Article

Searching for the Unknowable: A Process of Detection — Abductive Research Generated by Projective Techniques

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Abstract

This article looks at the process of doing research 'from scratch." The author began a project investigating children of Ethiopian origin living in Israel to see how ones who attended a kindergartern program years earlier differed from those who had not attended. However, the problem from the outset was that there may not be a difference to find. In this article, the author compares inductive, deductive, and abductive reasoning, and argues that abductive reasoning is the proper technique when nothing is known about the research at the outset.

Keywords: abduction, deduction, induction, reasoning, logic

Introduction

The focus of this article is to show the usefulness of abductive research logic in cases in which the research variables are not known in advance. In most cases of qualitative research and in evaluation, the research variables are not fully known in advance. In qualitative research we very often want to reveal a phenomenon and so have no research variables or research questions in advance, besides "What happens there?" The power, and one of the main characteristics, of qualitative research is in its being generative, in that it is concerned with discovering phenomena, constructs, and propositions (LeCompte & Preissle, 1993; Smith, 1974).

In other cases, such as ones with wide cultural variety, it is difficult for us to define the research variables even if we have a priori research questions; we need the cooperation or mediation of the researched population to understand what we have in front of us. In program and project evaluation; we have the "big evaluation questions" such as what works, what doesn't, and why, but in order to define our variables we have to break down the program or project in question to their separate components and sift and cluster them in order to build our explanations. In all of these cases and similar ones, abductive research logic can be of great assistance in helping us to construct and establish our explanations and give them logical power.

In this article, I shall present the abductive logic of research and illustrate its possible contribution with a case study.

The challenge

The present study was quite unusual for qualitative research. A qualitative research study does not usually deal with verification (LeCompte & Preissle, 1993), yet this was precisely its task: to verify (or refute) the assumption that a group of children who participated in an early childhood program ten years ago are different from those who did not.

The program in question is a parents' cooperative kindergarten for parents and children of Ethiopian origin living in Israel [1]. For better understanding, it is important to state that most of the children participated in the program came from relatively weak families, and participated in the program because of a social worker's recommendation. The research population consisted of children who participated in the program between 1988 and 1990. The research was conducted between 2000-2001. [2] The present study traced 36 former participants of the Parents Kindergarten to see whether the program's influence on participating children and parents would still be evident ten years later.

To answer the question, I had to overcome all the challenges mentioned in the introduction to this article. First, this being a special kind of evaluation, I had to verify that there was an influence from the program. I also faced the big question of what worked, and how and why it worked, but I still had to unravel the components of this big question and restructure them in a convincing explanatory frame. Second, working with a population of a wide cultural variety, I needed the population's cooperation and mediation in order to define the meaningful variables relevant to my question. Third, if in numerous qualitative studies we seek to reveal a phenomenon, here I was not even sure whether there actually was a phenomenon. Was there really a difference between the children who participated in the program and others? As a matter of fact, I, personally, was rather skeptical about it.

To be more concrete, my three main challenges were:

1. Tracing changes ten years after the children participated in the program. Ten years from early childhood to adolescence is a long time and many intervening factors had a chance to play a role in the children's existence. How could we detect influences directly related to the program ten years later?
2. Conducting a study within the population of Ethiopian origin. [3] To this day, there are wide cultural and social differences in many aspects of life between the community of Ethiopian origin and the host society (Anteby, 1995, 1997; Bodovski & David, 1996; Flum, 1998; Herman, 1996; Levin-Rozalis, 2000a; Rosen, 1987; Weil, 1995a, 1995b). I had worked with this members of this community from their first day in Israel, so was aware of the difficulties in conducting research in it that arose from these differences. In addition, there was also the problem that this population has been researched and evaluated to the extent that people are reluctant to be interviewed yet again.
3. Not knowing what to look for. The program was a simple kindergarten aimed generally at influencing the children's "well-being" and it aspired to give them "tools" to become part of the host society. There were no definitions of what these tools are or what exactly was the "well being" of the children. At this preliminary stage of the research, I was unable to obtain satisfactory answers from the former staff because the answers they were able to give me were very general. When they first conducted the program, they had broad general knowledge about child rearing, which they used in the kindergarten, but were unable to specify explicit things or concrete targets, apart from providing a high quality kindergarten and giving the parents a notion of what a kindergarten is. They did not conceptualize their work in terms of specific traits or activities for the Ethiopian origin population. I could not ask them about exact variables because I was unable to tell in advance which areas of the children's lives would be most influenced by the

kindergarten, and why. And, of course, whether these influences would be different from those of the experiences the other children underwent.

To overcome these challenges, I decided to use the abductive logic of research initiated by projective techniques.

The abductive logic of research

The abductive logic of research was formulated by Charles Sanders Peirce (Peirce, 1960, 1955). Peirce claimed that we cannot ignore the process of discovery in science, leaving it to the history of science or psychology. The process of discovery that intends to provide an explanation of a new or surprising fact is subject to logical categories and criteria such as the process of proof. A new or surprising fact is one we did not expect to find, either because we did not know what to look for in the first place, or because the fact was beyond our expectations of what we were about to, or should find. Discovery is the process that leads us from the fact to an established scientific explanation of it. Peirce called the logical process of discovery "abduction" (Burks, 1946; Peirce, 1960), which can be suitable in situations where both deduction and induction fail us (Levin-Rozalis, 2003).

The principles of abduction are based on the notion that there are no a priori hypotheses, no presuppositions, and no advance theorizing. Each event is scrutinized and its importance examined (Shank & Cunningham, 1996). Hypotheses are then formed about the event: Is it connected to other events and, if so, how? Perhaps it is an isolated event and, if so, what is its meaning? The explanations we form for these new events are "hypotheses on probation," and a cyclical process of checking and rechecking against our observations takes place, widening and modifying the explanation through this process (Levin-Rozalis, 2000b, 2003).

An a priori theory tells researchers what to look at; abduction logic tells them to look at all of the phenomena. In a certain sense, this is like the work of a detective who has to be free of presuppositions and open to all the possibilities and information that the investigated subject offers. As in the case of the detective, the instructions to the researcher in an abductive process must be: "Never theorize in advance of your facts… Look at the whole scene inside and out; ask yourself what you saw, not what you expected to see or what you hoped to see, but what you saw" (James, 1989, pp. 34, 53).

There are three paths of research logic that connect theory and data: deductive logic, inductive logic, and abductive logic. In deductive logic, there is a valid logical connection between the hypotheses and a previous theoretical assumption. The hypothesis is an *explanandum*, meaning that it is explained by deductive premises derived from a theory. There is nothing new in the hypothesis, nor is anything new permitted. The a priori theoretical assumptions are the *explanans*, which explain the hypothesis. No matter what else may be true in the world, or what other information may be discovered, the validity of the connection between the *explanans* (a priori premises) and the *explanandum* (hypothesis) is not affected. This method of formulating hypotheses holds good for research that examines a theory or tries to refute it. It assures the researcher that there will be no deviation from the application of the theory in question. According to this, phenomena that appear in the field are not subject to deductive logic at all; the field is merely the court in which the a priori hypotheses can be examined (Copi, 1961; Copi & Burgess-Jackson, 1995).

Deductive logic is the opposite of the logic used for this research, because it examines the field in order to reveal the variables and the elements that play a role, and the connections between them. It does not use the field to validate variables and suppositions stemming from an existing theory. Pawson and Tilley (1997) are the representatives of such deductive logic. Owens and Rogers (1999) present an example

borrowed from Weiss (1997): If contraceptive counseling is associated with a reduction in pregnancy, the cause of the change might seem to be the counseling. But what in the process caused the change? The knowledge provided? It might be that the existence of the counseling helps to overcome cultural taboos against family planning; it might give women confidence and assertiveness in sexual relationships; it might trigger a shift in the power relationships between men and women. These or any of several other cognitive/affective/social responses would be the mechanism leading to the desired outcome. Using deductive logic we will never know, because the theory leads us to the mechanisms, contexts and outcomes, in Pawson and Tilley's words, that are part of its frame of reference. It is not important when examining a theory, but it is crucial when we want to know what it is that works in a project.

In inductive logic, hypotheses are formed according to empirical generalizations, such as a repetitive or recurrent phenomena that are observed in the field (900 white swans). In an attempt to formulate a general law of probability, these hypotheses examine the probability that these phenomena will be repeated (that swan number 901 swan will be white also). In order to do this, we must know the characteristics being investigated in the group we are focusing on and the a priori conditions (for example, that a coin has two sides and that when it is tossed it will land on one of them) (Copi, 1961).

These conditions do not occur in this research: first, empirical generalization is a claim for the reasonable appearance of a phenomenon. In order to claim empirical generalization, the characteristics of the phenomenon have to be known ahead of time — they have to have been examined earlier. This research begins early in this examination. It attempts to lay bare the significant phenomena and thus cannot yet examine their characteristics and the probability of their occurrence.

This research is not theory-dependent; it is field-dependent in the sense that the questions it poses do not arise from a theory, but from the findings, data and phenomena that revealed themselves during the research process. With no theory, deductive research cannot be used. There was nothing from which to derive research questions. I had no proper way of defining research variables. "Well-being" and "tools" are concepts too broad to detect, and they can have many different meanings. Inductive research was not a possibility either, because I had no generalized findings (or any findings for that matter) from which to draw conclusions.

Thus, part of the solution to the challenges of this study was to use the third research logic: abductive logic (Levin-Rozalis, 2000b). The principles of abduction are based on the notion that there are no a priori hypotheses, no presuppositions, no theorizing in advance:

Abduction is a process of drawing conclusions that includes <u>preferring</u> one hypothesis over others which can explain the facts, when <u>there is no basis in previous knowledge</u> that could justify this preference or any<u>checking</u> done. (Peirce 1955, p. 151, emphasis mine)

It is worthy of note that the hypothesis mentioned by Peirce does not arise from any theory, but from the facts. That is to say that in encountering any situation at the stage where we do not have sufficient satisfactory evidence about the facts, and we have not yet carried out any examinations that might support any hypothesis, we nevertheless prefer it. We do so at a stage at which our only criterion is the standing that the hypothesis has according to the laws of logic: the explanations we form for these new events are "hypotheses on probation." A cyclical process of checking and rechecking against our observations takes place, widening and modifying the explanation through this process (Levin-Rozalis, 2000b). Peirce called this process "retroduction," that is a deductive process that instead of moving from the theory (*explanant*) to the hypothesis (*explanandum*) to the facts, moves from the facts to the hypothesis and again to the facts. Each such cycle creates a more generalized and abstract hypothesis.

Richard Fox (1998, p.1) defines the use of the process of abduction thus:

Abduction is inference to the best explanation. It is a form of problem solving used in a diverse number of problems, from diagnosis to story understanding, to theory formation and evaluation, to legal reasoning, to, possibly, perception.

The research described here is field-dependent in the sense that the field being studied dictates the questions, the variables, the population, the terminology (in part), the timetable and the possible instruments of research. It deals not with generalized and abstract variables, but with immediate and specific facts. And facts need explanations that will organize them into a sensible structure — some kind of conceptual or theoretical framework (Chen & Rossi, 1992; Turner, 1986).

Deductive and inductive logic both run counter to the logic of the present study, where the process would have to move toward the hypothesis and not from it. It called for abduction logic and the retroductive procedure.

Retroduction — examining hypotheses

Retroduction is the process of examining the hypotheses on probation, testing their ability to stand up to logical criteria and to fit the data, either to eliminate them, or to build an empirical generalization (Rescher, 1978). Here, according to Peirce, we must use accepted criteria for checking the validity of the hypothesis. By this, he means the same criteria we use to examine a hypothesis by a process of deductive derivation — *modus tollens*, *modus ponens*, hypothetical syllogism, disjunctive propositions, syllogism, and so on.

In the process of qualitative research or evaluation, the explanation is often a hypothesis. The hypothesis has to explain the facts, in the sense that it then makes it possible to derive the facts logically from the explanation. This conforming to the logical criteria of retroduction links the explanation back to the facts, because this is the essence of retroduction, as distinguished from induction and deduction that work with abstract and generalized concepts. That is to say that the explanation, in itself, has no value without the facts from which it stems. Peirce [4] would surely have agreed with Darwin (as cited in Kerlinger, 1972), who claimed that all the observations must support or refute a single fact, if we want to use them.

The process of retroduction demands a display of the findings that were collected in the field, and an explanation of those findings (which are hypotheses on probation, since they have not yet been checked), and a logical connection between them. The process can be ongoing, from understanding to deeper understanding, and to more complex claims.

However, in terms of abduction, this technique is used to examine the logical structure relating to the facts, that is the process is inverted. We move from the observed facts to generalization and not from the theory to the particular instances, which is why it is referred to as 'retroduction' (Peirce 1955a).

Projective techniques

Not having clear variables to look for, coupled with the fact that I was dealing with a population that is difficult to research and that the changes I was looking for might well be hidden, not declared, or not even recognized by my research population, I decided to look for the deeply held attitudes and motivations that are not always verbalized, those concepts and perceptions that these children, now adolescents, might not even be aware of. In order to do this, I decided to use projective psychological techniques.

Projective techniques have long been used in the field of psychology to investigate feelings, opinions and motivations for action. They enable researchers to delve beyond people's surface cognition or rational explanations of their attitudes or behavior. This is a qualitative research tool that minimizes researcher bias and offers more useful insights into people's perceptions. Projective techniques are especially useful for investigating topics people cannot talk about honestly for one reason or another. They can reveal ideas a person has trouble articulating because the subject is too abstract or intangible (Garb, 1998; Gleser & Stein, 1999; Lahad, 1997).

I thought that projective techniques could be the solution to all three of my problems. Not being direct questions, they had the potential to overcome the difficulties of interviewing people of Ethiopian origin, to overcome the fear that if there were changes they would be too faint to trace, and of course, to overcome the fact that I did not know what variables I was looking for. Projective tools, by not being direct but revealing deep content, might possess the ability to reveal any changes that might actually exist.

Projective techniques are normally used during individual or small-group interviews. They incorporate a number of different research methods. Among the most commonly used are the Word Association Test (WAT), Sentence Completion Test (SCT), Thematic Apperception Test (TAT), and Third Person Techniques (Garb, 1998; Gleser & Stein, 1999; Lahad, 1997). Though there has been some debate about the accuracy and effectiveness of these tools in psychotherapy (Lillenfeld, 1999; Lillenfeld, Wood, & Garb, 2000), these techniques thrive in areas such as marketing and advertising. Businesses find projective tools very effective in revealing their consumers' true opinions and beliefs. Advertisers have used projective techniques to understand consumers' reactions to potential new products, and for the past 15 years, social marketers have also used these techniques as part of participatory community assessments (Kumar, Aaker and Day, 1999; Livingston, 2003; Zikmund, 1997).

Benchmarks

Although the study under discussion was qualitative and involved a process of discovery, it was also about verification, i.e., examining an assumption that there were detectible changes in the children that are former participants in the program. Not having a baseline, I had no way of knowing whether the data uncovered would be unique to the group investigated. I had to have a comparison group and chose two: (1) children of Ethiopian origin similar in age and other qualities to the research population, and (2) children of non-Ethiopian origin from a middle-class neighborhood.

Research course

Methodology

As mentioned above, this research was based on an abductive process, where the findings revealed in the field raise questions and an attempt is made to answer them, taking into account the whole range of observations and findings that exist at that point. Such answers are in fact "hypotheses on probation." In other words, they are assumptions that require examination until such time that further observation and findings, in the course of the research, either confirm or refute them (Levin-Rozalis, 2000b).

For this study, four teams were set up to interview the different research populations:

1. Child interviews, which included children from the Shaul Hamelech and Gimmel neighborhoods who made up both the group of former participants in the Parents Kindergarten and the comparison group.

2. Parent interviews, which included the parents of the children of both groups (former participants and comparison groups from both neighborhoods).
3. Teacher interviews, which were conducted with the teachers of the children of both groups (former participants and comparison groups from both neighborhoods).
4. Arad group interviews, which included the children of non-Ethiopian origin in Arad. [5]

Child interviews

The child interviews were based on projective technique and composed of three projective questions. All the children were given three open-ended questions in order to let them reveal their own perceptions in their own way and in their own words. Our experience was that people of Ethiopian origin, irrespective of age, are not talkative. They tend to be very taciturn in any kind of conversation with strangers, let alone in an interview setting. If the children's responses to the questions were too brief, the interviewer encouraged them to elaborate by using follow-up questions, based on their first answers.

The first question was not strictly projective but indirect. The children were asked: "*Tell me about your daily routine*" (with follow-up prompts aimed at specific aspects of their life, addressed below). The other two planned questions were: "*Tell me about a fa*mily" and "*Tell a story about the character in the picture*."

I chose these questions because they covered all aspects of the child's life. It was important to me to cover as many aspects as possible because, as I mentioned before, I did not know what to look for and where to look for it. The first two questions had great likelihood of discovering the child's daily routine (which can provide direct information on what the child is involved in and, indirectly, his/her perceptions of those things) and his/her perception of family (that might provide a hint about the relationships and processes in his/her own family). The third question was more focused in two areas I thought might be important: I hoped the story about the picture would reveal perceptions of school on the one hand (see below) and Ethiopian identity and the perception of it, on the other.

I chose this technique of projective tools because I thought they could serve as a trigger to elicit responses and because there was a greater likelihood of discovering the influences I was hoping to find.

Tell me about your daily routine. This question was the first to be asked because it is allegedly simpler and more concrete, less threatening to the children and easier to relate to. As a matter of fact, this question provided us with much information about the children's activities, priorities, opinions, and relationships in reference to most aspects of the child's life. It also provided a look at the significant and formative spheres of the child's life.

After completing their initial answer, the children were asked to give detailed responses to follow-up questions on two issues, school (*What is school like? What happens there?*) and homework (*What is homework? What do you have to do?*). These two prompting questions were added because school and learning were areas of great interest in this research, assuming that the school sphere can serve as a good indicator of the children's integration and the tools they had gained that would best help them succeed in society.

The analysis was conducted by comparing the Parents Kindergarten group with the comparison group in each neighborhood. In the analysis, we examined the frequency of parameters and themes that were raised, in part, spontaneously by the children themselves and, in part, from the follow-up questions. This included the place that each parameter took in the overall picture, the feelings and opinions accompanying

each parameter, relationships with other children, adults, in school, within the family and so on. We also examined the quality of answers (detailed or not, the order of things, and so on).

<u>Tell me about a family.</u> This question enabled us to learn about the importance of the family in the child's world and the children's place in their family.

In the analysis, we examined the quality of the story they told (rich and complete, fragmented and dull, and so on); the frequency of parameters and themes that were raised spontaneously by the children, and their content; the emotions that were evident in the story; where the story occurred; the characters in the story and their relationships; imaginary or real family, extended or nuclear family and other kinds of data provided by the stories.

<u>Tell me a story about the character in the picture.</u> Two pictures were used for this part of the interview in order to facilitate identification with the character — one was of a boy, which was presented to the boys being interviewed, and one was of a girl, which was shown to the girls. The pictures depicted a young child of Ethiopian origin with a school bag on his/her back. This picture raised immediate associations with school and enabled us to learn about the children's inner world and their relationship with their school surroundings.

For this question, the children seemed to need more guidance, and the interviewer accepted relatively short answers. In cases of extremely brief answers, the children were encouraged to develop the story with follow-up questions, such as: What happened to this boy/girl? What does he/she feel?

Procedure

First to be interviewed was the Parents Kindergarten group. Information about the children was obtained from Almaya's records, and the interview was preceded by a telephone conversation in which the purpose of the study was explained to each child, the child's consent to participate in the study was obtained and a meeting at his/her home was arranged. The children were prepared for the interview in advance and it was conducted in their home environment, and in some instances, in the presence of a parent or relative. Some of the parents were highly involved in the course of the conversation, supervising their children's answers, or adding answers of their own. In some cases, the interview was defined as "familial," because the parents and children jointly constructed all the responses.

The comparison group was the second to be interviewed. There was no prior information, such as an address or telephone number, available on the children in this group. We asked the children from the "Kindergarten Group" to give us names of friends "similar to you" and if they were not on the list of former participants, we tried to contact them and arrange an interview. It was difficult to find many of the children at home. This in itself is an important finding. Many of these children spent the afternoon at the shopping center and in the "neighborhood" the area at the entrance to the housing project. So the interviewer approached groups of children that were playing, hanging out, or on their way home from school and asked them to participate in a survey or study being conducted on behalf of the university. The purpose of the study was explained, and if the child agreed, the parents were reached by phone to obtain their consent, and the interview was conducted then and there, in a relatively quiet spot in the vicinity. In the course of the interview, there was no possibility of gaining an impression of the parents, their involvement, or their relationship with their children.

The Arad children were interviewed last, after we completed all the interviews with the children of Ethiopian origin, the teachers' interviews and most of the parents' interviews. The Arad children all

attended advanced academic classes in English at Alon Junior High School, which is considered a good school in Arad.

Although these interviews were identical to those of the Shaul Hamelech and Gimmel children, they were conducted by a different interviewer.

Some ethical comments

Addressing ethical issues in social research typically requires taking into account considerations beyond those of ethical theories. In qualitative settings, the relationship between researcher and subject requires substantial exchanges and interactions and thus demands a special kind of normative attention (Schwandt, 2001). The ethicist William May (1980, pp. 367-368) claimed that such special ethical obligations might better be understood in terms of a covenantal ethic: "The duties of field workers … to respect confidences, to communicate to them the aims of the research, to protect anonymity, to safeguard rights, interests, sensitivities … to share the results of research…"

In addition to bearing such considerations in mind and in practice, we did our best to receive informed consent on the basis of complete knowledge about the purposes of the research and its course, with no pressure whatsoever exerted on the research subjects (Dushnik & Sabar, 2001). We simply explained that we wanted to examine the influences of participating or not participating in early childhood programs. Assuming that parents who were unfamiliar with research techniques might not fully understand our explanation about research procedure, we did not protest when the parents were present at the interview or even when they interfered in its course. We preferred the danger of research bias to ethical problems.

In most cases, the consent of both parents and children was obtained. However, there were some children in the comparison group whose parents could not be reached and for whom we did not have parental consent for their children to be interviewed.

All the children and parents who had participated in the research were invited to a small party at the end of data analysis and were given the results. Taking into account the "consequences of publication" (May, 1980), we did not tell the children to which group they belonged.

The analytical process

There were several steps in the analysis. The first took place after all the interviews had been completed: the team for each set of interviews (child interviews, parent interviews, teacher interviews, and Arad group interviews) analyzed the raw material according to content.

In this first stage, the responses were divided into content units, with each unit comprising a significant statement, a phrase, or even a part of a sentence (for example, the sentence "The boy looks sad; he's ashamed" was split into two separate content units: the feeling of sadness and the feeling of shame). Each interviewer in each group was given a number and each fragment bears the number of the interview from which it was taken. In the second stage, the content units were assembled into categories based on similarities in the content they reflected. The third stage consisted of separating the sentences by groups (former participants and comparison group) and examining the prevalence of the different categories in each group. In addition, some of the raw material was also analyzed for quality of response (minimalistic compared to comprehensive, an entire story about the picture, and so forth).

After each of the teams had individually analyzed their material, the responses were cross-referenced with the findings from the other research tools to construct the full report. Finally, the raw material was analyzed employing content analysis, which enriched and gave life to the categories.

The abductive process

The abductive process begins with the initial findings. While looking at the findings, it is possible to raise "hypotheses on probation" — which means preliminary assumptions or questions to be checked further for them to be either supported or refuted.

The analysis of the children's interviews revealed numerous consistent differences between the comparison group and the children who participated in the Parents Kindergarten. [7]

First retroductive step

In sum, the child interviews indicated differences in the children's attitudes toward school and learning: the Parents Kindergarten group showed a greater appreciation of school and learning than the comparison group. They also expressed more positive feelings toward school, both academically and socially, than the comparison group. These children showed better organizational skills and relation to time, stronger links to family and community, and a wider range of emotions.

From these initial findings, I had a feeling of deeper and more coherent differences that were more than just differences in attitude. I had the notion of something that is better and more positively composed, of better ability to cope and to express oneself.

I posed my first logical process of examining my assumption, a simple modus ponens structure (if A then B): If there are consistent differences between the two groups (A) they may indicate a more coherent hidden structure that causes them, i.e., the two groups differ in basic personality traits (B).

I had my first assumption — the first "hypothesis on probation": *There are some personality differences between the two groups.* I wanted to support or refute this notion with the teachers' interviews.

Teachers' interviews

The teachers' interviews were the second step. It is important to say at this stage that neither the teacher nor the interviewer knew to which group the child belonged. Forty-six teachers were interviewed regarding 67 children from the sixth to the eleventh grades in 17 different primary and secondary schools, rabbinical colleges (*yeshivas*) and boarding schools. There were teachers of 35 children from the Parents Kindergarten and 32 from the comparison group. Teachers of four children could not be located, possibly because their contact details were inaccurate.

Research tools and procedure

First, permission to interview the teachers was obtained from the district director of the Ministry of Education, then from the school principals. Consent was also obtained from the children's parents. Some of the interviews were conducted face-to-face, while others were conducted by telephone at the teacher's convenience.

The teachers' interviews were conducted after we had obtained preliminary findings, so the first question the teachers were asked was, "Tell me about this child." I wanted to see what the main things the teachers would have to say about each child were, what characteristics they would choose to describe; I wanted to get a general description or a general impression of each child.

After obtaining this general description, the interviews were divided into three general subjects:

1. Scholastic: verbal ability and scholastic achievements, participation in class and preparation of homework, attendance, and bringing appropriate equipment and materials to class;
2. Social: forming social relationships, issues of violence;
3. Relationship with parents: nature of the relationship, parents' attendance at meetings, and family situation.

The questions went in two different directions. On the one hand they aimed to support or refute my assumption by checking the existence of dimensions of personality that arose in the first stage of the research; different perceptions of schooling and ability at school, better social skills and better family relations as they emerged from a kind of personality to which I was as yet unable to name. On the other hand I wanted to support or refute the concrete evidence of these differences, so the teachers were asked to indicate if the child attended classes regularly, if he/she had books and equipment for school, did his/her homework regularly, and was involved in class discussions. They were asked what the strongest and weakest areas of learning were for each child and how the child compared to others with regard to social skills, learning skills and so on. The questions were open-ended and the teacher was free to respond by relating anything that came to mind about the child. In the course of the interview, various additional subjects were raised by the teachers, such as motivation to study, integration, the need for different structures and additional support, instability, special abilities, etc.

Teachers were asked to grade the children according to their scholastic abilities, in reading, writing, reading comprehension, verbal expression, and level of conceptualization and abstract thinking. As teachers are not allowed to disclose their students' grades to outsiders, the interviewer prepared several scales for them to use in grading the children, from 1 (very weak) to 6 (excellent) based on eneral academic standing, level of reading, level of writing and so on.

Social skills were evaluated through questions about the children's friends, the ethnic origin of their friends, and the children's behavior. The teachers were also asked about the parents' involvement with the school and what the child's family situation was like.

Second retroductive step

- The findings from the teacher interviews supported — and amplified — my first "hypothesis on probation." The differences were not just of attitude. I began with the finding that, in spite of the fact that in many respects the teachers perceived the Parents Kindergarten children as better students, they also thought that these children needed additional help. It seems as if the teachers were more sensitive to the needs of these children; they also mentioned more special talents for children in this group. In addition, during the interview, when the teacher was asked to tell about the child, many of the teachers were unable to do so for the comparison group, and in some cases it was difficult for them to even recall who the child was. (It is important to note that according to the behavioral codes of children of Ethiopian origin, they are supposed to be quiet in front of adults, not to look them in the eye, and not to stand out).

It was also evident that the parents' patterns of behavior in the two groups were different. They were much more cooperative with teachers and school.

This led to my second "hypothesis on probation": Could it be that the children who attended the Parents Kindergarten had gained some individuation qualities that were different from those of their friends, and that made them more visible to the teachers? And perhaps these qualities were reinforced by their parents' behavior? Again a simple sequence of the modus ponens structure: If the former participants are better pupils and still get more support from their teachers, then they and their needs are more visible to their teachers. If they and their needs are more visible to their teachers, then they have some qualities that caused them to be prominent.

On the other hand, if the comparison group's needs were not identified, and in numerous cases the teachers could not recognize them, then they and their needs are not visible to their teachers. And the second assumption: if the parents of the prominent children are more cooperative at school, then there is a reinforcing relationship between the child's characteristics and parents' behavior.

I examined these hypotheses on probation by interviewing the parents.

Parents' interviews

We were able to interview only half of the planned sample of parents, resulting in interviews with only 28 parents (of 31 children: 15 former Parents Kindergarten participants and 16 from the comparison group). There was a concern that the similarities between the parents who agreed to be interviewed would be greater than any differences related to the program.

Most of the information was obtained from one or both parents, but it should be noted that in very few cases the information was provided by older siblings. The interviews were generally arranged with the mother, so in most cases the interviewees were the mothers. In three cases, the interviewees were the fathers, and in four cases both parents were interviewed. Three of the interviewed families were single-parent families as a result of either divorce or the death of the husband.

Research tools

The interview questions were defined after we obtained the results of the children's and teachers' interviews. I wanted to see whether the parents perceived their children the way I had begun to see them. From my previous experience, I knew that questions for a population of Ethiopian origin have to be related as much as possible to concrete experiences, and even then the answers will be very short. So the interviews were made up of seven guiding questions, with follow-up questions to encourage the interviewees to expand on the subject:

1. *Tell me a little about your son/daughter (age, grade, school, etc.).*
2. *Tell me about any special programs attended by your son/daughter.*
3. *How would you assess these programs?*
4. *In what subjects/spheres is your child more successful, more outstanding?*
5. *Describe your child's relationship with his/her parents, brothers, the extended family.*
6. *How do you see your child's future and what would you want for him/her?*
7. *In your opinion, how can your child be helped to attain this?*

Procedure

The parents' interviews were conducted over several months and produced a relatively small yield of data. Obtaining the parents' agreement to be interviewed was very difficult, with almost half of them refusing, including those who willingly agreed that we interview their children. With some of the parents who did not directly refuse, it was simply impossible to set up a meeting. The lack of responsiveness stems possibly from the vast amount of research that has been conducted recently on the Ethiopian community in Beersheba.

Because of the parents' language difficulties, seven of the interviews were conducted with one of the siblings translating. A small number of interviews were attended by the children about whom the parents were interviewed. The degree of openness throughout the interviews was relatively low and the responses obtained were concise in the extreme and cryptic.

Third retroductive step

The parents of the former participants identified unique elements in their children, such as hobbies or ambitions for the future, and seemed to perceive them as being more responsible and independent than the parents of the comparison group. The latter tend to emphasize their children's "good behavior," a much-appreciated value for the youngsters, and this good behavior frequently makes them transparent to their environment. The parents of the former participants mentioned this quality much less and I believe that it seems less important to them.

My first hypothesis on probation, claiming that the differences between the two groups of children are much deeper than just differences in attitudes, was given further confirmation.

The Ethiopian and Israeli cultures have very different perceptions of human beings and their place in society. In Ethiopian culture, the human being is a member of a group and a community, which are bound by a communal-traditional culture that reinforces "togetherness" and does not encourage individuality. Despite the changes that have taken place in their society since the community emigrated to Israel — primarily the break-up of the community structure and extended family — the underlying forces that preserve the cohesiveness and structure of the community are still very strong (Levin-Rozalis, 2000a).

This kind of cohesiveness is very different from that found in the Israeli host society. Although Israeli society is extremely varied and is made up of different communities, one of the dominant values is individualism, a perception that supports the development of the individual in the direction of maximum self-actualization.

Unlike other children of Ethiopian origin of their age, the Parents Kindergarten children we studied displayed a distinct sense of self and a clear tendency toward individualism. The children perceived themselves as independent entities, and this perception was evident in a higher awareness of themselves, their ability to express emotions or a need for help, and their ability to develop hobbies and talents that were theirs alone. The people around them reacted accordingly. The teachers of the Parents Kindergarten children viewed these children more clearly and less superficially than they saw their peers. The Parents Kindergarten children were perceived as more dominant — children whose needs were clear — and there was a greater tendency to recommend — and integrate them into — the support programs they needed.

These differences should not be seen as a dichotomous division between the individual and the community, but rather as a shift in this axis. The Parents Kindergarten children were still less individualistic than Israeli children of the same age who are not of Ethiopian origin, or immigrant

children from the former Soviet Union who came from a society that is more similar to the Israeli host society from the standpoint of self-perception and individualism (Levin-Rozalis & Shafran, 2003).

At the same time, the Parents Kindergarten children seemed to feel that they belonged to the Ethiopian community. They neither denied nor "forgot to mention" their connection with the community, apparently seeing themselves as part of a large, supportive body, which for them constituted a kind of family. This could also mean that the content of their Ethiopian tradition and heritage was far more accessible to them.

Fourth retroductive step

What was it in the Parents Kindergarten that brought about these differences in the children's self-perception and the way they present themselves to the world and cope with it? Can we really claim that the kindergarten experience the children had ten years earlier caused these differences? In order to check this "hypothesis on probation" again in the simple modus ponens structure (that the former participants of the Parents Kindergarten are significantly different from other children, and that the Parents Kindergarten is the cause of the differences we found), I took my findings to the initiator and coordinator of the program and one of the teachers, and asked them to tell me what they did in practice that could be related to individuation, emotional expression and other qualities found in the children. I also asked the same question of one of the present Parents Kindergarten teachers.

Now I was able to obtain more accurate answers. Instead of repeating the general goals of the kindergarten, I was given more precise answers relating to the questions at stake. In the discussion with the program's initiator and teacher, they said that as part of their work in the kindergarten, they address emotions and provide warmth, but above all they work with the children on identifying and coping with their emotions.

Freedom of choice is another important aspect of the program. One of the interviewees reported that in every activity in the kindergarten, the child has a choice. The activities are structured and organized, but at the same time, the children are given freedom of choice.

In the kindergarten itself, the counselors talk to the mothers about their child's experience in kindergarten activities, emphasizing each child's unique character as a matter of course. The children are given more attention and the parents see the results later at home. Interviews with Parents Kindergarten teachers and coordinators at the time of the research showed that the parents recognize the uniqueness of children who have participated in the Parents Kindergarten. The parents say that the kindergarten child is more developed than their other children, brings home paintings and drawings, and sings songs learned in kindergarten. Sometimes the mother comes home from the kindergarten with her own impressions and experiences shared with her child and in her view, this also sets the child apart. The children's ability to develop a distinct perception of self is the result of a combination of two factors: the child's own experience in the kindergarten and the parents learning to see the child's uniqueness, which enhances the process.

The Parents Kindergarten began a process that reinforced itself. The main thing the children learned is to individuate themselves; at the same time their parents learned to see them differently. These two processes reinforce each other, and in due time created the same phenomenon with the teachers. These children were more prominent than other Ethiopian origin children, their parents tend to be involve more than other parents, so the teachers gave them more attention, reinforcing their individuation and their ability to express themselves. The program was the engine that propelled this process that is still continuing to this very day.

Discussion

The detection process came to an end and I was able to give a reasonable and a well-grounded answer to the question put to me: Does an early childhood program have an influence on its participants that is detectable ten years later? The answer is *yes*. Much to my surprise, the research process managed to detect differences between children who attended the Parents Kindergarten and those who did not. It also managed to generalize and conceptualize these differences and provide an explanation of them. The research process succeeded in doing so through the use of the abductive research logic initiated by the research method of projective techniques.

This combination was especially effective in this case, where even though I had a research question, I had no advance hypotheses; I had no research variables, only a general idea of what I was looking for, and the "things" I was looking for, if they existed, would be quite difficult to detect because of the long period of elapsed time, the cultural variety, and the difficulty of conducting a study within a population of Ethiopian origin. In addition, there was no organized, systemized, conceptual knowledge of the ways in which the Parents Kindergarten influences its participants. There was no way of knowing what aspects of former participants, if any, would show detectible differences. There was a very good chance that the interviewees are not aware of the changes that occurred and cannot verbalize them in a conventional interview, even an open-ended one. The projective techniques described here enabled me to begin the abductive research process and carry it through it to the end by bypassing these main difficulties: the difficulty in any population of answering a question about the influence of their kindergarten experience on their present attitudes or traits; the fact that these influences, if they exist after ten years, are no doubt very faint and difficult to detect; the difficulty in obtaining rich answers from people of Ethiopian origin; and finally, the fact that I was not able to ask any direct questions because, not having any way of knowing what exactly I was looking for, I had no way of phrasing such questions.

After generating the abductive process using projective techniques, I was able to go on, to pose "hypotheses on probation", examine them, and go on generalizing until I had a well established answer with a theoretical explanation to support it.

Notes

1. Kindergarten is a concept that was nonexistent in the Jewish community in Ethiopia, so it was necessary to familiarize both the children and their parents with its structure, content and accepted work methods. The basic objectives were to introduce mothers to the kindergarten environment and to provide the children with the accepted concepts, behavior and tools to aid successful integration into the host society.

2. The research was initiated and funded by the Bernard van Leer Foundation in The Netherlands. For a full report of this research see Levin-Rozalis, M., & Shafran, N. (2003). A sense of belonging: A tracer study of Almaya's Parents Cooperative Kindergarten. *Early Childhood Development: Practice and Reflection No. 19.* The Hague: Bernard van Leer Foundation. Available in MSWord or PDF format from: www.bernardvanleer.org.

3. The arrival in Israel of the massive Jewish immigration from Ethiopia is one of the few cases in the world (if not the only one), in which an entire community of Africans, possessed of a tribal culture, moved - as a community (and not as individuals) - into a modern Western society.

4. In Peirce's words: 'An abduction is a method of forming a general prediction'(2.269). But this prediction is always in reference to an observed fact; indeed, an abductive conclusion 'is only justified by its explaining an observed fact.' (1.89), as it was collected by Feibleman (Feibleman, 1946, p.122).

5. Neither the findings from the Arad group nor the complete findings of the study will be presented in this article. For the detailed findings see Levin-Rozalis, M., & Shafran, N. (2003).

6. It is important to note that the word *family* was intentionally not made specific. Thus, the question allowed for a wide range of possible answers and stories about the concept of family, including imaginary families.

7. For the detailed findings see Levin-Rozalis, M., & Shafran, N. (2003).

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