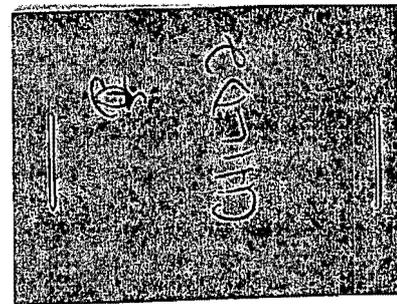


**PRESS BRIEFING ON THE BRAIN CONFERENCE  
APRIL 14, 1997**



HRC: We are, this week, going to have a conference about the latest on brain development in young children and implications of that for every sector of society; starting with parents and family members, including educators, community leaders, political and business leaders, and the like. This is an issue that we believe has absolutely profound implications for how we view and treat our youngest children. And it certainly has such implications for how families perceive [inaudible] of their babies, and what it must mean, we hope, for them in terms of the parenting that goes on. But it also has implications, for the larger society, in terms of public policy grounds.

At the conference on Thursday, you'll be hearing from only a few of the experts and leaders in this field as well as people from various organizations that are attempting to implement what this research means for young children. We are fortunate to have two experts with us today, who have been involved in this research and the policy implications of it for many years, and will be speaking to that.

Dr. Alexander is the Director of the National Institute of Child Health, it is, I think fair to say, Dr. Alexander, the premier institution in the world for research into child development. It is a federal government agency, funded by the federal government, without which it would not exist, could not have done the ground-breaking work that has flowed from the years of investment in this kind of work. And Dr. Alexander is one of the members of a broad committee that has put together a report that you're getting an advance copy of, in the material in front of you, called 'Rethinking the Brain'. There's just an enormous amount of information in here that you'll get a chance, at least to review, later.

Dr. David Hamburg is the current President of the Carnegie Foundation, he's a psychologist [?], he started his career at the National Institute of Child Health and Development. He has served on the faculties of premier universities in our nation. He has been a leader in the effort to try to take what medicine and scientific research tells us, and put it into practice. Most recently, through his leadership at the Carnegie Corporation, he has been sounding the alarm, if you will, but also providing the data, about what we need to do for our youngest children. In your material also, you'll have a copy of the Carnegie Corporation's report called 'Starting Points', which I believe is one of the best explanations of this material for lay people, like me, that there is anywhere in the country.

Part of the reason why I'm so excited about this, and why I think it's so important, is that for so many years, I've worked on behalf of children's issues, and worked to take what scientists like Dr. Alexander and Dr. Hamburg have done, and put it into usable form for policy. It has been, I think, an ongoing challenge to try to take scientific research and translate it into usable form. When I wrote my book, 'It Takes A Village', it was shortly after 'The Bell Curve' had come out, and there was a lot of talk, and quite a bit of hype about 'The Bell Curve.' And the message of 'The Bell Curve' that was being translated by the media was that, you were born with whatever kind of brain you had, the capacity you had, and there wasn't much anybody could do to reshape

that intellectual potential. So, why spend all this time worrying about things like prenatal care and early childhood education. It was, in many ways, a very pessimistic message about human capacity that looked like it was all dressed up in science.

When I wrote my book, I deliberately wrote a chapter, which I've given you a copy of, that in the best way I knew how, and in as simple terms as I understood it, takes some of this scientific research, and explains why we are the result of both nature and nurture. The debate about are we the result of genetics or the environment should really be called a draw, we are the results of both. And, what we're finding out is how each is shaped and what we can do to try to maximize our potential development both by the environment and using the information that we have now from genetics.

I wrote this chapter saying that the bell curve is curve ball because I thought the implications of that message would be ultimately counter-productive both to parenting, because if parents believe that there is nothing they can do, that genetics is the primary motivating force of a child's development, than they would not be as engaged as a parent. And if the rest of us thought that it didn't make any difference what our public policy was, than we'd essentially be leaving parents to their own devices. While I'm grateful that my efforts were not a single, tiny voice, because shortly after that, Starting Points, and this cascade of research began. Research was just pouring out in ways that I think are going to be very hard to ignore.

We think there are some common sense steps that individuals and institutions can take, and we'll be laying some of those out on Thursday at the conference. Before the conference, on Wednesday, I'll be having a press event, announcing the extension of a program I've talked about before called 'Reach Out and Read', a Prescription for Reading program. To reach as many parents and adults as possible that reading to children, singing to children, all these old-fashioned ways that we used to relate to children are not only a good way to create a good feeling in children, to develop a warm relationship, but they actually build the brain of a child.

So with that, building the brain, I want to turn to our two experts to explain, far better than I, what all that means, and what we should be talking about. And those of you who report on big issues that affect the news everyday, might be thinking about this, which is not so easily understood to be as dramatic as it is, can have more impact on how we live, and what kind of country we have, and what kind of capacity our children have, than what passes for news on a day to day basis. So with that, I would like Dr. Hamburg to take the floor.

Dr. Hamburg: Thank you very much. From my background in biomedical research and education and patient care over many decades, with a boost coming from NIH in the 1950's, and stints on the faculties of Stanford and Harvard, I increasingly came to feel that it's very, very important, in a democracy, for people to understand very broadly, what is the latest, up to date, scientific information with respect to any important issue that affects peoples lives, as far as healthy child and adolescent development, education, getting a good start on life.

So, when I came to be President of the Carnegie Foundation, technically called the Carnegie Corporation in New York, because Andrew Carnegie ran out of names by the time he got to the

Foundation, but anyway, I felt that one of the main things we could do, would be to prepare from time to time, an intelligible, credible census on our knowledge of each phase of child and adolescent development. That is to look at the emerging scientific and professional consensus. What do we know about the essential requirements for healthy development in early childhood, middle childhood and early adolescence and later adolescence? So, I hoped, in my time, that we could cover the first two decades of life, in a reasonably systematic way. These [inaudible] were meant to be credible because they were based on the scientific research to the maximum extent possible. And also on community innovations that tried to put the knowledge to use for the benefit of children on a wide scale. And that they would be intelligible, because we would try and translate them from technical language to the language that would be meaningful to educated readers.

That's what we've tried to do with a series of reports, each of which is prepared by a distinguished body that's composed in the following way: About half are experts on the subject matter, albeit in different disciplines and backgrounds, and the remainder are from powerful sectors of the society that had a stake in the problem, or a reason to be concerned about it, even though they are not technically experts on the subject matter. People from business and from media, and from various other sectors of the society, the military and what not. They're carefully vetted and reviewed, these reports are, before they come out. There have been a series which we're trying to oppose now, they wanted to take it chronologically, the one on 0-3 is called Starting Points, and what we claim for it is that it has the most attractive picture of a baby on the cover as any of these. There's a little competition going between Time and Newsweek and Carnegie and the brain research report about who has the best picture of a baby on the cover. Aside from that, our Foundation has been very actively cooperating with all of these efforts to build public understanding of what the research says. The kind of thing coming out of Dr. Alexander's institute and other institutes around the world.

First of all, you get the facts straight, and then to try and consider what it might mean for parents and for community organizations. The way of structuring the problem in this developmental strategy, from conception through adolescence, is to ask what it is that people need to understand, to get the facts straight, and then to say, well, who could do something about that. Who could put that knowledge to use? And so we come to look at a set of pivotal institutions, sort of front line institutions, who everyday, have an impact, for better or for worse, on child development. That starts with the centers on strengthening families, but it also has to include the schools, in this case, early childhood education, pre-school schools, and it includes community organizations, including religious ones, it includes the media, whose impact, everyday, on parents and children, is very significant. Of course, it includes the health care system.

Surrounding that set of front-line institutions, are other, powerful institutions in society, that can make their job easier or harder. I mean by that, government at all levels, business, scientific community, various relevant professions. So, we're saying that it takes a village and then some, really the whole society, as a set of institutions that bear on child development, whether we like it or not, they do have that bearing. We've tried to ask, how can each institution strengthen it's contribution to health child development? That is the framework we used on the case of Starting Points. First we looked at, which came out just three years ago this month by the way, that

report looks at brain development, but it looks at the development of the whole child. The brain is a very important part of the child, and it looks at it from conception on up. It's a very dramatic time from development from just two cells, to a zillion cells in utero, and the transition from being in utero, to being outside and then the first human attachments which are the underpinnings for decent human relationships throughout the life span. And that fantastic exploratory curiosity which needs to be nurtured if you're going to look toward life-long learning. So, it's a very dramatic period, perhaps the most dramatic period, that 0-3.

We try to lay out what science has to say in an intelligible fashion, and then, we took four thrusts to try to make use of the knowledge for the benefit of children everywhere. One thrust has to do with preparation for responsible parenting. That is not only after pregnancy, but before pregnancy. We lay out a whole array of possibilities, ways in which people can be ready for responsible parenting. The second thrust is in health care, and primarily comprehensive prenatal care, and comprehensive primary care. We try to spell out how preparation for responsible parenting can be done, how comprehensive prenatal and primary health care can be done. The third thrust is on child care, early childhood education. What constitutes quality child care? How do you recognize it when you see it? How can quality be strengthened, and quality care made available throughout the country? It certainly is not at the present time. There is a new study on this from the NICHD released just last week. The fourth thrust of Starting Points is on community mobilization. That is the community, the village. How do you get the resources of decent, well meaning people, parents and community organizations, media and business in a community, coming together to assess what our needs are with respect to young children. And, how can we mobilize in this community to meet those needs? There are a lot of different ways of doing it all across the country.

My last point would be that although these four thrusts of making use of the knowledge are subject to evaluative research so we can tell what works for whom under what conditions, that's not always the case, evaluative research lags behind. You have to make the best judgement you can about what's the best set of measures to take. The thrust of it is to pool our strengths and share the burdens in communities to provide the necessary conditions for healthy childhood development to stimulate brain and other development in the most constructive ways.

There are working models around the country. We tried to evaluate the working models as best we could. We tried not to just stick with hypothetical ideals. 'Wouldn't it be nice if you could do so and so.' That can be useful but we tried to say, here are communities in which working models exist. For example, in which community organizations are reaching out to their families and young children in ways that get poor children taken care of better than we've done in the past. The many, many examples scattered all through Starting Points, we tend to put in boxes. It's all about taking the research, as it evolves, and trying to understand it, have it largely understood, and putting it to use for the larger benefit of children everywhere.

Dr. Alexander: Thank you. I'm going to talk primarily about research, and I do this from the perspective of a developmental pediatrician whose entire career has been at the National Institute of Child Health and Development at the National Institutes of Health. It's been my good fortune for the last ten years to serve as Director of that institute. Research is really the underpinning for

this conference. It's in recognition of the importance research, of what it's contributing, and what it's telling us, that has really been the impetus for this White House conference. The Carnegie Corporation has done an enormous service by bringing together this research and pointing out how important it is for public policy. What we're trying to do with this conference is give increased visibility and enhanced attention to the importance of what that research is telling us.

That research has largely been funded by the federal government, mainly through the National Institutes of Health. Research in other areas, such as transportation or the environment, is funded more by the private sector than by the government. Even research on adult health is funded 50/50 by the government and the private sector. When you get to research on children, the government is almost the only game in town. Probably 95% of the research on children, child health, their development, their education, justice issues, and so forth, is funded by the federal government. And the importance of that work to the Clinton Administration is evident by the increase in funding that research has received in the last four years. Most of the research that you're going to be hearing about at this conference on Thursday has been funded by various institutes of the NIH. Lots of it will be reporting on discoveries from the last 20 years, during which time we have learned more about the brain and it's development than all previous time put together.

Much of this research has policy implications. Some of it, unfortunately, is ignored by policy makers at the government level, but it's also often unknown by parents, by educators and others. It's important for us to be reaching all of those audiences with that information. The conference really focuses on the convergence of two areas of science. First is basic studies of the anatomy and physiology of brain development, and second is basic behavioral studies of child development. If we look at these behavioral studies, it's amazing what we've had to learn, and sometimes unlearn in what we thought was the case. For example, we thought that newborn babies couldn't see, and we have discovered that in fact they do see, and they see quite well. And in fact, within a few weeks, they're able to differentiate between their mothers' face and a strangers' face. We thought they couldn't hear very well, and we've found that is also incorrect. Within a very short time, babies are able to discriminate their mothers' voice from the voice of someone else. We thought that they were not able to feel pain, but in fact they do feel pain. They are able to experience emotion and show that in ways other than just crying. They learn very quickly, especially in the first three years.

Their positive or negative experience in the environment that provides stimulation to them is extremely important, and, in fact, there may be critical periods for particular stimuli to have occurred or they do not make particular gains in development. We've [inaudible] a critical period from animal research, it's not so clear in human studies, it may be more like prime times rather than critical periods, but it is an important concept for us to understand. We have also learned that stimulation children receive in their first three years is so important, that children that receive that stimulation do better in the long term than those who do not.

Now, what have we learned from brain studies that relates to this. What really gets people excited in this area is not only what we've learned, but what we've been able to see from our

studies of brain development. We can actually see the difference that environmental stimulation makes in brain development, physiologically and anatomically. The human is unique in the amount of brain development that occurs after birth. If you consider animals, I don't know how many of you have ever witnessed the birth of an animal like the horse, the birth process is pretty incredible. But what is absolutely mind boggling is that within 15-30 minutes, that horse is standing up, walking around, and within an hour or so it's trotting. It takes humans 5 months to sit up and 6-8 months to crawl, and 12 months to be able to walk. So, we're so different from the rest of the animal kingdom in the amount of development that occurs after birth.

It's an extremely important time. Much of this development occurs in the first three years of life. By age 3, the brain has reached 80% of its adult weight, compared to 20% or 25% of the child's overall weight being the portion of the adult. We have also learned that we are not born with all the nerve cells we will ever have. Some multiplication of nerve cells continues after birth, but the most important process is that of pruning of nerve cells, that is a selective loss, or selective dying off of nerve cells, and the ones that are stimulated are the ones that are maintained. The process after birth more than the process that involves nerve growth, is the process of proliferation of connections between the different nerve cells.

These connections are what's so important for our physical mobility, for our learning, for our memory, for emotional function, for basic bodily function. It is this proliferation of connections that you can actually see. And, you can tell the difference between an animal that's been placed in a stimulating environment, and one that has not, by the number of connections that develop, and the ways in which they are developed and maintained.

What we have learned from these studies is that this proliferation occurs in response to stimulation. The unstimulated animal, whether it's an intact animal or whether we use human tissue nerve cells in culture, develops far less of these connections that are so important, than the stimulated animal does. We have also learned that these connections are maintained in response to stimulation. It's important that not all of these connections are maintained. Like an apple tree that has too many branches for its healthy production of apples, the brain cells develop far more connections than they actually need. So there is a very active pruning process, much of which occurs in the first three years of life, that eliminates, selectively, some of these connections. The ones that are maintained, again, are the ones that tend to be stimulated. These connections then become the basis for facilitated action. Motor skills, speech, language and communication skills, emotional responses, memory skills, sensory skills, whatever.

It's also important to understand that 0-3 is time of the most rapid pruning that occurs at any time throughout life. We can develop, and do develop, more of these connections during a lifetime, and this is probably the basis of further physical training, memory development, and so forth. But, it's less easy to develop these after the first three years of life. That's the basic message I think you're going to hear from the neuroscientists that will be speaking at the conference on Thursday.

This information does, obviously, have some policy implications. First of all, it tells us that the ages of 0-3 are critical in child development, with life-long implications. Now, this isn't the only

important time, so parents can't sit back after they've made it to age three and relax from there on. Nor should they feel that if there wasn't maximum stimulation during this time, that the game's over. The game goes on. Obviously middle childhood, adolescence, are times of important developmental processes as well. But there is never again a time that this learning is as rapid and there is as great an opportunity as there is in those first three years of life.

The primary policy implications here are for parents. We often don't think that parents are policy makers or implementers, but they are. And the implication is that their interactions with and stimulation with their child is extremely important during this period of time. So most of their activities that relate to this children and much of the thrust of the conference is to get this message to parents: That their interaction with the child in the first three years of life is extremely important, the twig is bent early.

This also holds for care givers other than parents. It holds for grandparents, for baby sitters, for day care providers or whoever else is interacting with the child during that time. Now, just one word about day care. Mrs. Clinton made reference to the study of day care that was released just over a week ago by the National Institute for Child and Human Development, here at the Society for Research and Child Development meeting in Washington. Lots of press attention was paid to that story at the time, and I think it reflected the enormous interest and impact on American families that information has.

What that study showed was that the greatest influence by far, in a child's cognitive and language development, is the family and the home environment. There is no substitute for that. Day care did play a significant role, but it was a smaller role. Good quality day care had a positive impact, not a negative impact, and it was an add-on impact, if anything. Now, the policy here is that increased emphasis on the quality of the home environment is extremely important. Day care, even when good, is not a substitute, but it may well add-on to the impact of the home environment. The time that is sufficient for child development and stimulation in home in the evening is at least equal and greater in importance than the day care environment during the day outside the home.

It also emphasizes the need for that day care to be good quality. There's an opportunity for it to play an enriching and supplementary impact in child development above and beyond what is provided at home. And this holds whatever level of functioning the mother and family have. It also suggests the need for quality standards for day care and the importance of early Head Start types of programs in child development. I think these are the kinds of messages that you are going to get from the scientists who make presentations at the conference on Thursday. And I think that you'll enjoy attending that and the messages that they have provided in far greater detail and amplification than I've done in this short time.

**HRC:** Thank you Dr. Alexander. Well, one of the best examples we have recently of early stimulation is Tiger Woods' father putting a putty in his crib. He apparently didn't need neuroscience to do that but the results speak for themselves. And I hope that we are able through a concerted effort certainly using the media and every other means of communication to get these

messages out to parents, because as I point out in chapter of the book that I wrote, I've often in the past, and still do today run into parents who have not yet learned what Dr. Alexander was saying about what babies actually know and are capable of doing. So they will say to me when I say I bet you are having a good time talking to that baby in a quizzical voice the parent might respond "Why would I talk to her, she can't talk back?" And so we are not yet at a point where we have even conveyed this information to a critical majority of the parents in the United States and certainly around the world, I'd think you'd find it even at a smaller percentage.

So as both Dr. Alexander and Dr. Hamburg said our primary audience for this conference happens to be parents both because we think that what parents will do and can do is the most significant form of early stimulation. And also because we believe that educated parents, informed parents will be more likely to demand the kind of policy changes that influence quality child care, adequate pre-school education and all of the other issues that will help to supplement their efforts in their own homes. So with that, we'd love to throw it open.

Q: ... assume that the earliest childhood development conference, you know within this to age period, maybe up to 5?

Dr. ? : I think that we've often believe that was an extremely important period of life. What we have now is reinforcement of that concept both from the behavioral sciences area and then the neural sciences area. We can document anatomically, the importance for brain development of what happens to the child during those years.

Q: What do you see, do you see an enhanced government role in this issue? and if so what are some of the things that . . .

HRC: Well Rita, I think that's the really challenging question for those of us who believe there is a reason for bringing the entire community to awareness to support parents and family. Let me just mention a few things that I think should be looked at more closely.

If we believe that the home environment is the most important influence in this early stimulation and as the research shows and as common sense would suggest. Then what does that say for something like Family Leave? Don't we want there to be an opportunity for mothers and so far as possible, fathers to have the time to really spend in those early months connecting with that new baby. One of the interesting findings from the research on child care that came out a little over a week ago is how when children are put into care at a very age, there does seem to be some weakening of the bond between the mother and the child. So that if you're a working mother, and you are told you have to go back to work at two weeks as so many women in our country are, how do you emotionally prepare yourself for that kind of separation?

Well, one of the things I think, and this is not from the research, this is my personal observation and opinion. I think you have to in a sense emotionally distance yourself from that baby in order to deal with the feelings that are created as you drop that child off at whatever substitute care setting is available to you. We now know that leads to a weakening of the interaction between the mother and the child. I mean, if you have to steal yourself day after day to drop your baby

off as you go back to punch the clock or work at the computer or whatever your allowable leave has been. Then, you may be creating a situation, albeit unknowingly in our society where we have large numbers of parents who are less engaged because they don't get to spend the time with their children, than is best for the child, and is best, I would argue, for society, by creating more engaged, stimulated, effective youngsters. So, that's just one area that I think this research, perhaps, is going to cause us to review, the relationship between family leave and the impact on children in those early years. The President, on Saturday, in his radio address, extended the definition of family leave to federal employees to try to keep creating opportunities for more stimulation and attachment.

Q: Are you saying that women shouldn't work?

HRC: No, that's not what we're saying. Let me ask Dr. Hamburg if he wanted to say something, then we'll respond.

Dr. Hamburg: The Starting Points panel looked at this question about family leave and basically expressed a view similar to what Mrs. Clinton has just expressed and said that 3 months, which has become sort of the norm, is useful, that probably double that would be much better, as is done in most European countries. They recognize that there are a lot of questions about that, economic questions, management questions, as well as interpersonal relationships. They lay out in that report, some options for handling how you would get from here to there. They also, in the child care piece of the report, basically talk about the complementarity of care outside the home and inside the home. Care by the parents, and care by others, it is the same essential properties of what goes into good child care, whether it's the biological mother or not the biological mother, an initial stranger, whoever it is, on the basic problems of responsive care so you're really trying to get around the adequate contours of adequate care during the full span of time. Some of that at home, and some of it outside the home, typically today. We have to bear in mind as a practical matter, that over half of mothers are working, even with infants and toddlers, it's a revolutionary change, it's a very recent change historically. And I think we, as a nation, are still groping with how to deal with that kind of transformation. But, one of the things we have to consider is, can we work out a more time for one or both parents to be at home early on and be a better conjunction of what they do at home with what happens in child care settings outside the home.

Q: The question that I was going to ask originally was not so much directed at the middle class, but we know that most of the children in our country now are being born into poverty, we know that we have this explosion of teenage births and we know that most of these people have almost no resources to help them with anything. And I wondered whether that've been a cause of doing this research sort of suggests that there is a need for the government to offer some kind of help in terms of education, some kind of help in terms of care, I mean, or do you just say, well we are going to hope these media messages are getting to the 16 year old girls having the babies. The same medium that was sending out the messages to them not having the babies in the first place when they were 16?

Dr. Hamburg: Yeah, well I think that is a very fundamental question. Let's put it this way. It is certainly a national problem, not a federal government problem alone. Although the federal government just can't cop out. As I was saying before, the home approach of the Carnegie developmental strategy has been through these various panelists to find ways in which different institutions can play a part. The federal government is certainly a part of that. But I think we as a society have got to consider that. And I do believe your immediate coverage is essential to getting a serious thoughtful discussion about how we can meet these fundamental needs. The fact is that these young babies have to have a great deal of nurturance, protection, the right kind of stimulation. The nature and the scope of the stimulation is very important. They have to begin to get the skills of language and even the skills of coping with adversity. All that comes in the first few years of life. Not finished, but it comes very importantly there and it is a big demand. It's a big care taking demand. And some how or other some set of people will have to meet those demands.

Otherwise, we're going to be turning out larger and larger numbers of people with shattered and empty lives and no prospects. That is a fact. I mean, it's just an empirical fact. And somehow or other we've got to meet those needs. What that says about what the federal government should do and what other institutions should do is wide open for public discussion and obviously the configuration of response is different in this country than it is in Western Europe.

HRC: Let me just follow up on that, and then Dr. Alexander wants to as well. There are lots of things that we know work, as effective interventions. One of the frustrating aspects of being involved in this field for many years is that we don't take what we know works and adequately implement it on a broader scale. Now one of the things that this whole research on the brain will demonstrate, throughout the next several weeks over a variety of settings, there will also be congressional hearings, there will also be a big tv special we have already had the Newsweek and the Time publications. And, in each of those there will be examples about what works, and the examples are not all uniformly cut from one mold. I think the television show that Rob Reiner is producing...

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SIDE B

HRC, cont.: young parents, to try and get the message across Rita that you are referring to. So they have a variety of strategies, other communities have adopted other ways of intervening such as home visitors, something I believe in strongly. You know one of the main reasons I was so supportive of the maternity stays in hospitals wasn't just for physical reasons, but to try to encourage more hospitals, HMO's, community groups to take that time when you've got a new mother - whether she's 16 or 40, and get somebody in there to talk to her and try to make a connection, and then sending people out, home visitors, visiting nurses, a concept used widely in western Europe. And we just have to acknowledge that there are certain kinds of investments that will save us money. If we invested on the front end in some of these early intervention strategies, I honestly believe we would not be spending so much money on prisons on mental health and drug abuse treatment and some of the other symptoms of the breakdown of this

development that we are trying to maximize. So what are trying to say is there is not one overarching federal government solution -- that is not what any of us is advocating, but this is a national problem as Dr. Hamburg said, and there are potential national solutions that can be implemented at the local level, the private sector, not for profit, business, -- there are a lot of things that can be done that would work.

Q: Given the political and fiscal constraints Clinton has, what can Clinton do, other than making it easy for people to take time off without pay?

HRC: Well, I think that there are a number of things that the President and the Administration are trying to do that can make a difference and let me just mention a couple cause I believe they are important.

The early Head Start program that was passed in the first term and is now being implemented is really a very significant change -- you know we started Head Start in the 1960's when the best research we had was that we could really make a difference working with 4 and five year olds. Well, we know that if we could find a way to work with 0 to 3 year olds, we could make an even BIGGER impact... so starting in the first term we started putting resources in the early Head Start and we now have some model programs out there working. So that will give us, I hope, some information about how to intervene in this very important early stage. We've been working to increase the child care money available particularly to those coming off welfare and for those who are the working poor coming off of subsidies and we will have to look very closely about what is the quality of that child care and how we use those federal funds to leverage good child care.

When I was in Florida with Governor Lawton Chiles speaking at an advocacy week program that was put on for children issues - both of us made that point that the states now have this huge responsibility for child care -- so how can the federal government, through the research of people like Dr. Alexander who accumulates it - get that information out to the states so the states and the federal government can be partners in creating better quality child care.

So those are two things that are already ongoing that I hope this research can make a convincing case to members of congress and others that we need to be working on.

Q: So far, we've been talking about applying the research to solve existing problems [inaudible]. Given the explosion of information about the brain that you've been talking about, and the rapid pace, knowing more in the last 20 years than in all previous times, if we continue to learn about the brain at that pace and find effective ways to turn the research into policy, we are talking about a future generation of children that are like no other, because we will have learned ways to stimulate, and ways to get through to them, and ways to nurture them that could potentially be a huge break with the past. Or, are we really only learning things that our great grandmothers knew, and we'd forgotten some of that?

HRC: I think we have the capability, as we learn more about how people learn and how early we are capable of learning, of having a greater proportion of the population more capable than it has

ever been before. If we take advantage of the knowledge that we are acquiring. We are also probably going to learn how to provide that stimulation in a more effective way than we ever have done it before. But the basic things that we're talking about, learning, nurturing, caring, are probably nothing that different from what we thought from our grandmothers, and experienced from our grandmothers. What we're probably going to be capable of, is greater intellectual growth and stimulation that we've had in the past.

HRC: You know, I think that's a really interesting question because a lot of what science is now proven many parents and grandparents going on back kind of instinctively knew, but many others didn't. What makes that division? Why do some people, and even people who two generations ago were in impoverished conditions-- somehow the magic happens-- and through stimulation and encouragement of learning or whatever the combination of factors might be, they grow up to be parents who stimulate their own child. You know, my mother, as I write in my book, had no stimulation to speak up from her own parents. I mean, she was born to a 15 year old mother and a 17 year old father who were totally neglectful. Now, she had some other adults around her always through her life who did whatever one does to create the conditions for somebody to love learning and to love language and then to be able to pass it on to her own children. But if you had looked at her profile, of when she was born, you would have said, "well you know, destined to be kind of not very affective, not very successful".

You don't want to get to the point where we say that there's only one way of doing this because we know too much about human nature and we know too much about examples that defy our expectations to do that. But what we want to do is sort of increase the odds so that no matter who that child is, and who the parents of that child may be, in where in America, we are going to try to increase the odds of that child's God-given potential will be stimulated so that he or she can develop. And that is really what we are talking about. You know, a lot of people will just continue to do what their grandparents did and other adults will intervene where necessary to help out and to provide support for a child who might not get it from the parents. But we want to increase the odds so even more children will have that opportunity.

Q: Mrs. Clinton could you talk about how this conference fits in with your own attempt to define an agenda in a vision for what you're going to be doing in the second Clinton term?

HRC: It's just the same thing I've done for 25 years and that I am going to keep doing because I think these issues that we're talking about here today, and that I've tried to talk about concerning children and families, need to be on the forefront of the political agenda. They are not marginal issues, they are not issues that should be left to science or educators, or people who already have an existing interest in them. They ought to be in the forefront of our national debate because they, more than so much of what is talked about here in Washington, will determine the quality of life we have in our country. I think that there is a growing awareness of that. I've made a speech that some of you have heard on several occasions, where I put it in context of the '96 presidential election, because a lot of what the President talked about, leading up to that election, and during the campaign, was the stuff of how we live our life. And, it was part of his vision how together we can really change how we perceive our own possibilities, how we treat each other, how we live with one another, and most importantly, how we raise our children. I think,

initially, there were some who thought, 'What on earth does family leave or uniforms in schools or curfews or brain research have to do with a presidential campaign? That's not what we should be talking about.' And, I've tried to say, repeatedly, that there is an element of politics that has always been there and in some ways is more determinative as to how people feel about themselves and their country than the big macro issues that dominate political discourse.

And if you want to think about it in those terms, think about how those of us who have followed politics, who have been students of political science, we have talked often about real politic. You know, the relationships between nations and those are essential, I mean it's critical. You know we have a strong defense and an engaged foreign policy and that the big issues are dealt with. But, there's also what I call real life politic, 'how do we live our lives?' How do we maximize the opportunity for each child born in the United States to be successful in school, be an effective, functioning citizen? That's what I hear a lot about as I travel around the country, these sort of 'kitchen table' issues. And that's what I've been concerned about ever since I became interested in these issues many, many years ago. So this is a continuation of my own personal concern, but also of the President's understanding of what it's going to take to create our political life, and to keep our democracy going. David Hamburg has done as much work on this issue as he has on these others. Maybe, before we go on, you'd like to add something David.

Dr. Hamburg: I do think it's absolutely fundamental in the future of a democracy, that these issues be awfully well understood. There's been some tradition in the scientific community, of not talking to the public. To some degree, one of the worst charges you could make against a scientist 30 or 40 years ago, was that he was a 'popularizer'. I think Carl Sagan is a case in point. That was considered to be a bad thing to do. It just seems to me, if we're really serious about democracy, that it's just terribly important to have increasingly reliable methods for translating all this archaic stuff that goes on under Dr. Alexander's auspices, into language that everybody can understand.

Q: Inaudible. . . paid maternity leave. Dr. Hamburg has said that the average is 6 months, and that's because they get subsidized maternity leave, I mean is it because it's not really realistic, or because it really wouldn't make a difference?

HRC: Well, speaking just personally, not for the Administration, I think it's because people believe that in our current political climate, and given the characteristics that mark the American political character, that it's not realistic. We fought for 8 years to get unpaid leave for people who worked in employment settings of 50 or more, and that left out a huge number of people who are not even eligible for unpaid family leave. But, I think that, it was huge step forward for our country to adopt family leave legislation at all. And, what I'm hoping, is that over time, more and more business and political leaders will understand how it is in our long- term, and I would argue, medium and short term interest, to support family leave and eventually paid family leave for as many workers as economically feasible. I think it's a kind of horse and cart issue, we have to make the case and part of what this brain research is doing, I believe, is making the case of the importance of those years because then over time, we could make the case that if we're hoping to produce effective citizens and employees, we need to start where it starts, which is in those early years. And we need to make sure that parents have the supports they need to be

as fully engaged with their children as possible. [inaudible] Of course I'd be for it if it were feasible. If it were economically and politically feasible, though I don't know what the terms or the specifics, or the contours of it would be, but I think it's the kind of policy that would make it possible for many more parents to take time to become attached to their child early on and to do some of the work in stimulation in child care that they know their child needs.

Q: Mrs. Clinton, what would Hillary Rodham Clinton's five tips for stimulation be?

HRC: Besides reading and singing and talking, well, those are really important. I'll just tell you what I believe, and then I'll let the expert, Dr. Alexander chime in. The time spent, verbally, in a positive tone of voice, interacting with a baby, is time spent building those nerve cell connections called synapses, and that can be done in a lot of different ways. Some of the easiest ways are singing to a child, even if you have a terrible voice, sing until they know any better, I mean, Chelsea stopped me singing when she realized I couldn't sing. I can remember that day like it was yesterday. . . . I used to sing to her every single night, and when she was about 18 months old, she reached up, put her hand on my mouth and said 'no sing mommy'. Now, her father kept singing because he wasn't tone deaf.

Reading to a child, even if your not a good reader. I've visited lots of GED programs, welfare reform employment training programs, and I've urged the parents there, predominantly mothers, to read to their children. Often times, they'll say, well I'm not a good reader, and I'll say, before the age of three, your child doesn't know if you are a good reader. Hold the book, and tell a story. Just make sure it's the same story you tell, every time, holding the book, because the child will remember what the story is. I think that making up stories for a child is very stimulating.

Doing all those old fashioned games that again, parents and grandparents did, peek-a-boo games, the itsy bitsy spider game, all of that is not just some way to be engaged with your child, it really does stimulate brain growth. I think exposing your child to the out-of-doors, I mean taking your child outside and just pointing out the things that you see. Putting the child in the basket in the supermarket, and talking as you go down, pointing out what you see, I mean, there's so many opportunities that don't cost anything, that don't require you to go very far from home, that you can do, just within your own environment that will make the difference.

It is something to stress again, that it doesn't break down if you are a person who works outside the home, or inside the home, to get back to Helen's point, because as Dr. Alexander says, as a report that I write about in my book called Meaningful Differences says, you can be a terrifically engaged, stimulating parent staying home all day, or going to work and coming home. And you can be an unstimulating, depressed, uninvolved parent staying home all day, or going out to work all day. That is not the determinative criterion. It is what you do, and how you engage with that child, our attentiveness, and awareness of what your child needs, picking up the messages and signals that your own child sends you, that really determine the quality of your parenting. Let Dr. Alexander respond, too.

Dr. Alexander: Those sound like 5 pretty good ones to me. Just a couple things I might add, we have also learned from research, the importance of physical movement kinds of stimulation.

Whether it's swinging or tossing or interacting with a toy, whatever, so the physical movement kinds of stimulation are important. And any other just, close body contact. You never outgrow your need for hugs. And, the more, the better, and that kind of physical contact, is certainly important. From mother, father, anyone.

Q: Could somebody look at this data and say, 'gosh, I really should stay home for the first three years. I've always thought my thing would be to go out in the work world, but now I've changed my mind because of this data.' Would that be a reasonable conclusion?

HRC: Yes, I think that a person could draw that conclusion. And a person could also draw the conclusion that I don't need to stay home for the first three years of life an attentive involved parent, and that requires that I do the following things with my child. I think that we have to be careful not to send any sort of uniform, cookie - cutter, one size fits all message because parents come in all sizes, shapes, and experiences, so do babies. And I started out in my work years and years ago when I was in law school. And I saw so many different settings of parent - child interaction.

Let me just give you just two quick examples. I can remember working with Dr. Sally Province who was one of the early pioneers in the work of infant behavior. And she could look at a little infant interacting with her mother or her father and tell you so much about how those two people spend time together. And then she could help the parent understand what they were doing either right or wrong, because usually the only kids she saw were kids who were being under stimulated with some kind of presenting problem. And so often, you know, you hear from the mother this anguished voice: 'I'm with her all day. I do everything I think I'm supposed to do, but it just isn't working.' So that mother needed some help. She thought she was doing the right thing. She was home all day. Maybe that wasn't the right thing for that parent and that child. That there were some other strategies that were going to be workable.

On the other hand, you've got a lot of parents who need to work. They should not be made to feel any more guilt about their need to work and their child-rearing, than the society already puts on them. What they need to be given is some useful tips about how they can make sure they're the best parent they can be. And that includes looking for what makes good child care, because a lot of parents still don't know what it is that they want to find when they go into that child care center. Knowing what they can do with their child when they are at home, understanding this research. And so there's just a lot of different elements to this and I don't think that what would be a reasonable conclusion for one parent to draw, should then be generalized so that every parent should do this. I think we have to be much more thoughtful I how we approach this. David, were you going to say something?

Dr. Hamburg: Basically, the Starting Points panel looked at this in term of options, and it is certainly an option that ought to be preserved. It should in no way be discouraged for the mother, or by the way, the father. One of the things the Starting Points panel looked at to some extent was the issue of cooperation and the extent to which fathers are compensating for time now not being spent at home by mothers. The answer is not much so far, but maybe there's a little trend in that direction, with both parents involved as care givers. But in any case, that option of doing

it yourself at home to the extent you possibly can, is an option that ought to be preserved. Although realistically, the panel had to face the fact that in over half the cases, both parents are out working, and therefore, you simply have to come to terms with that reality as best you can, and, as Mrs. Clinton said, adopt an array of strategies that will meet different kinds of situations.

Q: We're not saying that women should necessarily stay at home, or not stay home or whatever, probably the other one biggest policy other than family leave that's affected a lot of young mothers, is the welfare bill that was signed last year which had the effect of making a lot of women who don't necessarily want to leave their homes, [inaudible], put them into child care. How is that consistent?

HRC: I've thought a lot about this Peter. I mean, I think this is a very fair question, and I can just sort of relate how I've thought about it. First of all, as Dr. Hamburg said, most women are now in the work force, even mothers of infants and toddlers. So there are a lot of women in minimum wage jobs, low paying jobs, working as hard as they can to either help supplement their husbands salaries, or as a single parent, being the sole support of their children. They are now coping with all of these challenges in how they raise their children. I have never understood or thought it was fair that those women would get themselves into the work world, do the best they can, while we would support other women to stay at home when the women in the work world didn't have that choice.

I think everybody who has to work to support themselves should be on the same playing field in the sense that everybody should have to be responsible and do their part for themselves. But, that doesn't answer what we're going to do with these millions of women coming off of welfare an into the work world. And I think there are a number of strategies that the states are developing, and the federal government is encouraging. One is to train some of these women to be child care workers. There is a shortage of quality child care, I would like to see a significant effort undertaken so that we could create more effective child care settings using the money that's in the welfare reform bill and the child care appropriations to help fund that kind of training and to find subsidies so that families can afford those subsidies. There are a lot of job opportunities in this field if it is seen as a priority.

Also, I think that all parents of any kind of economic background right now can use this information to be better parents. And so, the fact that welfare mothers are being encouraged, and then will be eventually required to seek work, should not be the determining factor in the quality of their parenting. Just like women who have worked have had to make the trade-offs and understand how to be the best parent possible while you work in the home and outside the home. These women will also have to face up to that, and it has been my experience in many years of working with and talking with women on welfare that there is a sense of pride and accomplishment which accompanies moving off of welfare, becoming self-sufficient--which is a very good message to send to children.

I mean, one of the results, and I'd like Dr. Alexander just to say a word about this, one of the results of the child care study which reinforces everything we know about child development is that a depressed, lethargic, uninvolved mother, whether she is living in a housing project or in a

palace, has a detrimental effect on the quality of parenting and interaction with her child. And so we have to be more, we have to be more thoughtful about this. There have been many women on welfare who have done a terrific job raising their children against unbelievable odds. And there are those who have not. Just like in any zip code with the highest income in America, you can find mothers who have done a terrific job and those who have had problems. So what we are trying to do is to look at strategies and solutions and not point fingers and say, well, if you stay home, you're this, and if you go to work, you're that, and if you're poor, you're this, and if you're rich, you're that. Because so many of those characteristics in individual cases don't explain what's going on. Dr. Alexander, [inaudible]

Dr. Alexander: Yeah, the day care study looked particularly at the maternal-child relationship and mother-child interaction. The former at fifteen months of age and the latter at twenty-four and thirty-six months of age. In relation to the day care experience as well as to the home environment: As direct observations of the interactions between mother and child at home and in a laboratory setting as well as the day care environment. The study at fifteen months show that the day care environment had not, did not have a negative impact on [inaudible], the day care experience did not have a negative impact on the mother-child relationship as long as the mother-child relationship was good at home. And the governing factor really was the kind of interaction that the mother and the child had at home, not whether the child was in day care or not. Similarly, at twenty-four and thirty-six months, we looked at interactions with the mother and the child. And again the key factor was, as long as the day care quality was satisfactory, the governing factor was the interaction between the mother and the child at home. And whether the mother was passive, depressed, whatever. This is what had a negative impact on that interaction, not the day care situation.

?: I hate to do this but, we have only about five more minutes, so...Okay, Claire?

Q: Two questions. One is for Dr. Alexander and one is for Mrs. Clinton. I can't remember whether you discussed this in your book but what did you do when Chelsea was born. Were you working? Did you take a lot of time off? Was it a hard fast decision? And the other question is just, we've been talking a lot about mothers and children, I'm wondering if in all of the research it shows that, is that bond between a mother and a child more important than a father if the father is the primary care giver, does it have the same effect?

Dr. Alexander: Okay, we unfortunately don't have the answer to the father question yet. That's data that has been collected but not yet analyzed. So I wish I could answer that but I can't based on the data from the study. Sorry, we will have that.

HRC: took a four month leave and because I was a partner in a law firm, my compensation wasn't effected because at the end of the year, I mean I got my salary and then I got whatever of my percentage of the income I was due. So I didn't have the same issues. And one thing I have worked hard for was to make sure that leave was available, not only for lawyers, but for staff people and the like. And it is a very tough case to make in any kind of employment setting. Unpaid leave or paid leave, there are just so many economic considerations that people feel are controlling. And then there are also some sort of cultural considerations as well. My personal

experience was that nobody that I worked with would talk to me about the fact that I was pregnant. This was seventeen years ago and I just kept on getting bigger and bigger and bigger. And they kept averting their eyes and not dealing with it. And so there was never any discussion and there was no policy.

And so therefore after I had Chelsea, I just said well I'm going to take some time off. And they didn't know how to deal with it. And so they said, well alright, you know. And it was just kind of the way we backed into those decisions those days. And it has gotten better in many settings because at least there are policies and there is a sense of predictability and people can plan. But there is still this cultural existence to the idea of leave in our society. And there is still is, I think, this very strong sense that pregnant women and women with small babies shouldn't be at work anyway.

So maybe if we don't deal with it, we don't confront it, we'll kind of, by attrition, change the demographics. And of course, that overlooks all the single women who are supporting themselves and small children. And it overlooks women who have to work otherwise out of economic necessity. And it overlooks women who choose to work for the vast number of reasons that women like us around this table have chosen to work. So I think that we're kind of in one of those cultural limbos. And whenever Dr. Hamburg raises the point about how Western Europe or Canada or Japan and other countries that have leave and including paid leave deal with these issues, the response always comes back, oh, but they have ten percent unemployment, twelve percent unemployment. Their growth rate is down and all of that. But if you look at economic indicators solely and you don't look at costs associated with the economic choices that a society makes, you get a distorted picture.

And that's one of my arguments, about how we should start thinking about a much broader definition about what our investments of our country should be and what the costs that we are paying should be. I refer to a book in my book that a conservative, kind of economist observer named Edward Litwack (sp?), I think is his name, has written about turbo-charged capitalism. And he said you know, we in America seem to only look at the bottom line and we don't fully define the bottom line. And he gives an example. He said, you know, you can go to some countries and they have leave and they have this and they have that. And American business and American political leaders say, "oh my gosh, that's such a drag on the economy. That's so expensive. They have smaller, cheaper prisons. They have smaller, cheaper mental health and drug abuse loads." You know, you just kind of go down the list. And if we were honest with ourselves and if we really tally up what we spend for social costs that are preventable.

There will always be people that will have to go to prison. There will always be people who are socially and personally destructive. Human nature being what it is. But cutting the numbers of people who end up causing trouble for themselves or others, is a smart way to be thinking about where we, as a society, would like to end up, both socially and economically. I think that part of what I hope this research is going to cause people to be stimulated to discuss is different ways of evaluating our success as a nation. And if we do that, then I think we can be sensible in coming up with some solutions. You looked poised to say something, David?

Dr. Hamburg: The prevention, if you're talking about if you either pay now or you pay later, there are a number of studies. There is a new one, which I haven't seen but I've heard about, [inaudible], which you may associate with defense studies, correct me but they have now taken on domestic problems as well, that looks at what you get from this dollar invested in these zero to three interventions down the road. And there have been a variety of studies on that. And it always runs somewhere in the neighborhood of five or ten dollars saved down the road. We have defined these things in terms of the health care system, the education system, the prison system, whatever name you apply to it. There are a whole bunch of rotten outcomes that to a considerable extent can be prevented, even in the light of present knowledge and will be much more so with the research in the next ten, twenty years.

So we have to really think much harder about the whole approach of prevention, identifying major risk factors and how you can deal with those risk factors. In a way now, I guess that we've changed our behavior with respect to smoking. Nobody in medicine, hardly anybody thought that would happen when I was a medical student, but it's happened big time. It happened more in this country than in most other countries. So, I think that kind of thinking in terms of prevention and early investment for good outcomes is an important thing to do across the board.

HRC: I just want to end by saying that one of the responses to that, whenever I make the argument, is that, you know, it's too expensive, it's too interventionist, and it won't work. And that what we need to do is get back to a time when each individual was responsible for him or herself and each family was an island onto itself. And nobody needs any help from anybody else. And certainly not from the federal government.

And part of the reason I wrote my book was to make what I think is a common sense argument, which is that we are all in this together. Whether we like it or not. And when we think about ways of being helpful to each other, we don't have to think only in one way. You know, we have moved considerably from the idea that top-down, one size fits all, solutions are the way we should go. But we have not yet really accepted, I think, the evidence that is around us. That there are many strategies that do work, that if we spend a little money and a little time implementing, would have big pay-offs. And that certainly focusing on the individual and particularly on the individual parent and thinking what could we do as a society that would help maximize good parenting and better child outcomes. And if we thought like that, then yes, there might be some government programs.

But there would also be some things business would do and that there would be some things that the media would do on a regular basis, not a one shot deal, continuing, and there would be different ways schools would be organized and community groups would take a different look and have a different responsibility, certainly the health care system, starting with prenatal care but moving through the child's development would be thinking differently and organizing differently, and it wouldn't necessarily be more expensive. But, it would be different, and I guess that's part of what we hope this research will stimulate. That people will start to say to themselves, 'Is what we are doing, more likely than not, to increase the chances that parents and children will have more of a chance to be successful together?'