know the bullets that they usually put out as potential ideas of
interest, that all ideas are welcome, these are just suggestions, limited to but not excluding anything else. I think that the science community, the scientific community in general, doesn’t think outside of science.

Congress plays an important role in everything from the structure of NIH to the overall budget to specific institutes’ budgets – which institute gets more or less funding drives what direction researchers take:

...one thing is, there’s a bigger, talking about macro level, whatever NIH does is dependent on the way it’s structured and the way it gets appropriated, appropriation money from Congress. So Congress determines what our budget is going to be every year and then, they even allocate money to the institute level, like this institute will get this and the other institute will get that. That has tremendous bearing on how much money you got and there’s favorite kids of Congress on the Hill as far as but that has an impact on how many RFAs people, an institute can actually issue, it’s a budget issue, and the nature of the institutes also reflect what Congress cares about. The reason why we have a disease institute kind of structure, like infectious disease goes a certain place, drug abuse another place, mental health another place, neurology another place is because Congress created NIH that way and every single office that we have like the Office of AIDS research that oversees all the AIDS research across all the 27 institutes here at NIH, that’s created by Congress. The Office of Behavioral and Social Science within the Director of NIH was created by Congress. Everything we have and the way that it’s structured is driven by Congress and not only the structure but also the money, and the money will determine what can and cannot be done and what diseases are favorites of Congress will get more money than diseases that are not favorites of Congress, so all that has an impact down to the level of the RFA but it’s way up there, I mean from a macro level they influence – they decide where the money goes and that will decide what kind of research gets done because researchers will go where the money is.

Even the United States’ system of government is related to the RFA process:

…that’s called American democracy system, democratic system. I think Congress is too much influenced by lobbying and all that but I’m not going to be able to change that… But sometimes they don’t necessarily always do what’s the best for the good of society but that’s every form of government has their weaknesses on that. But it would be good if you kept in mind that what gets done in terms of
research is really dependent on the way that Congress has created NIH structurally speaking and how they appropriate money to NIH. That will have an effect all the way down to the individual RFAs because the amount of money you got and the type of disease you are looking at will determine what type of RFA goes out the door.

A respondent suggests that ideology drives political decision-making and that this affects funding:

… there is a big difference between what we know scientifically and what kind of policy gets issued from the legislative bodies and the administrative bodies of the government, I mean they don’t have to recognize what science says and they do what they want to do – it’s ideology that drives what they’re doing, it’s not necessarily science.

Ideology around market forces can also affect science:

The ideology comes into affecting whether something gets done or not on specific topics that are, for whatever reason, either sex or pollution, because of the economic ramifications and imposing more stringent regulations would cause industry to lose money, and living in the most capitalist country in the world that’s an issue and certainly people do believe certain things about what kind of market economy we should be living in and so that’s where the ideology comes in; it’s like, it’s on sensitive issues, religion, sex.

V. The Field

I guess my take-home message would be that NIH is a mirror of the scientific fields that it represents. So if you’re looking at what NIH does, it really reflects the field, and a lot of times the field looks at us as this black box, you know grants go in and sometimes money comes out but not all times. And like something mysterious happens but there’s nothing mysterious, it reflects the field…the idea that NIH dictates to the field what’s going to happen and the field follows the lead of NIH is not true at all.
The program officer in the above quote is very specific that NIH funding is reflective of what is going on in “the field,” the field does not follow the lead of the NIH. Yet the same program officer also indicates that researchers do follow the money:

… NIMH was interested in basic developmental neurobiology because we felt that was germane to the health mission of understanding the psychiatric disorders, and so you put out a program announcement and program announcements have no money; you just alert the field that there’s this and if you send grants that are ‘mentally healthy’ that come to us we’ll be able to fund them, and so people who didn’t think “gee I would write a grant targeted at mental health” now are focusing on us and we get to get their ideas and their grants thinking about our problems when we start funding basic research in that area.

It seems likely that there is some mixture of the field influencing NIH and NIH influencing the field. The field is viewed as influencing the content and process of RFAs through practical problems, knowledge gaps and opportunities in new areas, lack of researchers (see Chapter 7), the DSM-IV (see Chapter 7), and science.

At times, practices are being utilized in the field but there is not sufficient evidence as to whether they are safe or effective. A practical problem arising from the field was the prescription of psychotropic drugs to children and the need to consider drug safety:

and the thing is, even though we’re in different institutes, we study the same brain regions and the same transmitters and so we cooperate a lot. And we both noticed at the time that there was a huge gap in what we knew about developing brains, not prenatal, not adult, but the stuff that happens during adolescence; for example, brain changes are rampant. And you have a whole bunch of hormonal influences that weren’t there before. And so we were, we wanted, because kids are prescribed Ritalin from the age I think 6 and up and other children are being prescribed anti-depressants and some other things like Lithium for bipolar
disorder, it became important to know what’s going to happen to those brains. And once you change a brain, what’s the functional outcome?

Another practical problem that stimulated an RFA was the use of needle exchange programs:

there’s also sometimes, years ago, political, not political but social reasons why we’re doing things, like a lot of communities implementing needle exchange and we had to do research to see if it made a difference or not, so it made sense for us to actually fund some needle exchange research to see if it was protective and efficient in reducing incidence rates among people that share needles, that inject drugs. So that’s another reason why we may issue an RFA so it depends, it sometimes, it’s more pragmatic than scientific and sometimes there’s things being done that we need to know if it works or if it doesn’t work

Gaps in knowledge and poorly understood areas can also stimulate an RFA:

So sometimes you might have a meeting and say, gee there really doesn’t seem to be that much out there on a given area. So that’s one way. Another is just looking at the portfolio, and you say, hmm, look at this, we don’t have we don’t have anything on this, or we have one grant, things like that. A lot of it is seeing what you have and whether it’s meeting various needs out there.

And so if you identify an area like that you can see it, you can say there really is a gap here, you know we need to do something to stimulate the field in this area, and that’s where RFAs really come from. It’s based on a real perceived need that there’s something in the field that’s missing. There’s a gap, there’s a weakness, there’s a part of the literature that hasn’t been populated by data that needs to be there so the field can move forward, and, or an opportunity.

Opportunities and new areas can also be the catalyst for an RFA:
More often than not, it’s easier to get an RFA for a new area. I’ll give you an example. Epigenetics is a big deal. It’s a young area, it’s a new field, it’s growing very rapidly and we asked the institute director to make sure to get an RFA on epigenetics last year and it was an easy sell because when you are trying to sell it to her, the saliency of it is that if we don’t get into this area early we’ll be left out of it as an institute, so a new area matters.

This final quote sums up quite nicely what factors influence the content of RFAs - it’s science, but it’s also “not just pure science”:

We have a limited amount of money in the budget and we have to prioritize what we want to put money in as set aside…and it’s…a mixture of the science and [other factors]…So it’s not just pure science…

VI. Conclusion

Program officers identified multiple factors both “outside” and “inside” of science that influence the content of RFAs. Individuals, groups, institutional factors, social and political factors, and “the field” were identified during the course of the five interviews as shaping the developmental process and eventual products released to the public as calls for proposals. These influential factors were mentioned, in large part, matter-of-factly, without addressing the potentially problematic aspects of their impact on the scientific process.

Human beings interact with one another, and with institutions, to construct social realities, so it is not surprising that various individuals have an influence on the RFA
process; nor is it unexpected in a bureaucracy such as NIH that the various institutes’
directors would hold ultimate authority in making decisions about funding priorities. But
without interrogating the process of RFA construction, it would not necessarily be
apparent that personalities, personal relationships among members of the scientific
community, and individual staff members’ knowledge of relevant literature and skills in
selling their ideas might shape science policy. According to the accounts of program
officers, individual staff members may have more or less power to influence the content
of RFAs based on their individual characteristics, not just their level of scientific
expertise. It would seem, in the traditional view of science, that personal differences
would be put aside in the pursuit of scientific truth, and that scientists at the highest level
would not only be aware of the current state of the literature on relevant topics, but
mostly immune from sales tactics, instead focusing on scientific merit. But scientists are
like all humans, their actions embedded in their relationships and experiences. It is often
only through studying and reflecting on the ways that human factors influence science
that these hidden-from-view influences are revealed.

Various groups were also referred to by program officers as central to defining the
content of RFAs, including external research networks, conferences, and advisory
councils. Utilizing external research networks and conferences to help define research
priorities may introduce partiality in the topics selected for priority funding depending
upon the entities that provide sponsorship to these groups and meetings. For example, a
conference sponsored by the pharmaceutical industry would likely focus on the
biochemical aspects of mental health. The vast resources possessed by the pharmaceutical
industry might also enable more extensive conference patronage than available to groups
interested in alternative types of intervention. The presence of advocates as part of the scientific advisory council, while seemingly an effort to allow for public input into the funding process, opens the scientific community to the influences of powerful disease-specific special interests, groups who may not only want to sway funding in the direction of a specific illness, but who may have strong opinions on the way that these illnesses should be approached.

Several institutional factors were named as relevant to the RFA process, also potentially affecting the creation of science in typically unexamined ways. First, a usual suspect in institutional dynamics, the available budget, was viewed as leading to a struggle among competing diseases and approaches. It is quite reasonable to expect that funding would constrain how much research could be conducted, and that decisions would have to be made based on the relative merit of various proposed funding streams to accommodate the budget. But again, individual personalities and “sales skills” become important in funding decisions, as competition mounts to gain access to this scarce resource.

Second, not only was the biomedical model upon which NIH operates viewed as shaping the research agenda to favor biological and medical research, but an issue related to the design of NIH was identified by program officers as important to the content of RFAs. Institutional organization would not necessarily be considered problematic to the objectivity of science on face value, but closer examination reveals how it might shape what science is conducted in unexpected ways. The infrastructure upon which NIH was founded, the disease model, which provides for institutional divisions based on specific illnesses, is just one organizational approach that could be created to solve the problems
that are the focus of study at NIH. At least one program officer considered this institutional design problematic, perceiving that it results in preferential allocation of funding by members of Congress based on their “favorite” causes. This design may also contribute to the continued focus on reductionist approaches to disease alleviation by addressing only disease-specific risk factors and symptoms, rather than coordinated efforts to attend to commonalities that underlie causation of multiple illnesses, or that exacerbate risk in specific populations.

A few social factors affecting the content of RFAs, such as stigma and insurance parity, were discussed in Chapter 7. Several important political factors also emerged as influential in the development of RFAs, including the Administration, Congress, and even the American system of government. In fact, these factors were recognized as problematic to the topics of study funded through the RFA process.

Individuals and their personal characteristics, groups, institutional structures, and social and political factors are not often considered relevant to the creation of science, and are certainly not objectively determined. Yet even factors related to “the field” like gaps in knowledge and practical problems, which seem to arise in response to questions of science, are subject to social influences. First, some investigators may have more clout than others in influencing the research agenda. One program officer mentioned keeping in close contact with grantees, in particular ones with a stellar reputation, potentially allowing for individuals who have already been successful in obtaining grants in preferred areas to influence future funding priorities in a similar direction. Second, existing practices that are subjected to evaluative research may be driven by ideological preferences, requiring that research focuses at that level. For example, needle exchange
programs which focus on changing individual practices, or that target laws, require different research designs appropriate to the location of the intervention. Third, it seems likely that the problems that rise to attention, the gaps in knowledge that are uncovered, do so within an institution which favors the medical model.

All of the above influences on science typically go unexamined and unreflected, insidiously affecting what topics are the focus of study, how much funding is allocated, and how social problems are studied. Yet science is accorded high status partially based on its claims to objectivity. Simply asking program officers to describe the process of creating RFAs revealed that science is like every other human endeavor – subject to contextual influences, power struggles, and the influence of dominant ideologies that favor certain types of research over others. It is not possible to eliminate every possible source of this bias; rather the key is for scientists to be aware of it. It is important that scientists engage in reflection that recognizes that as they design research programs that stimulate specific areas of research to the disadvantage of others, they may also be disadvantaging children and families who are likely to suffer from mental health problems.
CHAPTER 9: DISCUSSION AND CONCLUSIONS

I. Summary and Discussion of Findings

I am now convinced that this kind of direct examination of scientists at work should be extended and should be encouraged by scientists themselves in our own best interest, and in the best interest of society. Science in general, generates too much hope and too much fear…(Latour & Woolgar 1979: 13).

In his introduction to *Laboratory Life*, Jonas Salk commends the authors for their work toward the demystification of science. By studying scientists at work, Latour and Woolgar demonstrate how science is constructed through social interactions, and how reality is actually “the consequence of the settlement of a dispute rather than its cause” (1979: 236, emphasis in original). In other words, what counts as truth comes about when scientists agree upon it, as opposed to the discovery of facts causing scientists to achieve consensus. Further, the authors reveal how scientific production takes place within a context largely devoid of reflexivity upon the methodology and process by which statements become transformed into facts, causing circumstances surrounding fact production to disappear.

This study has, likewise, been an attempt to “apprehend as strange those aspects of scientific activity which are readily taken for granted” (Latour & Woolgar 1979: 29). Great hope is placed in science to provide relief from a range of human sufferings, among them the mental health problems of children. But despite the best efforts of science, children and their families continue to face mental health difficulties at astounding rates (USDHHS 1999). As with physical health, the bulk of remedies are aimed at biological
and psychological processes, rather than at the social arrangements, or fundamental social causes (Link & Phelan 1995), of disease. Using Mills’ (1959) notion of sociological imagination, by reducing the public trouble of child mental health problems to a private ill of the individual, the social causes responsible for its creation are concealed. Perhaps this sustained focus on the individual as the locus of mental health problems is due to a failure to reflect on the scientific process, and to consider all possible explanations and treatments for children’s mental health problems. Have scientists settled on the causes and solutions for mental health, without uncovering all the evidence? Aside from pharmaceutical industry-sponsored research, health-related scientific activity within the United States is largely driven by federal dollars, and the distribution of funding largely takes place through the Requests for Applications (RFA) process. If these funding sources substantially favor reductionist approaches to the problem of child mental health, those at the biological and psychological level, over extra-individual explanations and resolutions, a starting point exists for critical reflection by the scientific community.

Because RFAs represent national research policy, an investigation of this widely accepted practice is crucial to understanding current scientific paradigms surrounding children’s mental health. How these RFAs come to fruition from the idea stage to the final document, resulting in text preferring some content over others, has not been the topic of sociological inquiry, nor have the beliefs of the authors of RFAs been subject to critical analysis. By examining program officers’ descriptions of the creation of RFAs, and their belief systems surrounding the causes of children’s mental health problems, and suitable interventions for relief of its troubles, this study represents a first step toward a sociological understanding of the content of calls for proposals for federal research.
funding in the domain of child mental health and how these may perpetuate a continued focus on downstream efforts to ameliorate the problem.

Indeed, an examination of RFAs dating back to 1992 reveals a robust tendency toward individual-level explanations and solutions for children’s mental health problems. Of 21 RFAs containing text identifying causes of mental health problems, 13 were heavily reliant on individual-level explanations as fundamental causes, and 84.0% of all causes identified were located within the individual. Biological causes were particularly dominant, comprising 73.9% of the total causal meaning units. Within biological causes, genetics played a prominent role as a posited causative force, while the role of the environment in activating genetic possibilities was absent, or mentioned in what seemed to be a token gesture, without further explication. Mentioning environment in an overwhelmingly biologically focused RFA seems unlikely to result in proposals that adequately address the environment. Psychological/behavioral causes were also important, comprising 5.9% of all causes identified in the RFAs.

Social fundamental causes were presented in just 7.6% of all causal meaning units identified, but even in these cases, factors such as families and experiencing victimization were not contextualized within social structures that stratify individuals into differential exposure to risks. In general there was a considerable propensity to unhinge mental health difficulties from social root causes.

Of the 33 RFAs with solutions to mental health problems presented, 27 were focused largely on individual-level solutions. Overall, individual-level solutions comprised 77.8% of those mentioned in the RFAs; 61.1% of all solutions were biomedical, while 16.7% were psychological/behavioral. Solutions that were categorized
as social comprised 18.7% of the total, but only 2 RFAs clearly mentioned upstream, preventive solutions. Overall, 92.3% of solutions mentioned were aimed downstream, intended for implementation after the effects of mental health difficulties were already under way. Results of the RFA analysis present convincing evidence that supports my first research hypothesis:

RFAs and PAs related to children’s mental health will be dominated by a focus on individual-level causes, especially biological and psychological causes, and individualized solutions put into place after the onset of mental health problems, while social interventions, especially upstream ones, will be marginalized.

Program officers triangulated the findings of the RFA content analysis, agreeing that social and structural interventions were few. Yet they held firmly to a biomedical model for the understanding of mental health. Program officers seemed mostly focused on solving genetic questions and understanding the biology of mental health, reflecting a generally reductionist viewpoint on the causes and appropriate solutions to mental health. The environment and social factors were mostly absent from their consciousness in any definitive way. My second research hypothesis also received support:

Authors of RFAs and PAs related to children’s mental health will articulate a reductionist perspective on the causation of, and appropriate interventions for, children’s mental health problems.

In other words, explanations for children’s mental health both in RFAs and from the perspective of program officers were primarily *personological*, or located within the individual, as opposed to *sociological*, or situated outside of the individual, in contexts
and environments (Dannefer 2010: 5). While study findings did support the idea that *biomania* may operate to influence, and be perpetuated by, federal research policy, there was no evidence that ideologies related to individual responsibility influenced the content of RFAs. When psychological/behavioral causes and solutions were presented, they tended to be vague. Additionally, one respondent specifically stated that there is not a tendency to blame individuals for their mental health troubles, and multiple respondents indicated that reducing the stigma of mental illness is partially responsible for medical framing.

The program officers interviewed were all trained in disciplines where micro-level explanations for mental health are the rule. The question is, therefore, is it reasonable to expect program officers to embrace a perspective that falls outside of disciplinary boundaries? Certainly they cannot be chastised for engaging in their professional work, that is, like all social activity, conditioned by their own contexts. Program officers did consider the environment as part of the equation for mental health. But minimalizing the discussion of environmental influences on mental health represents a *heuristic of containment* (Dannefer 2010:11) within which genetic factors are awarded an undue amount of the variance, including any variation that remains unmeasured by variables intended to represent social contributions. A range of social factors must be included in explanatory models to adequately address the role of the environment, and it would be beneficial for the overall science of mental health to instead maintain a *heuristic of openness* (Dannefer 2010: 12) which recognizes how experience and environment actually have an unlimited capacity to affect human behavior (Jencks 1980).

It is important to note that while I am critical of the institutionalized practices that
reify the assumptions underlying the practice of science at NIH, this is NOT an indictment on the individual program officers who participated in the study. These individuals were clearly highly intelligent, articulate, and competent scientists dedicated to their work and to the advancement of the field. This is also NOT a call to halt biological and psychological research, or even to decrease funding for these areas. It would be unwise and unjust to fail to provide treatments for children who are already suffering. Rather, it is a call to cease the myopic pursuit of a “magic bullet” for mental health and increase attention to social factors research. No one field can claim legitimate, comprehensive understanding of mental health. Children’s mental health is a multidimensional problem requiring the efforts of many disciplines. Additionally, the small number of program officers interviewed, and the manner in which the sample was selected, requires that these findings are interpreted carefully. In no way can conclusions be extrapolated to NIH program officers generally.

My final hypothesis also received support:

Authors or RFAs and PAs related to children’s mental health will identify multiple “nonscientific” factors that influence content.

The process of RFA construction is indeed shaped by multiple actors and institutions which become part of the scientific process, bringing with them interests that are beyond the scope of science.
II. Policy Implications

Study findings suggest several implications both for federal science policy in general and for policy related to children’s mental health. These suggestions represent starting points for discussion based on the conclusions drawn from this study. Further research into the RFA process and beliefs of program officers more generally may reveal more nuanced understandings of the presence and consequences of reductionist thinking at NIH.

First, NIH staff and leadership should engage in systematic reflexivity upon the topics of study and approach to solving health problems currently in place at NIH. Second, social science perspectives must be included in NIH research policy design. Health research policy should aim to achieve balance between social, psychological, and biological research programs, especially encouraging upstream prevention of common risk factors for multiple diseases, and promotion of well-being among the entire population. Third, NIH should work toward institutional autonomy from both advocacy groups and the executive and legislative branches of the federal government. Finally, NIH policy should promote greater transparency surrounding the RFA process.

A. Reflexivity

Reflexivity in the RFA process was lacking in several observable and important ways. When asked to describe the process of RFA construction, program officers described influences ranging from personalities to the director’s knowledge of the
literature to political ideology as affecting the final product. Yet, with very few exceptions, participants did not indicate that these were inappropriate to the scientific process. It seems that these institutionalized mechanisms for the construction of RFAs are widely accepted, or at least not widely or strongly criticized. Likewise, when program officers discussed their own ways of thinking about children’s mental health problems, they embraced a biomedical perspective, sometimes mentioning the importance of the gene-environment interaction, but generally not considering the environment of interest to their own research. However, when they were asked to reflect on the content of RFAs, they often expressed agreement that there wasn’t much attention to social factors, and didn’t disagree (with one exception) that it would be beneficial to consider these as relevant to solving the problem of mental health, only that it would be very difficult. Again, these scientists are working within the paradigm to which they have been trained and socialized (Kuhn 1970). Re-examining their assumptions about the causes and solutions for children’s mental health problems would no doubt be difficult and resisted by members of their scientific community (Kuhn 1970).

Based on my discussion with the Office of Science Policy, impediments to reflexivity also may be culturally produced and maintained, with program officers expected to surrender their personal beliefs to the institution:

...as a scientist working for the government, in some ways your opinions are subsumed by the broader opinions and policies of the organization, which I’m sure is part of the reason why you know you’re experiencing a little bit of uncertainty or non-response from program officers. It’s not, I would say, that having served as a program officer myself, we don’t view our roles as, you know, we are the experts and we are just going to speak with everyone and anyone and
let them know what we think specifically. You know we’re very much part of an organization and quite frankly proud to be part of this organization, but the individual voice is not as loudly heard.

The idea that the organization determines the direction of research has significant implications for what it means to be a scientist at NIH if the pursuit of scientific truths is dictated by bureaucracy.

These observations lead me to conclude that a systematic appraisal of NIH policies related to RFA construction and a commitment to reflexivity regarding the process of creating science are warranted. One recommendation would require NIH to build in regular, paradigm-challenging self-evaluation relative to the approaches and models that are taken for granted as the appropriate guides to their work. The inclusion of social scientists in planning research portfolios would be a first step toward encouraging this reflection.

B. Inclusion of Social Science Perspective

In order to achieve more balance in the research portfolio, as well as bring about the most comprehensive approach to solving the problem of mental health, NIH would benefit from being more purposively inclusive of social scientists, including sociologists and anthropologists, as the research agenda is set. One of the program officers interviewed suggested that having few sociologists employed at NIH might be an explanation for the lack of RFAs focused on social factors research. A dearth of social scientists at NIH is consistent with suggestions that there has been a decline in the influence of social science on U.S. policy since the 1950s (Risman 2009).
According to the NIMH Strategic Plan (2010), “NIMH envisions a world in which mental illnesses are prevented and cured.” But despite best efforts, the biomedical paradigm has thus far failed to prevent or cure mental health problems, only alleviating symptoms in some cases and for some disorders, in other words, demonstrating “the persistent failure of the puzzles of normal science to come out as they should” (Kuhn 1970:68). I would argue that this should be considered a paradigmatic crisis (Kuhn 1970), signaling the need for a new direction for research on mental health. This new orientation must involve the joining of forces among diverse researchers to encourage research and initiatives that address social structural factors in conjunction with biological and psychological ones, and must begin to consider upstream solutions, not just ones aimed at downstream interventions for individuals who are able to, and seek out, services. In practical terms, a true interdisciplinary approach would involve shifting away from the disease model in place at NIH where distinct budgets are allocated by disease, to one where the common risk factors for physical and mental illness are addressed and efforts are refocused on eliminating the fundamental social causes of disease and promoting health for all.

Several groups and organizations have made recommendations for a shift in focus to the prevention of mental health problems and the promotion of well-being in general. The World Health Organization (WHO) has recognized the impact of social factors such as poverty, education, housing, and hopelessness, in combination with biological and psychological factors, as contributors to mental health. WHO (2007) calls for a range of preventive interventions, including those aimed at structural arrangements such as empowering women through education and microloans, school cultural change, housing
policy changes, and community development, among others.

Miles et al. (2010: xv) call for a public health approach for children’s mental health using policy, environmental change, programs, services, education, and social marketing delivered at the individual, family, group, community, tribe, territory, state, and national levels (xvi). Miles et al. also recognize the importance of environmental conditions in the determination of mental health outcomes, and stress addressing parenting practices, schools, communities, unemployment, racism, homophobia, trauma, and chronic stressors (2010: 10), in addition to a host of other structural factors, while improving Systems of Care for the delivery of services to children at risk.

Another group comprised of representatives from the YMCA of the USA, Dartmouth Medical School, and the Institute for American Values (Institute for American Values 2003: 5) calls for “authoritative communities” rather than solely medications to address the behavioral and mental health crisis in childhood. This group posits that these problems are caused by a reduction in connectedness to social institutions, and calls for communities that treat children as an end in themselves, that are warm and nurturing, establish clear limits and expectations, are comprised of non-specialists, are multi-generational, have a long-term focus, transmit an understanding of how to be a good person, and encourage spiritual and religious development and love of neighbor (Institute for American Values 2003: 34). Others (e.g. Marmot 2004; Putnam 2000; Perry & Szalavitz 2006) also stress the importance of connectedness to others as the basis for health and mental health. Structural changes are crucial for setting the stage for re-establishing these bonds. Without sufficient material resources, time unfettered by
parental work responsibilities, safe school and community environments, and adults to trust, it is difficult to envision making this possible for children.

But initiatives to encourage social sciences inclusion in health research have largely been absent of a true sociological perspective, instead reinforcing the dominance of biomedical and behavioral-psychological perspectives. For example, the Institute of Medicine, the foremost health policy advisor to the federal government, had a one-day focus on social and behavioral influences on health at their 2008 Annual Meeting, but while 65 new researchers were elected to membership, not one was a social scientist (ASA 2009). Additionally, NIH launched the Basic Behavioral and Social Science Opportunity Network (OppNet) in November, 2009, to strengthen funding for social science research:

OppNet is a trans-NIH initiative to expand the agency’s funding of basic behavioral and social sciences research (b-BSSR). Basic-BSSR studies mechanisms and processes that influence behavior at the individual, group, community and population level. Research results lead to new approaches for reducing risky behaviors and improving the adoption of healthy practices. (OppNet 2009).

Unfortunately, OppNet’s focus on changing individual behaviors appears to be business as usual – an effort to alter individuals, not the structures that place them at risk. These initiatives are true wolves in sheep’s clothing. Naming something as social, when it is truly psychological, allows for continued dominance of reductionist perspectives. When questioned about the lack of attention to social factors in health research, proponents can point to these programs as evidence of a commitment to social science perspectives,
without actual action to actively refocus research to address social ills.

Social scientists are calling for a Council of Social Science Advisors (CSSA) to the President of the United States to bring social science to the uppermost echelon of government for informed decision-making (Risman 2009). It would seem wise for sociologists to take a significant role in this movement, as well as to utilize the strength of professional organizations such as ASA to assure that there is sufficient representation of sociological interests at the NIH. Sociologists need to subject initiatives such as OppNet to rigorous scrutiny and not allow themselves to become unwitting conspirators in biomania due to funding or other pressures.

C. Institutional Autonomy

Another potential issue for NIH’s research agenda is that of bureaucratic autonomy. According to Carpenter (2001:4):

…autonomy prevails when agencies can establish political legitimacy – a reputation for expertise, efficiency, or moral protection and a uniquely diverse complex of ties to organized interests and the media – and induce politicians to defer to the wishes of the agency even when they prefer otherwise.

A National Research Council/Institute of Medicine report, released in 2003, designed to make recommendations on the reorganization of NIH, made clear that NIH should be free from political meddling and that scientific advisory appointments should be made based solely on relevant expertise (Rettig 2004), not political nepotism. Yet, most, if not all, program officers mentioned the influence of Congress on the content of RFAs, including
the funding of pet projects, and a few discussed how the Administration’s ideology can influence who gets funding. Based on a governmental system in which lobbyists, including corporate ones, have a profound influence on legislators through the funding of campaign coffers, clearly NIH is not independent of political pressures. While NIH does have a reputation for expertise, it seems that the legislative and executive branches influence NIH, rather than solely the other way around. Additionally, the content of RFAs is strongly affected by disease-specific advocacy groups – these organizations are considered legitimate contributors to the RFA process and content of calls for proposals, in addition to influencing Congressional decision-making via lobbying efforts. Presumably those groups with more resources bring more power to the table, garnering more influence over which diseases obtain the most research funding and how the money is utilized. The influence of these external voices and interests calls into question the ability of the scientific communities to focus on the most relevant research questions in pursuit of the truth about the origins of children’s mental health problems and the most effective ways to prevent and treat it.

D. Transparency

A final domain in which federal science policy could benefit from improvements is in transparency. As I commenced recruitment for the interview portion of my study, I quickly became aware of what seems to be a shroud of secrecy surrounding NIH. Program officers were reluctant to speak with me, stating that they are “not allowed” to do so, even when the NIMH Press Office stated that this was not the case. It was unclear
to me whether the disinclination to participate I was meeting with was related to a specific internal policy, or whether it was cultural in nature. I suspected that both might be in play, that perhaps policies were vague, and a fearful culture might exist, especially with one participant expressing the need to “protect” herself by hiding her identity should she choose to participate. In my attempts to recruit a sample, I spoke with several individuals who, as recipients of major grants, have experience working with program officers, as well as one former, and one current, NIH employee. All of these individuals suggested that it would be very difficult to obtain agreement from NIH staff to participate. Only after much effort was I able to speak with a director-level staff member who helped recruit participants.

My suspicions that secrecy was a policy, albeit a vague one, were further advanced after speaking with an individual from the NIMH Office of Science Policy and Evaluation Policy, who informed me that the information I hoped to obtain by interviewing program officers is “proprietary”:

...it essentially means that the decision-making related to RFAs and FOAs in general is considered privileged information so it’s internal to the organization. There is legally sort of the accepted principle that the decisions that are made based on, or related to, these types of things need to have a certain level of buffer for advisement purposes within the institute...

NIMH policy requires program officers to avoid going into detail about the RFA process, but is not clear about what exactly can be discussed:

There isn’t a specific list in terms of what can and what cannot be discussed, which again is why they sent it up to the policy office. Basically anything that is
going to be interpreted as specific information, you know, largely, specific information about a specific RFA, that’s probably going to be off the table. We can certainly talk broadly about the process – how RFAs and FOAs are developed – and I’m happy to go into that with you a little bit. But you know in terms of sort of like what specifically our top topics are and like what specific types of research we are going to be and need to be funding in the future, we, you know, it’s you know not something we can go into…

I don’t know what the entire history of the policy is so I’m not in a position to be going into detail about that, but my understanding is that in order for the best science to be funded, people’s advice into that development process needs to have a certain buffer from scrutiny because as you can imagine, because you know particularly for a number of high-profile mental disorders and especially for mental disorders for specific populations including children, you have very vocal, very active advocacy groups who absolutely, you know and we include them largely in the process, but if every step and every decision were to be out there, you know they would be making phone calls to specific people in our organization to try to influence them one way or another so that sort of factors into it. It’s largely a buffer so that you know the scientists here, with input from scientists and advocacy groups outside the organization are able to develop the best scientific funding opportunities in the long run.

Vagueness about policy related to discussing the RFA process seemed to create confusion for program officers, with some refusing to participate and others speaking with me despite this restriction (although none went into detail about specific RFAs or about any RFAs currently in development, therefore seemingly abiding by the fuzzy guidelines). From an organizational standpoint, it is clear that the uncertainty around this policy is in need of clarification, and perhaps, dissemination. This is not a problem of NIH alone. Surely many organizations have issues with staff awareness and understanding of policy, as well as trepidation among employees of appearing critical of their employer. But more importantly, this policy shields NIMH from public scrutiny – only the key players identified by the institute, and within the context provided for feedback, are part of the discussion surrounding the specifics of RFA development.
The Office of Science Policy officer suggested that the proprietary information policy was in effect to provide a buffer for individual program officers from the influence of advocacy groups. Yet, the policy officer also stated that advocacy groups are part of the process, and my examination of the RFA process from the point of view of the program officers indicated that many institutions and groups influence the content of RFAs. It seems that if the issue is the possibility of program officers being pressured by these groups, there are other ways to discourage this from occurring without limiting the ability of interested individuals to investigate whether the process itself is valid, or whether the content is best suited to the needs of constituents. Instead, it seems one must be a part of the inner circle to even be part of the discussion. So a policy in place to uphold scientific integrity seems to actually impede transparency and potentially inhibits objectivity by limiting the ability of anyone without power to question its legitimacy. While I certainly recognize the necessity of institutional policies to protect program officers from undue influence, this policy seems unnecessarily opaque and creates the impression that there is something to hide relative to the creation of RFAs. I received different and opposing messages from the Press Office and the Office of Science Policy regarding permission to talk with program officers. It seems that NIMH is trying to balance public access as it relates to media scrutiny, with the policy toward actual disclosure of specifics about RFA decision-making being more of a behind-the-scenes effort to control the release of information that may cause displeasure to, and reaction from, certain groups. It may be the case that an investigation attempting to uncover internal dialogue relative to the making of science policy would require gaining access to the group as a stakeholder (then bound by confidentiality policies), or even use of the
Sunshine Act or some other means of compelling disclosure, which is troubling given that taxpayer money funds the work of NIH.

III. Important Limitations

This study has several limitations that merit discussion. First, related to the RFA analysis, I studied requests for proposals, not projects that were actually funded. I would argue that both are important topics of study. The importance of studying RFAs lies in their conveyance of federal priorities related to research. These are publicly available, easily searchable, documents which explicitly outline the topics of study desired by NIH institutes. RFAs, in particular, signal designated funds available and as such have tremendous influence over the proposals designed in response to these requests, and the eventual research that is funded. Study of the proposals submitted in response to RFAs that are funded, as well as funded unsolicited proposals, which, according to a staff member in the NIMH policy office, may constitute as many as half of all proposals, would also provide the opportunity for rich understanding of research priorities and is an interesting area for future investigation. This information is available utilizing a combination of several sources of information available through the National Institutes of Health Research Portfolio Online Reporting Tool (RePORT 2009a, 2009b).

A second limitation related to the RFA analysis is that I examined only those that are related to child mental health, not those that called for studies of mental health with no age specification. I chose child mental health for myriad reasons related to the practical and theoretical import of childhood. It is possible that RFAs designed to
encourage study of the population more broadly may have relatively greater focus on social causation and solutions. It could also be the case that RFAs designed to stimulate study of mental health in an older population might be more likely to recognize the influence of environmental factors or focus on prevention. Another study of federal funding priorities, one centered on HIV, also found a tendency toward problem individualization (Rudzinski, Marconi & McKinney 1994). That study, which focused on funded projects, found that 80% of projects and 91% of all funds awarded were for studies of “individual attitudes or behaviors” (Rudzinski, Marconi & McKinney 1994: 264). Finding individualization in another area of federal funding suggests that this might be an NIH-wide problem, not limited to children’s mental health and signals that it is all the more important to investigate this tendency in other domains.

Finally, related to the interviews of program officers, it is possible that there were biases in program officers who selected into the study due to the recruitment of all but one by a single high level officer. These respondents may have been particularly likely to espouse the biomedical view; they may have run in the same “circle” of research interests with that focus. Expanding the scope to many NIMH and related officers would be fascinating, yet seemingly nearly impossible due to the institutional obstacles posed by the Office of Science Policy and Evaluation.

IV. Future Directions for Research

The research questions examined in this study represent just the tip of the iceberg in terms of potential topics of investigation relative to children’s mental health funding
streams and how these might translate into a continued focus on downstream, individual-level interventions to the exclusion of upstream, social ones. Prospective areas for further investigation within the federal grant-making process include examining mental health funding across the life course, extending the study to incorporate funded and unfunded proposals received by the National Institutes of Health, and studying other actors in the RFA process. Additionally, considering National Science Foundation (NSF) research funding, and comparing federal backing of research and services to other types of funding, such as corporate and foundation support of research, and Medicaid and private insurance funding of services could provide insight into whether upstream, social interventions have a place at the funding table within other contexts.

A logical first step for continued research would be to extend the study to investigate whether calls for proposals favoring reductionist approaches to children’s mental health are mirrored across the life course. While it would seem that childhood would represent a prime time for preventive services, it may be the case that institutes focused on other age groups have a more socially-oriented research agenda, including the National Institute on Aging.

Second, it would be wise to investigate whether RFAs translate into actual applications and funded proposals that favor micro-level units of analysis and individual interventions. Do investigators respond to reductionist RFAs with like proposals? Do investigator-initiated applications follow the same trend or are these more apt to extend to consideration of social factors? Studying what types of studies do and don’t get funded could be particularly revealing. For example, if upstream proposals are submitted, but not funded, this would represent a fundamentally different problem than if no upstream
proposals are submitted at all.

Additional actors who influence the content of RFAs could also provide a view into the ultimate product of RFAs and the relative importance of social factors research at NIH. Because Congress ultimately decides how much money is allocated to various institutes, understanding the way members of Congress think about causes and solutions for health and mental health is imperative. A study of factors influencing legislators’ decisions in the House and Senate of two states concluded that the legislators’ personal values and opinions were the most important factors in legislative voting (Songer et al. 1985). Considering this finding, perceptions of legislators related to mental health problems have the potential to greatly influence the distribution of funds.

Other NIH institutes, including the Office of Behavioral and Social Science Research (OBSSR), and the Substance Abuse and Mental Health Services Administration (SAMHSA) also warrant study. Unfortunately, OBSSR only contributed one, and SAMHSA didn’t add any RFAs to the content analysis and therefore were not included in the interview sample. RFA content arising from these institutes may differ and program officers could have viewpoints counter to those included in this study. The perspectives of institute directors and study sections would also be helpful in understanding final funding decisions. Unfortunately, in reality, there would be great difficulty in doing any additional research involving NIH actors due to their reluctance to talk and NIH policies surrounding proprietary information.

Investigators’ perceptions of the content of RFAs are also highly relevant. Do investigators feel that there is sufficient funding of social factors research and services? Would they focus their energies on upstream activities if they felt that funding was
available in this area? Do they feel that they must modify their research plans to fit funding announcements, or do they stretch the boundaries with investigator-initiated proposals?

Other mechanisms of funding research and services should also be examined. According to a presentation given at the National Science Foundation (NSF) Regional Grants Conference (NSF 2010), compared to NIH, NSF is “more open to risky, exploratory, paradigm-challenging work,” and doesn’t do “medical science research.” The budget for the Social, Behavioral, and Economic Sciences Directorate of NSF is $255 million within a total foundation budget of $7 billion, indicating relatively low priority compared to physical and natural sciences. Examination of NSF-funded proposals would shed light on whether social factors research is more likely to take place under this funding structure.

Finally, an important avenue is to explore funding of services, including Medicaid and private insurance, and programs funded through SAMHSA and private foundations. Does the failure to fund services that may actually address the root problems of children’s mental health extend beyond the government? The funding of research and services related to children’s mental health, and to social problems generally, represents a vast and important research endeavor. The shaping of causes and solutions for these problems based on available funding to address them has profound implications for individuals affected by a range of difficulties. As scientists, we must consider our scientific actions, and how these affect those whose problems we aim to solve.
APPENDIX A: PARAMETERS OF EXTRAMURAL FEDERAL RESEARCH GRANTS: MECHANISMS AND TYPES OF FUNDING

There are several mechanisms for distribution of extramural federal research grant monies. Research project grants entail “discrete, specified, circumscribed projects to be performed by named investigators in areas representing their specific interest and competencies” (NIH 2010d). Research centers grants are “awarded to institutions on behalf of program directors and groups of collaborating investigators. They support long-term, multi-disciplinary programs of research and development” (NIH 2010e). Research career grants support scientists in various stages of career development. Research training grants are awarded to institutions to support training programs, or to individuals in the form of fellowships (NIH 2010f). Contracts, which are issued for specific goods or services (NIH 2010g), are not relevant to this topic of study because these do not play a significant role in the federal funding of research.

Grants activities codes describe the type of funding available: R awards are for research grants, K awards are for career development, P awards are for program projects/centers, and T awards are training grants (NIH 2010h). The Research Project Grant (R01) is “an award made to support a discrete, specified, circumscribed project to be performed by the named investigator(s) in an area representing the investigator's specific interest and competencies, based on the mission of the NIH.” Small Research Grants (R03) are designed “To provide research support specifically limited in time and amount for studies in categorical program areas. Small grants provide flexibility for initiating studies which are generally for preliminary short-term projects and are non-renewable”. Exploratory/Developmental Grants (R21) are “To encourage the
development of new research activities in categorical program areas. (Support generally is restricted in level of support and in time.)” The R21 grant mechanism is intended to encourage exploratory/developmental research by providing support for the early and conceptual stages of project development. Finally, the *Clinical Trial Planning Grants* (R34) are designed “To provide support for the initial development of a clinical trial, including the establishment of the research team; the development of tools for data management and oversight of the research; the development of a trial design and other essential elements of the study, such as the protocol, recruitment strategies, and procedure manuals; and to collect feasibility data” (2010g). Figure 2 displays the organization of NIH funding mechanisms.
Figure 2: NIH Research Mechanisms (NIH 2010i)
APPENDIX B: INTERVIEW GUIDE

Thank you for agreeing to speak with me. I am studying research policy related to children’s mental health for my dissertation and am interested in learning about your experiences with the RFA process related to children’s mental health and your thoughts about children’s mental health in general. I have several questions but expect the interview to last less than an hour.

Before we begin, do you have any questions regarding informed consent? Or any other questions?

I’m interested in how RFAs are developed.

1) How do you determine the problems that will be the focus for RFAs?

2) Can you describe for me the process by which this occurs? What happens first?

3) Who does the research that provides the background for RFAs?

4) Who develops the research priorities?

5) Who develops the service priorities?

6) Basically, who or what influences this process?
   a. Scientists, advocacy groups, corporations, etc? Who has the most influence? How do they interact?

I would next like to ask you about your impressions related to the mental health of American children (up to age 18).

7) What do you see as the most important mental health problem facing American children?

8) What populations of children are most affected by mental health problems? In what ways?

9) What do you think the causes are for this problem?

How important are genetics?
How important is biochemistry?
How important are individual habits/behaviors?
How important is the family environment?
How important is the neighborhood environment?
How important are environmental causes such as pollution, food quality, and housing
quality?
How important are social institutions such as schools?
How important are structural causes such as poverty, inequality, and lack of opportunity?
How important are cultural factors?

10) What factors played a role in shaping your opinions of the causes?

11) I am also interested in what solutions you believe should be employed to solve this problem:

How important is gene therapy?
How important are pharmacological treatments?
How important is health promotion?
How important is individual therapy?
How important is family therapy?
How important is the prevention of child abuse and neglect?
How important are work policies?
How important is focusing on safe neighborhoods?
How important is housing policy?
How important is addressing disparities in access to the mental health system?
How important is equality of education?
How important is equality of opportunity?
How important is eliminating poverty?
How important is eliminating socioeconomic inequality?

12) What factors played a role in shaping your opinions of the solutions?

13) For the most part, do you feel that others in your department share your views regarding the causes and solutions for this problem?

I recently completed a content analysis of RFAs related to children’s mental health and found that the vast majority of causes posited for children’s mental health problems were individual in nature—for example, genetic, biochemical, or psychological as opposed to being related to the environment, experience, or context (84.2% - another 8.2% were individual-in-context and 7.6% were social). Additionally, solutions were primarily targeted at the individual level such as individual therapy or psychopharmacological interventions (77.8%) and just 7% could be considered “upstream,” preventive interventions.

(It has been suggested that social factors play a role in the development of child mental health problems, and I have seen evidence presented that seems to suggest that this is often the case. For example, research is accumulating that socioeconomic status, neighborhood factors, schools, family context, social support, and traumatic experiences all play a significant role in the making of children’s mental health problems.)
Additionally, age, race/ethnicity, and gender are significantly related to child mental health; while these three factors are measured at the individual level, they reflect social arrangements. Variations in mental health by age, race/ethnicity, and gender reveal trends that cannot be explained by developmental, genetic, or hormonal differences alone.

14) Does this finding seem to coincide with your experience related to grant funding for children’s mental health?

15) Why, despite evidence that there are significant environmental, experiential, or social contributions to the development of mental health problems, are the vast majority of RFAs focused at the individual level? What are the advantages or disadvantages of this focus on individuals?

   a. Are there individuals who keep this in place? Who? How?
   b. Are there organizations that keep this in place? Which ones? How?
   c. Are there political processes that keep this in place? How?
   d. Are there cultural attitudes or ideologies that keep this in place?

16) Is the focus on individuals viewed as problematic among those responsible for RFA creation?

   a. Why or why not?
   b. Who does or doesn’t view this as problematic?
   c. What have they done about it?
   d. Does focusing on individuals result in “blaming the victim”?

17) Is the lack of focus on social causes viewed as problematic among those responsible for RFA creation?

   a. Why or why not?
   b. Who does or doesn’t view this as problematic?
   c. What have they done about it?
   d. Do people know about structural causes? Do they understand? Do they care? Are there biases/ideologies? Is it a conscious decision?

18) How do individuals of various disciplines interact to create research policy related to children’s mental health?

19) Are there areas for innovation in framing the causes and solutions of children’s mental health? Are there ways that you think the process could be improved? What are barriers to accomplishing this?

20) What is the federal government’s role in solving problems related to children’s mental health?
Finally, I would like to know a little bit about you and your position:

What is the highest level of education that you have completed?
What was your field of study?
What is your title?
Can you tell me briefly about what your responsibilities are?
What department/division does your position fall under?
How many years have you held this position?
What previous positions have you held?
APPENDIX C: CAUSAL LANGUAGE IDENTIFIED IN RFAs

Table 6

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exacerbated by</td>
<td>Developmental changes in</td>
</tr>
<tr>
<td>Influence on/influence the need for</td>
<td>Mediate/moderate</td>
</tr>
<tr>
<td>Risk factors/risk processes</td>
<td>Modulate</td>
</tr>
<tr>
<td>Origins of</td>
<td>Induced by</td>
</tr>
<tr>
<td>Contribute to/contribute to the development</td>
<td>Determinants of</td>
</tr>
<tr>
<td>course of</td>
<td>Triggers</td>
</tr>
<tr>
<td>Involved/implicated in the etiology of</td>
<td>Continuous with later expression of</td>
</tr>
<tr>
<td>Give rise to</td>
<td>Lead to/leading to</td>
</tr>
<tr>
<td>Mechanisms behind/mechanisms</td>
<td>Heralds the onset of</td>
</tr>
<tr>
<td>leading to/mechanisms of pathogenesis</td>
<td>Implicated in</td>
</tr>
<tr>
<td>Epidemiology of</td>
<td>Reaction to</td>
</tr>
<tr>
<td>Effects of/effects on</td>
<td>Face devastation from</td>
</tr>
<tr>
<td>Linked to the pathophysiology of</td>
<td>Direct effect</td>
</tr>
<tr>
<td>Underlying</td>
<td>Worsened by</td>
</tr>
<tr>
<td>Affect/affecting the process of development</td>
<td>Shape the development of</td>
</tr>
<tr>
<td>Role in the formation/role in</td>
<td>Following</td>
</tr>
<tr>
<td>modifying/role played in/role on</td>
<td>Evoked by</td>
</tr>
<tr>
<td>Governing</td>
<td>Involved in the development of</td>
</tr>
<tr>
<td>Regulating/regulate</td>
<td>Sensitive to</td>
</tr>
<tr>
<td>Impact/impact on/impact of</td>
<td>Increase</td>
</tr>
<tr>
<td>Controls</td>
<td>Antecedent</td>
</tr>
<tr>
<td>Result of/result in</td>
<td>Consequence of</td>
</tr>
<tr>
<td>Emergence of/emerging in/emerge as a function</td>
<td>Altering</td>
</tr>
<tr>
<td>of/emerge in</td>
<td>Interferes with</td>
</tr>
<tr>
<td>Participate in</td>
<td>Relates to later</td>
</tr>
<tr>
<td>Factor in/factor in development</td>
<td>Sequelae/morbidity of</td>
</tr>
<tr>
<td>Relationship to</td>
<td>Precursors</td>
</tr>
<tr>
<td>Causal relationship</td>
<td>Produces</td>
</tr>
<tr>
<td>Constitute risk/influence risk</td>
<td></td>
</tr>
<tr>
<td>Precede</td>
<td></td>
</tr>
<tr>
<td>Cause</td>
<td></td>
</tr>
<tr>
<td>Impact</td>
<td></td>
</tr>
<tr>
<td>Initiate</td>
<td></td>
</tr>
</tbody>
</table>
Dear (Name):

I am a Ph.D. student in the Department of Sociology at Case Western Reserve University. I am currently conducting my doctoral dissertation research project about the processes involved in the definition of problem areas and the construction of RFAs relative to the federal funding of children’s mental health research and services. To understand these processes, I am hoping to interview a number of experts who have a perspective on these processes and their antecedents and consequences. As part of this component of the project, I would very much appreciate the opportunity to talk with you.

I am writing to ask if you would allow me to interview you for this research. Given your experience and expertise, your participation would be a valuable addition to the project. You were identified for inclusion in this study because you were a contact person for one or more RFAs related to children’s mental health in the past. For my purposes, it is not important whether you are presently working in such a role. What is important is that you have had an opportunity to observe and participate in these processes. Because of that experience, you are in a unique position to help me understand these processes. A better understanding of how children’s mental health is defined, and how federal funding of research and services related to children’s mental health is accomplished, has important implications for the children and families affected by these problems.

I hope that you will agree to share your thoughts and experiences about your work. All responses will be kept confidential – your name will not be associated with any quotations that I utilize in my dissertation or any future publications. Additionally, I have submitted information regarding my study to Jim McElroy at the NIMH press office, and have been informed that I do not need clearance or approval from the office to speak with you.

I have attached a copy of the informed consent document which provides more information about study procedures. I will be contacting you by phone in the next week to request your participation. If you agree to participate, we can schedule an interview by phone or in person at that time, and I can answer any questions you might have. In the meantime, please do not hesitate to contact me if you have questions, I would be glad to provide you with more information. Additionally, I am working closely with my dissertation advisor, Professor Dale Dannefer, on this project. You may also contact him at (216) 368-2700, or dale.dannefer@case.edu.

Thank you very much for your consideration. I recognize that you have a very busy schedule, and will greatly appreciate it if you could take time to assist with the study. I look forward to speaking with you.
Dear (Name):

I am a Ph.D. student in the Department of Sociology at Case Western Reserve University. I am currently conducting my doctoral dissertation research project about federal funding of children’s mental health research and services. For this project, I am conducting interviews to learn about the professional work and ideas of people involved with constructing RFAs.

I am writing to ask if you would allow me to interview you for this research. Given your experience with several RFAs related to child mental health and your expertise, your participation would be a valuable addition to the project. I know that you are very busy and I appreciate any time you are willing to give.

If you agree to participate, we can schedule an interview by phone at your convenience, and I can answer any questions you might have. In the meantime, please do not hesitate to contact me if you have questions. I would be glad to provide you with more information.

Thank you very much for your consideration and time. I hope that we can speak soon.

Sincerely,

Lynn Falletta
Doctoral Candidate
Department of Sociology
Case Western Reserve University
10900 Euclid Avenue
Mather Memorial Room 226
Cleveland, OH 44106
Lynn.Gannon@Case.Edu
APPENDIX E: INFORMED CONSENT DOCUMENT

INFORMED CONSENT DOCUMENT
Federal Funding of Children’s Mental Health Research and Services through the Request for Applications (RFA) Process: A Social Activity

You are being asked to participate in a research study about the Requests for Applications (RFA) process as it relates to children’s mental health services and research. You were selected as a possible participant because of your professional expertise. Please read this form and ask any questions that you may have before agreeing to participate in the research.

Background Information
A doctoral candidate at Case Western Reserve University is conducting this study. The purpose of this research is to explore how RFAs are developed, including what individuals, groups, and ideas influence the development of RFAs related to children’s mental health. I am also interested in your opinions regarding causes and solutions for children’s mental health problems.

Procedures
If you agree to participate in this research, you will be asked to participate in a semi-structured interview. The interview will be scheduled at your convenience, either in the vicinity of your office or by phone, and will last approximately 1 hour. If you agree, this interview may be audio-recorded. Please ask the researcher any questions you may have about this project, and take whatever time you need to consider the consent form.

Risks and Benefits to Being in the Study
The only known risk of this interview is the risk of boredom during the interview itself. There are no additional foreseeable risks. Except for the general “benefit” of being invited to participate in a project that attempts to broaden understanding of consequential social processes, there are no known benefits of participation.

Confidentiality
The records of this research will be kept private, and participants’ names will not be disclosed. If you choose to participate in this study, you may request a transcript of your interview for your review. Research records will be kept in locked/password-protected files, and access will be limited to the researchers, the University review board responsible for protecting human participants, and regulatory agencies. Audio recordings will be destroyed within eight years of the completion of the study.

Voluntary Nature of the Study
Your participation is voluntary. If you choose not to participate, it will not affect your current or future relations with Case Western Reserve University. You may discontinue the interview at any time. There is no penalty or loss of benefits for not participating or for discontinuing your participation.

**Contacts and Questions**

The researcher conducting this study is Lynn Falletta, the dissertation is being chaired by Professor Dale Dannefer. You may ask any questions you have now. If you have any additional questions, concerns or complaints about the study, you may contact the researchers by phone at 216.368.2700, or by writing to: Case Western Reserve University; Department of Sociology; 10900 Euclid Avenue; Mather Memorial #226; Cleveland, OH 44106-7124. You may also contact Lynn by email at lynn.gannon@case.edu, and Professor Dale Dannefer at dale.dannefer@case.edu.

If the researchers cannot be reached, or if you would like to talk to someone other than the researcher(s) about: (1) questions, concerns or complaints regarding this study, (2) research participant rights, (3) research-related injuries, or (4) other human subjects issues, please contact Case Western Reserve University's Institutional Review Board at (216) 368-6925 or write: Case Western Reserve University; Institutional Review Board; 10900 Euclid Ave.; Cleveland, OH 44106-7230.

You will be given a copy of this form for your records.

**Statement of Consent**

I have read the above information. I have received answers to the questions I have asked. I consent to participate in this research. I am at least 18 years of age.

☐ YES, I CONSENT to being audio/video recorded.

I also understand that I reserve the right to change my mind;

☐ NO, I DO NOT CONSENT to being audio/video recorded.

Print Name of Participant:__________________________________________________

Signature of Participant: ___________________________ Date:__________________
### APPENDIX F: CATEGORIZED SOLUTIONS TO CHILDREN’S MENTAL HEALTH PROBLEMS IDENTIFIED IN RFAS (TREATMENT TYPES)

**Table 7**

<table>
<thead>
<tr>
<th>Alternative Treatment</th>
<th>Individual Preventive</th>
<th>Individual In-Context</th>
<th>Social Preventive - Downstream</th>
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</thead>
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<td>Alternative Treatment</td>
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<td>Individual In-Context</td>
<td>Social Preventive - Downstream</td>
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<td>molecular prevention</td>
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<td>neuroendocrine</td>
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<td>shortened assignments</td>
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<td>hormonal prevention</td>
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<td>Family</td>
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<td>Behavioral</td>
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<td>Multi-systemic family therapies</td>
<td>preventive strategies to reduce risk of disruptive behavior problems</td>
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<td>parent education</td>
<td>preventive programs for diverse/different ethnic groups</td>
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<td>behavioral interventions</td>
<td>parent management</td>
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<td>Interventions</td>
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<td>neuroendocrine treatment</td>
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<td>reduce occurrence of mental health problems within subclinical populations</td>
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Types of Prevention:
- Interpersonal
- Universal
- Preventive - Nonspecific/Upstream
- Universal
| social skills programs | universal preventive interventions |
REFERENCES


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