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Abstract

Twenty-four[1] women who became mothers after receiving donated eggs have participated in an interview study entitled "The Experiences and Attitudes of Mothers who have received Donated Eggs." Two of these women have been participating in the survey for more than five years. Focusing then on these two women, analysis revealed that their attitudes toward egg donation and genetic relationships changed over the course of their pregnancy, childbirth, and child-rearing. Each woman chose eggs from donors who were similar to herself, as closeness and resemblance would bring affinity and certainty of the child's roots; the donor's egg is a substitute for her own and produces a pseudo-kinship between mother and child. Carrying and delivering the child made each woman feel biological ties with her child. However, by the time they entered the child-rearing stage, the women had to face the absence of any genetic ties. They felt compelled to tell the truth to their children, and to raise the child to be sufficiently strong to endure being told, yet at the same time the women began to attach less importance to genes. Thus, the ideas of genetic ties held by women who became mothers through egg donation changed.

卵子提供を受けて母親になった女性24名へのインタビューのうち５年以上インタビューを継続した２名の分析結果を報告する。卵子提供、遺伝的つながりに対する考えは妊娠、出産、子育てを通して変化していた。自分に似ているドナーを選ぶことは自身の卵子の代わりになる、いわば擬似的親子関係を築こうとするもので、妊娠・出産は子どもとの生物学的つながりを感じさせた。しかし子どもが生まれると自身と子の遺伝的つながりの欠如に直面し、子どもに出生の経緯を伝えるプレッシャーも感じる。しかし子どもの

[1] As of July, 2017.

成長に伴って、遺伝的つながりの位置づけが低下してくる。縦断的インタビューではこのような変化を捉えることができた。

Keywords

egg donation・third party reproduction・non-blood parent-child relationships・genetic tie・life story

卵子提供・第三者が関わる生殖技術・非血縁的親子・遺伝的つながり・ライフストーリー

1. Research Problem: Genetic Ties and Affinity

This paper investigates how women who have received donated eggs think about the genetic ties between mother and child. In my surveys, the subject of similarity/dissimilarity has become the central topic of interviews. This discourse on similarity/dissimilarity is symbolic of the relationship between the individual and the child, and between the donor and the child. Physical resemblance, moreover, indicates genetic connections (Nelkin 2006; Nordqvist 2010), and blood serves as a predominant idiom of a “shared bodily substance” (Franklin 2013). Lesbian couples, also, utilize a conventional discourse of family resemblances as a normalizing strategy (Nordqvist 2010).

The terms “blood tie”, “genetic tie”, and “biological tie” are often understood by those who use them as being interchangeable. Indeed, until the recent advent of certain genetic knowledge, such as the understanding of DNA, the term “blood tie” was used in the sense of a genetic tie. On the other hand, the connection of blood is described as “thick”, “thin”, etc., indicating proximity or distance of kindred, with an implication that descent is based on the idea of genetic roots. This genetic tie implies that the paternal and maternal chromosomes combine to make a set for the next generation. As discussed by Lippman (1992), DNA code is redefined to biologically

determine health, disease, and impairment in essentialist, biologically determinist ways (Lippman 1992; Mamo 2005). By contrast, the term biological tie is broader than genetic tie and may refer to the pregnancy experience, as discussed in this article. Here, the former is used as a term referring to a physical connection through the experience of pregnancy and childbirth, distinct from the genetic tie. Interviewees do not make a strict distinction between the terms, I use "genetic tie" to mean a genetic linkage which has intergenerational genetic succession (a genetic tie contains collateral linkage). The concept of genetic tie includes physical attributes such as disease and constitution. The "biological tie" includes the genetic tie, but is a wider concept, which includes linkage by pregnancy. "Blood tie" includes the concept of genetic tie, but also includes bloodline, genealogy, descent, and lineage. The concept of blood tie has not only a vertical line but also the distance between two people, such as far, close, thin, and thick.

Although research exists on how recipients of gametes regard resemblance or genetic ties between parents and children as described above, a woman's attitudes toward the genetic relationship is most likely to vary over the course of the pregnancy, birth, and child-rearing: reproduction has been described as a *process* (Almeling 2015) in which the woman is creating a life course, interacting with society and subject to the influence of previous experiences; it is necessary to describe and understand the entire reproduction experiences of a woman, such as the hopes of parenting, attitudes to infertility, egg donation, pregnancy, childbirth, and child-rearing (Earle 2014; Kohli 2014; Almeling 2015). While research on resemblance and the genetic tie does exist, it is necessary to meaningfully analyze individual women in a longitudinal manner rather than simply obtain fragmented "snapshots" from a larger number of subjects.

Golombok et al. (2013) conducted a large-scale, longitudinal panel study in the United Kingdom on individuals involved in egg donation, sperm donation, surrogate birth, IVF, and natural pregnancy. Golombok et al. (2013) have investigated the psychological consequences of

reproductive donation by a standardized interview designed to assess quality of parenting and by questionnaire measures of anxiety, depression, and marital quality at ages 3, 7, and 10. They compared surrogacy families, egg donation families, donor insemination families, and natural conception families. And they assessed that children born through reproductive donation obtained SDQ scores within the normal range. They revealed that the absence of a genetic link did not result in a negative impact on the adjustment of children. Their concern was whether quality of parenting and children's adjustment differ depending on the type of reproductive technology and the disclosure of children's origin to the children.

The authors' research does not compare maternal distress, parenting, and children's adjustment among the types of reproductive technology, but rather investigated by longitudinal depth interviews parents' ways of thinking about genetic ties and about resemblance between mother and child.

In the USA, Zodrow (2008) found, from studies into donor insemination, that a father's commitment to parenthood has a greater effect upon the father-child relationship than does the genetic relationship. However, studies in several countries indicate that parents face a serious dilemma when they decide to share the donor's information with their child (Hargreaves 2007; Klotz 2013). Moreover, research into egg donation has revealed that women who became mothers by this method "have greater difficulty in shaking off a sense of not being 'real' mothers" (Kirkman 2008), suggesting that such individuals can experience some emotional tension during the child-rearing stage.

It is unknown whether parental attitudes to receiving donated eggs inevitably change with the child's development. In Japan, only a handful of studies have investigated experiences of egg donation (Tomiya et al. 2013; Shirai 2013; 2015; 2016), and very little attention has been paid to the attitudes and lived experiences of clients and donors. For this study, I carried out life-story

interviews using the methods of social constructionism (Atkinson 1995; Holstein 1995) so as to focus on the consciousness of the individual and their experiences, as well as looking at the subjects' decision-making, evaluations, and views of society's expectations.

The women I analyzed for this paper had chosen eggs from donors who were similar to themselves in certain ways, as closeness and resemblance can bring a sense of affinity and certainty; the donor's egg is a substitute for one's own. Carrying and delivering the child made each woman feel the biological tie between herself and her child. However, by the time they entered the child-rearing stage, these women began to face the lack of a genetic tie—the donated egg was felt to be *close to* but not *of* them, and mothers were sensitive as to whether or not their children looked like them. The women felt that they had to tell their children the truth of their origins and felt, therefore, a need to raise them to be emotionally strong enough to cope with this. At the same time, they began no longer to place an emphasis upon the importance of a genetic tie. I will consider these various changes in the following sections.

2. Study Overview

In 2011, I began an ongoing interview study entitled "The Experiences and Attitudes of Mothers who have received Donated Eggs." I recruited 36 women who had decided to use donated eggs; 24 became mothers as a result of donation, and, at the time of the interviews, 12 had not yet become pregnant or had given up. In addition, I interviewed eight women who had sought egg donation but had not started the process. For this paper, I analyze the narratives of two of the 24 mothers in order to understand their longitudinal experiences of egg donation; of the original group of 24, nine were interviewed more than three times, and these two subjects in particular were followed for more than five years, a period which was considered appropriate. (Three women were interviewed over a period of three years, but this was considered too short a time for

an adequate understanding of maternal attitudes that may change drastically through experiences of pregnancy, giving birth, and dealing first with a newborn baby and then a growing child.) While these women's male partners shared many of the same experiences and were prepared to talk about their reasons for using egg donation and their attitudes toward their partners, the sample size of men was too small for analysis. The attitudes of Japanese husbands would be better served by a separate paper, as the difference in responses can be marked, reflecting the roles each parent is expected to play in Japanese society.

Although the two in-depth cases provide some valuable insights, it cannot be claimed that they are entirely representative of the group. I raised the topic, for example, of the donor's affinity, in view of most of the women's insistence that the donor be part of their "in-group" (*uchi* 内, i.e. a Japanese person),[2] but among the 24 women I interviewed there were at least four whose donor

[2] In Japan, seven institutions carry out donor egg procedures, either according to their own guidelines or in compliance with those of an affiliated organization. In some cases the clients seek out a donor themselves, but anonymous egg banks have also been established and are now in operation. According to data (Yoshimura 2013), the majority of cases involve a client arranging personally or via an agent to undergo implantation abroad; to this end, a Japanese-language egg-donation agency has been operating in the United States since 1995. In Japan, 99% of hospitals and clinics carrying out IVF are not involved in the egg donation.

The number of pregnancies in Japan involving donor eggs has increased considerably in recent years. In 2012, there were more than 300 births using donated eggs, a near three-fold increase in three years. The majority of the donations (56%) were in the United States (Yoshimura 2013). Further, according to reports (Asahi 2011), annually more than 100 Japanese women become donors, travelling to countries such as South Korea or Thailand in order to donate to Japanese clients overseas.

Egg donation is just one aspect of third-party assisted reproductive technology, which also includes sperm donation and surrogate birth. At present, Japan has no laws to regulate this kind of reproductive

was not ethnically Japanese. While some participants might not have insisted on the sense of "affinity" associated with fellow Japanese, they did insist that the resulting child should "look Japanese" to others—some, for example, imposed the condition that the donor be of Asian extraction (especially East Asian, such as Chinese).[3] This stipulation probably has a different basis than the sense of "affinity," and might be more about the child not looking different from their peers. Affinity, in this paper, refers to a close relationship between two people or the strong feeling that they understand and like each other because of a resemblance in qualities, features, or structure that they share. Originally, affinity means relationship, especially by marriage as opposed to blood ties, and it implies that two people or things have differential linking based on some factor such as law.

Finally, some couples chose eggs from women of a different ethnicity, specifically European donors. The two women who continued the interview process for more than five years were,

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technology; it is neither lawful nor unlawful. It was anticipated that sperm and egg donation would be granted legal recognition under certain conditions and that the 2013 report of the Assisted Reproductive Technologies Review Committee, which recommended the criminalization of surrogate pregnancy, would be incorporated into a bill. However, no such legislation has come about, nor has any bill been proposed for presentation to the Diet (Japan's legislative chamber). Specialist organizations, such as the Japan Society of Obstetrics and Gynecology (JSOG), the Japan Society for Reproductive Medicine (JSRM), and the Japan Society of Fertilization and Implantation (JSFI), have released their recommendations based on surveys of members' views but there are a number of inconsistencies among the suggested guidelines. Furthermore, there are currently no systems for managing the records of users, donors, or resulting children, or of the medical institutions and physicians that carried out the procedures. Any formal means whereby children can trace their genetic origins is also lacking.

[3] One of the women said, "I don't like myself much anyway, so I had no resistance to not using my own eggs."

coincidentally, particular about using a Japanese donor and received egg donation in the United States. These two women both also went through the process of egg donation on the premise that they would tell their children that they were donor-egg conceived, although almost half of those interviewed said that they would not tell their child.

The research was conducted under the Grants-in-Aid for Scientific Research program of the Japan Society for the Promotion of Science (JSPS). Interviewees applied to take part by responding to an advertisement on a website, and they participated after consultation with medical personnel. The participants underwent a number of interviews, each of which lasted between 30 minutes and two hours.[4] Ethical issues were considered and addressed. Participants received an explanation detailing the purpose of the study, the fact that their privacy would be protected and that they could suspend or withdraw their participation at any time, and gave their consent after discussion. Following the interviews, I prepared transcripts of the audio recordings. The study was approved by the Ethics Board of Shizuoka University (No. 14-12) and complied with the research integrity provisions of the JSPS, Shizuoka University. Participants have been given aliases. Interview content in this paper has been edited, with some episodes being fragmented and some unessential content modified. To further prevent individuals being identified, certain details have been omitted (such as the number of children, dates, and reasons for not having had a child). Both in-depth interviewees received eggs abroad from unidentifiable donors with whom they had no prior connection.

Table 1: Overview of women who became mothers using donated eggs.

[4] For distant participants, I used telephone interviews or mail correspondence. However, all of the interviews with the two participants discussed in this paper were face-to-face.

"Emi"	Because of infertility, Emi received donated eggs from an anonymous Japanese woman via an agent in the US. At the time of the first interview she was residing in Japan, had given birth in her early 40s, and had a pre-school child. Five years after the interviews commenced, she has had 10 interviews and further mail correspondence.
"Naomi"	Because of infertility, Naomi too received donated eggs from an anonymous Japanese woman via an agent in the US. At the time of the first interview she was residing in Japan, was pregnant, and later gave birth in her late 40s. Five years after the interviews commenced, she has had 9 interviews and further mail correspondence.

3. Pseudo-Genetic Ties: Donated Eggs as a Substitute for One's Own

Because of premature menopause, Emi had given up on the prospect of bearing a child. However, she decided that she would undertake egg donation because her "desire to become a mother" had further strengthened after the age of 40, although she "had the notion that this was *an extreme type of treatment, akin to the kind of treatment where a small child is sent abroad for a heart transplant*."

Prior to becoming pregnant, Emi had considered adoption but felt that egg donation would be preferable. When her first child was two years old, she explained:

> I thought about how *children who are put up for adoption have a negative background*, and felt that I didn't have the capacity to raise such a child. While I was never adamant that the child should have blood ties to my darling husband, I felt that egg donation

> would offer *peace of mind* because *half of the genes come from the husband*.

This last point is in line with what are considered “traditional” norms, such as blood ties and genetic connections.

Egg donation is a technology whereby the child does not have a hereditary relationship to the mother, but for some it is preferable to adoption. To begin with, the child is still related to the husband. The words “egg donation would offer peace of mind because half of the genes come from the husband” show that Emi was evaluating this relationship. Secondly, prospective parents can choose a donor based on factors such as affinity, similarity, or physical resemblance. Thirdly, as described later, the pregnancy provides a “biological tie” and birth experience.

For example, the results of a questionnaire completed by all of the women in the study indicated the reasons given for having a child through egg donation: “If I use a donor egg, I may become pregnant and give birth” (81.8%); “[It is an] extension of the infertility treatment” (45.5%); “I wanted to have my husband’s child” (45.5%); “I wanted to be pregnant and deliver” (45.5%); and “It is better than adoption/I regard it as a challenge before adopting” (18.2%) (Shirai 2016b).

The other participant, Naomi, also modified her understanding of hereditary relationships. During her pregnancy, she said the following:

> As to whether it is better to have children in your life or not, I believe in the happiness of having children around. My husband and I and our parents felt the same. We felt that we should have children, even if it meant adopting. I know someone who got a special adoption.[5] The child doesn’t look like her, but the way it acts does *resemble* her. That’s

[5] Special adoption is a welfare-based adoption, instituted in 1987. It is restricted to married couples and to

> what the parent/child relationship is all about. I like to think that the *foster/child-rearing parent is more important than the birth parent*. There may be things you can gain out of such parenthood rather than just being so fussy. So, thinking along this line, I want to become a parent, too.
>
> As for my own family, my brother has children, and they *have already inherited the family genes*. I reconciled myself to egg donation, *thinking that I should be satisfied for only my husband's sperm to be used. Things will be okay if only I am not so fussy*. I want to experience *the process of becoming a mother*.

Naomi spoke about how she felt before deciding to undergo egg donation and about why she made that decision, drawing parallels with adoption and wanting to believe that the "foster/child-rearing parent is more important than the birth parent". On the other hand, as with Emi, Naomi's reasoning was underlined by "traditional" norms of "blood relationship between

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children under six years old and is decided by a family court. Adoption of a child is quite unusual, with only about 500 adoptions each year; such children are popularly perceived negatively, with doubts about their background and the circumstances surrounding their birth, with suspicion that the child might be the result of rape, incest, or from an unknown father, or with connections to poor maternal health, sexually transmitted disease, or mental health issues.

To put Emi's words "family genes" or family genetic line into context, it is important to outline certain Japanese notions of tradition, although "tradition" does not necessarily imply long-standing custom but rather what E. J. Hobsbawm refers to as "invented tradition" (Hobsbawm and Ranger 1983). In the traditional patrilineal family line (the *ie*), family succession rather than consanguinity is emphasized, and adoption between relations, particularly of adults, might occur to maintain the integrity of the *ie*. According to one source, 1% of the population of any given village might have been adopted (Ueno 1998)).

parents and child". Since her sibling already had a child, the genetic line of the "household" (the *ie* 家) would be continued. In addition, her husband's sperm could be used to fertilize the egg, and egg donation would enable her to experience *the process of becoming a mother* through pregnancy and childbirth. Based on such reasoning, she concluded that "things will be alright, if only I am not so fussy".

However, both Emi and Naomi were concerned with "whether [my] child is similar to [me] or not." Naomi selected a donor who had a *similar appearance* to herself, so that other people would not think that the appearance of mother and child is "unnatural."

For both Emi and Naomi there was a strong focus on "whether her child resembles her." Similarly, there is often a focus on physical similarity between the child and parents during the process of adoption. "Whether the child looks like the parents" is an important feature of the success of an adoption (Goldfarb 2016), and the extent to which "they are alike" is a manifestation of what "is accepted as natural," even though adoptive parents and children have no genetic reason to affirm resemblance, especially in cases of adoption from outside one's ethnic group (Howell and Marre, 2006)

Emi and Naomi selected different agents, but both were based in America and limited themselves to Japanese donors. Emi stipulated that the donor be Japanese and that the donor's blood type be the same as her own. A list of donors was sent, allowing her to choose one from photographs and profiles. Emi's choice was further narrowed down to those of a similar height and demeanor to herself. She was able to judge personality from handwritten letters and short comments and was able to meet those women she felt familiar with.

Naomi's main precondition was for a donor who would be prepared to meet the child in the future. The first donor she chose was Asian, looked *similar* to herself, and had the same blood type, but that person could not immediately donate and so she sought another. She widened her

criteria—other blood types were possible, but she still wanted a donor whose demeanor and appearance were similar to her own, although the donor did not have to be a university graduate. The woman who eventually became the donor was one who could come to the hospital at the required time.

Neither Naomi nor Emi underwent any prenatal testing such as amniocentesis. For Naomi, it was most important that "a child comes to her home" and that she became a mother, and so any child, even if the child had a disability, was welcome.

While half of their child's genes would originate from neither parent, this did not mean that Emi or Naomi would accept them from just anyone else. Emi's donor was anonymous, but she knew the donor's profile and saw photos. Emi insisted the donor be Japanese and of the same blood type, and one of the reasons for selection was the donor's likeness to her.

> I only wanted the donor to be a *Japanese person* and to be of the *same blood group*. I was prepared, of course, for the child not looking like me, but I wanted it to look like me in some ways; so, while the person I chose was not exactly my spitting image, *she seemed to have the closest resemblance to me when I compared those people on the donor list*. I then got an idea of their *character* from what they wrote on their profiles. [When her first child was two years old.]

It is no coincidence that both of the women chose donors of the same blood type. In Japan, most people know their blood type and learn patterns of parent-child blood type inheritance at school. Therefore, selecting a "natural" heritable blood type is necessary so that people around do not think that parent and child are unnatural. Likewise, choosing "a donor [who] resembles herself" is a necessary element for "naturalness" as perceived by society and possibly by the children

themselves. Similarity of appearance, blood type, choice of Japanese ethnicity etc. are all indicators that the donor's egg is close to her own and an adequate substitute.

As mentioned above, physical resemblances signal genetic connections (Nelkin 2006; Nordqvist 2010). In the era of medicalization of kinship (Finkler 2001) or biological kinship (Carsten 2004), kinship "grammar" (Gunnarsson Payne 2016) is genetic connection. Kinship brings resemblance and affinity (Mason 2008), and certainty to the sense of an in-group (*uchi* 内) or "flesh and blood". Nordqvist (2010) has discussed resemblance and affinity in gamete donation, but in Japan kinship is also a basis for certainty, confirming the in-group or "flesh and blood". The traditional Japanese *ie* or "household" (家) was based upon kinship, and upon this foundation were constituted *ie-rengou* (家連合) which shared a genealogy, and family federations (*dozoku* 同族). *Ie-rengou* became units of production, inheritance, and community ritual. Members of the same *ie* have a sense of in-group certainty and predictability, and they are expected to be reciprocal. Japanese kinship in contemporary society is the grammar not only of emotional ties such as affinity, but also of the borders of the primary group in matters such as inheritance and ritual.

When considering the *uchi* "in-group", Emi, like Naomi, insisted that the donor be Japanese. Using a Japanese donor leads to a sense of "affinity" and "in-group" consciousness, something which would be lacking if the donor were non-Japanese. Because the donor is Japanese, she is already part of an "in-group" (someone akin to oneself) in a way a non-Japanese could not be. Affinity is shaped by various kinds of features that have biological or legal substance, such as blood relationship, kinship in law, ethnicity, nationality, and race, or features such as personality, feeling, and sympathy that have emotional substance.

The issue of certainty is more complex. This insistence on physical similarity is important not only for a sense of affinity. As in any modern society that tries to reduce the sense of uncertainty

(something discussed by Ulrich Beck in *Risk Society* (1986)), "peace of mind" is a priority item for Emi. When half of the genes in a woman's child come from her husband, it will not only cause her to place value upon "blood ties" but will also allow her to have "reduced uncertainty" of the child's roots and predictability (Shirai, 2010). Likewise, people have a preference for adoption and gamete donation between family members and relatives; this is not based on grounds of lineage or blood relationship, but because they seek affinity and the mitigation of uncertainty (Shirai, 2010). Becker (1991) has argued that genetic uncertainty reduces a preference for children without any biological connection in the adoption process. In this way, a woman who is going to become a mother through egg donation will try to choose a "close" or "affiliated" egg as a substitute for her own, a process that one could say is aimed at trying to create a pseudo-genetic tie.

4. Biological Ties in Pregnancy

If the mother-child relationship is biomedicalized, will this not then influence her evaluation of pregnancy and childbirth? Emi said that she had lived with a complex about her premature menopause for many years, but she found great joy in becoming pregnant because it meant that her "body was able to function as it should". Even when her child had reached two years of age, she mentioned that she did not think that they lacked "blood ties." The reason she gave for this was that, although her child did not share her genes, the embryo was implanted into her womb and grew to term on her blood.

> I never had regular periods, and I have the kind of womb that has had only a small fraction of the experience that normal people have, so I was very delighted that *my body was able to function as it should* [i.e. get pregnant]. You see, I had this complex. I am

> now able to feel proud about being a woman. [When her first child was two years old.]

> Although the child does not share my genes, as such, it was implanted in my womb and grew big on my blood, so *I never think that we don't have blood ties*. [When her first child was two years old.]

At the time of her pregnancy, Naomi, who had selected egg donation believing that it would allow her to "experience the process of becoming a mother," used an expression ("life will be created through my blood") similar to one which Emi used, and also said that "a relationship with the child will be established" through the pregnancy and delivery.

> Rather than thinking that I can't love the child because we don't share genes, I want to believe that *I can form a relationship with the child through the ten months of pregnancy*[ten months in Japan]. The *life will be created through my blood*, the child will listen to my voice as it grows, and it will be born into the world from my womb. [When she was pregnant with her first child.]

These comments highlight the preeminent importance of carrying and delivering the child; even though there was no genetic relationship, it was stated that the child "grew big on my blood." They said that, since they carried the fetus in their womb and it gestated in their blood, they have a "biological tie," if not a genetic one. This narrative accords with the metaphor of "flesh, blood, and food" providing material preeminence and legitimacy (Harrington 2008). Unlike adoption or sperm donation, egg donation can offer a genetic tie with the father as well as the mother's experience of carrying and delivering the child (Murray et al. 2006). The mother/child

relationship is legitimized by placing more weight on biology (pregnancy and delivery) and less on genetics (Kirkman 2008).[6]

Ivry has pointed out that from a Japanese cultural perspective in respect of pregnancy there are important implications concerning the "environment of the fetuses" (Ivry 2007; 2009). The mother is considered to have "responsibilities" toward the child: to nourish, to manage weight, to reduce stress, to attend prenatal classes, and to have a smooth pregnancy and delivery with as little medicine as possible; or, as Malacrida has said, "to accomplish women's rite of passage to motherhood" (Malacrida et al. 2012). Anthropological research in India has shown that the child is believed to inherit a bit of the father and mother from the mother's blood when the fetus is in the uterus during pregnancy (Matsuo 2015); by contrast, popular understanding in Japan is based on knowledge of genetics. Independent of this scientific knowledge, however, much is made of the environment of the fetus. For example, the child while being carried is called "the child for whom the mother hurt her belly" [*hara-o itameta ko* 腹を痛めた子]. In Japan, a special significance is attached to the physical aspects of childbirth; the pain of delivery is considered by many to be essential to engendering "maternal instincts". This is one explanation for the low use of epidurals and other regional anesthesia in Japan (2.1% of deliveries in 2007 (Shimada 2007)) and a common explanation for the stereotypical stepmother's tendency to treat her stepchildren badly. In support of this, Kato has shown that most Japanese women who receive IVF treatment regard the embryo as being their own child (Kato 2014). And indeed, Emi and Naomi both experienced the bonding between themselves and their child during and following their pregnancy.

[6] In the case of adoption, the importance lies in neither the genetic relationship nor the biological relationship; it lies in the emotional relationship or the time spent together, consistent with the norms of the modern family.

5. Genetic Ties between Donor and Child

Although the women were sure of their biological ties to the child during pregnancy, immediately after bearing the child they were confronted with evidence of the genetic tie between donor and child. When her child was born, Emi noticed that the child had those of the donor's features which were different from her own. This affected her, even though she had been fully aware of this possibility prior to the birth and even before the pregnancy. The egg was close to her but was not itself *of* her.

> When the child was born, I thought to myself, "*Indeed, this child doesn't look like me*, and why would it?" and I cried. Those around me said it looks just like the father, but I thought that it *resembled the donor* even more than it does the father or anyone else. I wasn't upset about that. The donor was a lovely person. But, whenever I looked at the baby's face, I found it startlingly similar to the donor's. It was as if the baby was saying, "Mama, I know everything." It felt like I was being seen through; it was very unnerving. [When her first child was two years old.]

In order to enhance the resemblance between her and her child, Naomi *bought matching clothing* for the baby.

> I accepted that there's nothing anyone can do about the fact that the child doesn't resemble me. However, *I don't want anyone saying the child doesn't look like me, so I got matching clothing with the child*. I felt I was being small-minded. [When her child was

three years old.]

Naomi's main precondition in choosing a donor had been that the donor would meet the child in the future; however, after she gave birth, she strove to create a sense of similarity by wearing the same clothes and selecting photographs of the baby that highlighted its resemblance to herself. However, she also realized that, even if she made such efforts, as the child grew up and its features developed any physical disparity would become increasingly apparent. If someone said "your child resembles papa," she would feel disappointed, but if someone said "the child resembles mama," she would think that person a liar. The wider results of the survey revealed that 90% of participants thought that "the child's looks do not resemble themselves," while 60% had been told that "the mother and child are not alike"; moreover, a total of 40% of participants reported that the child's "character and disposition" were not similar to the mother's, and 60% that the child's "individual mannerisms and habits" were not like those of the mother (Shirai 2016b).

Although in each case a Japanese donor was chosen by way of affinity, neither woman went so far as to regard the baby as "my own substitute" (someone identical to oneself). Thus, the dissonance and ambivalence regarding "genes" may also stem from the co-presence of the feeling both of the donor's sameness and—paradoxically—her otherness. Research has revealed that individuals who become mothers through egg donation "have greater difficulty in shaking off a sense of not being 'real' mothers" (Kirkman 2008). Such research suggests that individuals who become mothers after receiving donated eggs experience difficulty and tension during the child-rearing stage.

6. Release from Genetic Ties

However, in the process of raising their children, the women came to report changing ideas about their genetic ties with them. One such, which they hoped that their children would come to agree with, was the notion that “genes are not important”. Nevertheless, while they themselves felt released from the sense of genetic ties and wanted their child to feel this release too, they were aware that the child might not. Consequently, feeling pressured to tell their child of its origin, they also felt the need to raise the child to be sufficiently strong to cope with being told.

As her child grew, Emi made statements such as “the word ‘gene’ has been blown out of proportion” and “one should simply rejoice that a life has come into the world”. She was beginning to evaluate hereditary relations differently by this time, evolving the opinion that “genes are not important” and that “the birth is wonderful itself.”

> Genes. Genes. Everyone goes on about genes. People talk about the lack of identity. What these people say is miles away from what I feel. *I don’t think your genes are all that important in the first place*. The word “gene” has been blown out of proportion. Why should it be such a tragedy for the genetic mother and the child-rearing mother to be different? I just don’t understand. Every sperm and egg is arranged for the purpose of creating life, and a new life is made and then born at miraculous odds, so *one should simply rejoice that a life has come into the world*. This is what I want to say to my child if he/she feels hurt [about how he/she was conceived]. [When her first child was two years old.]

Naomi had said that she considered the heredity of “blood relation” important. However, not long after the child was born, she started expressing the view that they were “just ahead of the curve

[in terms of family diversification]".

> There are more and more stepfamilies and single mothers. We're just *ahead of the curve;* there's going to be more and more egg donations. There are many different types of people and many different types of ideas. My child will doubtless face difficulties, but I don't want to end up feeling guilty about that. [When her first child was two years old.]

This change of attitude toward egg donation led to a subsequent change of feeling towards her child. Emi had been desperate to have a child and had thought that egg donation would offer more peace of mind than adoption. When the child was born, she felt that "it doesn't look like me; it looks like the donor." When it was two years old she said "the child may resent me" and she started to feel sympathy and felt a sense of guilt and responsibility for creating a burden for the child.

> I plan to tell my child [about the fact that he/she was born from a donated egg]. *Maybe he/she will be very shocked and resent me*, but I am happy and grateful at having been able to give birth to him/her. I'm happy about what I've done, and that won't change, *even if he/she resents me* or wants to kill me. [When her child was two years old.]

When Emi's child reached school age, empathy with the child led to her feeling further responsibilities. She felt a sense of responsibility concerning what kind of education and environment to offer the child, as well as pressure about having to raise the child to be strong enough to overcome hardships.

> I feel *responsible for having burdened the child with a life different from that of others*. [When her first child was six years old.]

> I feel that I *have to raise my child to be strong enough to overcome* the shock of finding out he/she was born from a donated egg. Hence, I'm very strict with him/her. [When her child was six years old.]

When referring to someone who was himself a result of donor insemination and who claimed that those like him lacked an identity,[7] Emi asked "why should someone think this way?"

> I wish Mr. Kato [an offspring of donor insemination] would express some gratitude. He says he's searching for the donor, but *why should someone so successful think in this way?* I don't want him to speak on behalf of all donor insemination offspring.

Emi also considered each embryo as a potential life. She could not bring herself to dispose of a fertilized embryo, reflecting that "it does not matter which two people the child gets its genes from". She decided, therefore, to give away the frozen embryos free of charge.

As her child grew older, Emi came to acknowledge its individuality and independence

[7] The story of Mr. Kato had appeared in the media in Japan. He had insisted on the right to know his own genetic roots, and Japanese people who have received gametes will probably know his story. In Japan, people born by sperm donation contacted the media from 2003 on, in response to discussion of the legalization of gamete donation, and in 2005 a group of interested parties was formed. Mr. Kato's case received extensive coverage, but it was not until 2010 that he showed himself and revealed his real name on television. The parties went on to publish a book in 2014 that presented their stories.

and her considerations concerning the hereditary relationship changed. She thought now that she wanted her child to feel equality as opposed to merely being this or that person's child. She is not a Christian, but she told me that

> I want to get him/her enrolled in a Christian school. According to Christian teaching, *he/she is a child of God, so I would like to enroll him/her in a school that embraces such teaching*. [When her child was six years old.]

Parents face a serious dilemma when they are about to share the donor's information with their child (Hargreaves 2007; Klotz 2013). On the one hand, Emi has sense of closeness to her donor. When her child was two years old, Emi said the donor was a "lovely person" and that she "wanted her to be happy."[8] But the other hand, When Naomi was pregnant, she said "*I would ideally like for the child not to care [who the genetic mother is]*"; later, when her child was two years old, she said that "*the desire to one day meet one's parents [placing importance on blood ties] is a Japanese way of thinking*" and that she would therefore like her child to be "Americanized." To Naomi, this emphasis on blood ties is distinctly Japanese and is not, she believes, shared by Westerners (which she equates with Americans). It might have been her

[8] From Emi's account, "the donor was a lovely person" suggesting that she sees the donor as part of her related group, of her "extended family." It has been suggested that donors and their relatives do not consider themselves as "other" to the recipient family: donors might blame themselves when their clients fail to get pregnant (Yee 2011), and parents of donors might consider the clients' children as their grandchildren, citing the genetic relationship (Beesonet al. 2013). It is apparent that the donor and her client form a special relationship, formed through the exchange of a body part (as a gift or in exchange), that is also present in organ donations (Lock 2002), through the trade and transfer of the gamete.

expectation, too, that her child would prefer to see things like this. In this way, Naomi was coming to relativize adherence to hereditary relations rather than simply feel responsibility for a child.

> Considering that I would receive a child from such a system, I decided that I would *proceed on the premise that I would notify the child*. If the child learns it from a stranger, this will undermine my close relationship with the child. For this reason [a "natural" appearance], I wanted the donor to have a *similar appearance* to myself. I chose a donor from a shortlist of people who *agreed that they would meet the child in the future* when the child so wishes. *I would ideally like for the child not to care*, but that might not be the reality. [When she was pregnant with her first child.]
>
> *The desire to meet one's parents eventually is a Japanese way of thinking*. Perhaps it would be good if my child were Americanized. [When her first child was two years old.]

These two women's attitudes toward egg donation and toward the genetic relationship that egg donation precludes were quite clear; firstly, they opted for egg donation as it "offers peace of mind because half of the genes come from the husband," and because of their desire to "experience the process of becoming a mother." However, during the course of their child-rearing, they came to believe that "genes are not all that important in the first place" and that their family was "ahead of the curve." On the other hand, the notion of "the donor's genes" would cross these women's minds whenever they saw the likeness of the donor in their child. This suggests that the women were experiencing constant dissonance on account of not being free from the influence of "genes."

A second aspect concerns their children. As mothers, they respected their children's circumstances and felt guilt about the trauma they could foresee their children facing. Such guilt made them feel that they should tell their child the truth. In the course of their child-rearing, they felt pressure to "raise the child to be strong" because they envisaged the child's trauma inter-subjectively. The fact that the mothers were both bound by and, paradoxically, free from the influence of genes was reflected in their dissonant attitudes toward their children. On the one hand, their inter-subjective sense of the child's possible future trauma put them under pressure, but, on the other hand, they expressed hope that the child would grow into someone who would not look for their genetic mother, that they would not be someone who is bound by genes but would instead be free from concerns of ties of blood, characterized by the word "Americanized".

Gamete donation can reinforce the traditional family structure, inasmuch as the child is the genetic child of one of the partners in an exclusive marital relationship. At the same time, it can provide an alternative family structure; as, for example, in parenthood without a male presence or under the severing of the genetic relationship between mother and child (Kirkman 2008; Burr 2009). Thus, there are contradictory notions of gamete donation: "reinforcement of the family" and "broadening of the family." Relating this to the emotional experience of the women who receive donor eggs, donors who resemble themselves are selected and they feel a biological tie with the child by carrying and delivering it, thereby showing reinforcement of the family. At the same time, by feeling a sense of affinity with the donor and saying they are not bound by genes they demonstrate a broadening of the family, becoming "release from genetic ties".

5. The Future Outlook

This paper's analysis has shown that these women's attitudes toward egg donation and genetic

relationships changed over the course of pregnancy, birth, and child-rearing. In this study, mothers were sensitive as to whether their child looked like them or not. The extent to which "they are alike" is a manifestation of what "is accepted as natural." A woman who is going to become a mother through egg donation will try to choose a "close" or "affiliated" egg as a substitute for her own, from a donor with a physical resemblance, of the same blood type, and from the same ethnic group. It could be said that this is an attempt to create a pseudo-genetic tie. Because the mother-child relationship has become biomedicalized, the women under investigation said that since they carried the fetus in their womb and it gestated in their blood they have a "biological tie" if not a genetic one. In Japan, great significance is attached to the physical aspects of childbirth; the pain of delivery is considered by many to be essential to engendering "maternal instincts".

Although the women in this study were sure of their biological ties with the child during pregnancy, immediately after childbirth they were confronted with evidence of the genetic ties between donor and child. However, in the process of raising their child they came to reinterpret the notion of their genetic ties with them. One such was the idea that "genes are not important," and their hope that the child will grow up to concur. Another point of change was that because there was no genetic tie between mother and child there was a pressure to eventually inform the child of its origin and, therefore, to raise it to have the strength to cope with being told.

While such changes in the way genetic ties are conceptualized have been highlighted by longitudinal, qualitative interviews, the analysis has its limitations. Further research is being conducted with women who have received gametes from kinship donors and from donors of different ethnicity, as well as with women who opt for adoption after previously intending to use egg donation. The absence of male voices, too, must be addressed, and the question of how fathers feel about having a genetic tie with their children which is not shared by their wives,

though it is their wives who experience pregnancy and childbirth. A full range of approaches to examine and understand each aspect of the non-blood parent and child relationship in contemporary society needs to be undertaken.

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