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## Suitable substances: how biobanks (re)store biologicals

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Biobanks connected to In Vitro Fertilization hospitals do not merely function as repositories for biologicals. They also contribute to the *restoration* of reproductive substances to distinct social environments. Cases of commercial gamete donation in India often entail the infringement of social boundaries, as the socioeconomic backgrounds of gamete donors and recipients diverge. In a highly stratified society, biobanks perform “relational work” in order to nevertheless enable the transaction of substances. The selection of donors, the secluded laboratory, medical protocols, bureaucratic procedures, policies of anonymity, and rhetorical devices all reconfigure intimate material provided by specific donors into standardized products and relatable entities, thereby augmenting their economic value. The fact that relational work is not only performed on substances but also on suppliers and biodata sheets invites more general reflections about notions of “the living” or “the biological” in biobanks around the world.

**Keywords:** Biobanks; biological substances; relational work; value; in vitro fertilization; India

### Introduction

Mr. Singh is the owner of one of North India’s largest sperm banks. Since the 1990s, his company has been preparing cryopreserved donor semen samples and distributing them to fertility clinics across the country. More recently, Mr. Singh’s company has introduced an auto-conservation project. Men can now store their own semen. “In this case we only act as bankers,” Mr. Singh explained to me. “There is a monthly fee, it is like having a locker in a bank.” Mr. Singh’s comparison of his company to a bank is fitting, not only concerning the auto-conservation program but also in terms of the production and circulation of cryopreserved donor samples. Instead of only holding and storing assets, banks work with them, transform them, and supposedly augment their value. And that is exactly what Mr. Singh’s bank does with its products. It recruits men to

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provide samples, which are then tested, packaged, cryopreserved, retested, and finally circulated. The reconfiguration of a particular semen sample into a standardized product entails its technical manipulation (see Moore and Schmidt 1999, 340 for “technosemen”). Additionally, the semen sample is turned into a *relatable* entity, a suitable substance, so to say.

It is the latter operations that I explore in this article, as they take place in daily clinical life in biobanks connected to In Vitro Fertilization (IVF) hospitals in Delhi, India. I examine biobanks as spaces that, as the editors of this special issue call it, “work on the living.” Modes of “working on the living” encompass a variety of operations, particularly in IVF biobanks where reproductive substances are both stored and passed on to recipients. Thus, apart from conservation and storage, biobanks are involved in the *restoration* of reproductive substances to distinct social environments after a period of time. For this reason, biobanks serve as transformative arenas in which gametes are shaped through something akin to what Zelizer (2005, 2011) has termed “relational work.” Relational work in biobanks reconfigures bodily material provided by specific donors into standardized products and relatable entities, which enables recipients to accept biologicals from donors whose socioeconomic background does not match theirs. Work on the living in IVF biobanks erases donors’ traces, inscribes reproductive substances with new meaning, and enables them to circulate. In the process, it also augments their social and economic value.

Since relational work is not only performed on biologicals but also on donors and biodata sheets, it invites broader reflections on the notion of “the living” or “the biological” in biobanks. “New biologicals,” as Franklin (2001, 303) compellingly contends, “defamiliarize the very nature of what it is to do biology or be biological.” Yet, as Edwards (2014, 58) continues in allusion to Franklin’s argument, “if biology is indeed ‘making itself strange’, then of what the biological consists is strangely an ethnographic question.” Thus, ethnographically describing how the biological appears and is worked on in IVF biobanks in India is an important goal of this article.

I rely on ethnographic research conducted in India for 18 months between 2010 and 2014. Over several months, I worked in one private and one public hospital in Delhi, where I followed daily clinical routines, participated in consultations, and observed medical procedures. I also conducted semi-structured interviews and informal conversations in English or Hindi with around 100 IVF patients and medical practitioners, either in the hospital or their homes. I further interviewed around 50 gynaecologists and embryologists from other major IVF hospitals and laboratories in Delhi when I visited their workplaces. Both of my primary fieldsites had biobanks attached to their IVF units that stored semen and embryos. Additionally, I paid day visits to various independent ART banks in Delhi and conducted interviews with agents and donors attached to these banks.<sup>1</sup>

**(Re)storing bio**

Both bioethicists and anthropologists have discussed biobanks along two main avenues: in terms of ethical concerns, particularly regarding the informed consent of donors (e.g. Allen and Mcnamara 2011; Hoeyer 2002, 2004; Hoeyer and Lynøe 2006) and in terms of governance and regulation of biobanks and biologicals stored there (e.g. Busby 2006; Gottweiss and Zatloukal 2007; Hoeyer 2012; Papaioannou 2012; Patra and Sleeboom-Faulkner 2009). In this article, I extend the focus of this body of literature from issues regarding the acquisition and maintenance of biological material to its *restoration*. I examine biobanks as spaces that not merely acquire, store, and work with biological material but as spaces that dispense and *restore* it to distinct social environments. Biobanks connected to IVF hospitals pass on biological substances to recipients, who then use them for medical interventions such as intrauterine insemination or IVF.<sup>2</sup> To facilitate these transactions, IVF biobanks transform biological substances into relatable entities thereby augmenting their social and economic value.

The relation of biology and economy has been explored through a variety of concepts, like “biovalue” (Waldby 2002), “tissue economies” (Waldby and Mitchell 2006), “bioeconomy” (Cooper 2008), or “biocapital” (Sunder Rajan 2006). Scholars have pointed out that rather than being intrinsic to biology, economic value is produced and realized through specific relations. Cooper and Waldby (2014), for instance, argue that biological tissue does *not* constitute a readily available resource (“res nullius”). Relying on a Marxian labor theory of value, they highlight the “clinical labor” provided by tissue donors. Helmreich similarly argues that transformations in biotic substance (such as differentiating activities of cell lines) depend on concrete labor in the laboratory as well as regulations that allow biology to become profitable. He cautions against mistaking biological potency for “primordial ontology upon which biocapitalism merely elaborates” (2008, 464) and contends that organisms only become “natural factories” in certain social relations: “biotech geese cannot lay golden eggs without daily tending” (2008, 474). Building on these insights, I further elaborate on the specific relations and contexts that contribute to the valuation of biological material in IVF biobanks in India.

Biologicals in biobanks are certainly valued for their biological and economic potency. But they are also judged according to their “social biocapital,” i.e. their connections to specific donors (see Helmreich 2008 for “species of biocapital”). In this case, value does not accrue from labor power of donors or laboratory staff but from the (imagined) webs of associations in which biological substances are embedded. These relations are either valued and realized economically or are devalued and erased. In the following I show how biobanks connected to IVF hospitals in Delhi strategically conduct “relational work”<sup>3</sup> (Zelizer 2005, 2011) by forging, maintaining, or cutting social relations in order to augment the economic value of biologicals. In this sense, the valuation of reproductive substances also depends on the manipulation of webs of relations in which substances are

embedded. Finally, I show that relational work on the living may encompass work on either donors, biologicals, or biodata sheets. I therefore argue that biobanks in IVF hospitals provide an opportunity to reassess the notion of “bio” entailed in biobanks.

## **Biobanks and reproductive medicine in India**

### ***Types of biobanks***

Similar to Mr. Singh’s sperm bank, most IVF hospitals in Delhi have been cryopreserving their patients’ and third party donors’ gametes and embryos since the late 1990s.<sup>4</sup> Although many hospitals still run and administer biobanks, the sector has undergone profound changes in recent years. Since 2010, the Indian Council of Medical Research (Government of India 2010) has advised the establishment of so-called ART [Assisted Reproductive Technologies] Banks to take over the storage of donated substances. In the draft bill, which still awaits debate in parliament, ART banks are conceptualized as independent biobanks, disconnected from hospitals: “An ART bank shall operate independently of any assisted reproductive technology clinic” (Government of India 2010, 20). ART Banks are supposed to be responsible for recruiting donors, accompanying them to hospitals where medical procedures take place, and matching them with recipients. In anticipation of legislative shifts, many doctors have outsourced tasks related to third party donors to ART banks although they still store their own patients’ gametes and embryos. Some clinicians, however, continue to run their own donor banks, sometimes formally administered by spouses or friends. Hence, there is a spectrum of spaces that store and deal with gametes and embryos in distinct ways, all of which can be termed biobanks. In this article, I focus on both hospitals and agencies in Delhi that store reproductive substances of commercial gamete donors and/or information related to them.

### ***Stored substances***

Biobanks’ services further vary according to the respective reproductive substances involved. In Delhi, donor semen is mainly prepared and stored in independent banks, like Mr. Singh’s, until hospitals order them for their clients. The donors are recruited through fieldstaff who visit colleges, universities, or other places where “suitable” donors supposedly study or work. When someone medically qualifies as a donor, their samples are collected, tested, stored, and retested in the bank before they are handed out to hospitals. Since semen is easily available and storable, it is relatively inexpensive and affordable for most recipients.

Donor oocytes, on the other hand, are expensive because of their scarcity, their short shelf-life, and the specialized medical work and pharmaceutical resources needed for their production (cf. Bergmann 2014, 132). Commercial egg donation is therefore only affordable for upper middle-class patients. Patients in need of

donor eggs in public hospitals usually rely on egg sharing or donations by relatives. During my fieldwork, donor egg cells used to be “harvested” from donors’ bodies in the hospital itself and immediately transferred to recipients’ bodies, as oocyte cryopreservation had not been introduced yet in India.<sup>5</sup> In cases where independent ART banks arrange egg donors for hospitals, the hospital still conducts all *medical* procedures. Thus, most banks only recruit donors and match them with recipients – hence, storing biodata rather than biologicals.

### **Doing and undoing relatedness**

As mentioned before, IVF biobanks are distinct from other biobanks in that they not only absorb biologicals into the bank but also dispense them, and, more importantly, restore them to a different social environment – that of the recipient. Restoring substances is complicated. If successful, it constitutes a process of “kinning,” which Signe Howell (2003, 465) has described as a process by which a “previously unconnected person is brought into a significant and permanent relationship that is expressed in a kin idiom”.<sup>6</sup> For IVF, the kinning of biological substances is coupled with processes of “de-kinning” (Howell 2006, 9) or “undoing relatedness” (Edwards 2014) in order to sever relations between donors and gametes and, by extension, to prevent relations between donors and recipients (cf. Högbäck 2016 for adoptions; Smietana 2017; Konrad 2005 for de-conceiving in terms of egg donation). By cutting connections while simultaneously facilitating others, biobanks enable the restoration of reproductive substances. This begs the question, however, why are these reconfigurations imperative in the first place? Why do biological substances need to emerge from biobanks in an altered form? Why is relational work necessary? The answer is connected to the fact that reproductive substances and their transactions are imbued with relational properties in a highly stratified societal context.

### ***Semiotic substances***

Moore and Schmidt (1999, 343) observe in sperm banks in the US that although reproductive substances are “disembodied [...] they are vividly personified.” Semen continues to carry meaning even after it is disconnected from the donor’s body. And it is not only that “semen is semiotic,” as Sahlins (2013, 88) puts it, but that reproductive substances in general “are not mere physiological substances of reproduction but meaningful social endowments of ancestral and affinal identities and potencies” (Sahlins 2013, 65).

In North India, semen is a particularly powerful relational substance. Read through predominant patrilineal norms, genealogical relations are created through the bond of blood, which binds male descendants into a lineage. This bond is transmitted through semen – a condensed and highly precious form of blood in South Asia (cf. Alter 1992; Parry 1994; Simpson 2004). Importantly,

discourses of blood and genes are often conflated and overlap with regard to semen in IVF hospitals in Delhi.<sup>7</sup> But no matter if it is framed in hematological or biogenetic rationales, semen transmits descent. As Pritha – a patient undergoing IVF – explained: “the descent line (*vans*) goes through the male. The family name should continue, and this is possible only through one’s own sperm.” This reflects a patrilineal understanding of kinship that many (though not all) of my interlocutors shared.

In contrast to semen donation, egg donation proved to be less troublesome for most recipients. “In eggs, nothing comes, like characteristics, genes,” Pritha explained. This is connected to dominant understandings of the reproductive process in North India, in which male and female contributions remain unequal:

The female (field) is inferior and more dispensable than the male (seed). It matters little if the field is provided by this or that woman; what is critical is the seed that determines social identity. The seed is the source of life, the field in turn merely nurtures that life (cf. Dube 1986, 1988; Patel 2007, 33; see Martin 1991 for the characterization of gametes through similar notions of activity and passivity in the US).

Yet, even if the male “seed” determines lineage affiliation, many women still contend that they actively add to the process of reproduction through carrying, nourishing, and giving birth to the child. They explained their equanimity towards egg donation not only with their partner’s input, but also with their own contribution through future substantial transactions via gestation, childbirth, or breastfeeding: “It [egg donation] doesn’t make a difference. The blood is my own. What is important is that I give birth to it,” Priyanka – another IVF patient – explained. Since they nourish the child in their womb for nine months, many patients considered the children they conceived through egg donation as their “own”: “It doesn’t matter, it stays in my womb (*god*) for nine months, blood (*khūn*) and bones (*hadḍī*) will be made from my food,” said Kanupriya. The nourishing blood that the mother provides in the womb substantially forms the child and turns it into her own offspring (cf. Bennett 1983; Böck and Rao 2000; Pande 2009; Vora 2013). Rather than genetic impact, relations are forged via substantial transfer over time.<sup>8</sup>

This section demonstrated that my interlocutors posed questions regarding the transmission of substantial qualities in particular or relatedness in general in manifold ways. Important for the argument here is that reproductive substances possess different kinds of relational properties, which gives them the power to transmit and connect (cf. Carsten 2004).

### ***Transformative transactions***

Apart from the relational qualities of substances themselves, the implications of transactions with outsiders are another important point of consideration for gamete recipients. Transactions in India have often been depicted as relationally

consequential – a dynamic that McKim Marriott has termed “transactional thinking in South Asian society”.<sup>9</sup> According to him, the circulation of substance-codes<sup>10</sup> in daily social life through interpersonal contact implies the simultaneous transformation of bodies and persons. Like “transactional thinking,” the transactions of gametes prove to be consequential as well. Nidhi – an IVF patient – underscored this connection when she told me about a conversation she had with one of her girlfriends in which both concurred that they would donate eggs to each other: “It is not an issue, we both eat from the same plate,” she reasoned, suggesting an equivalence between daily substantial transactions through food, on the one hand, and gamete transfer on the other.

Transactions constitute a predicament: while they are prerequisites for both daily interaction and biological reproduction, they entail the danger of inappropriateness and adulteration. Take, for example, marriage practices: whereas village exogamy, as prevalent in many parts of North India, requires the transcendence of familiar bounds in order to create affinal and reproductive relations, it is nevertheless supposed to happen in a controlled manner (paired with caste endogamy). Marriage advertisements aptly illustrate this point: by placing an advertisement, people reach out to unfamiliar realms. And yet, the detailed requirements of possible future spouses, in particular with regard to caste, education, and appearance, demonstrate the cautiousness with which transactions are approached. Due to this ambiguity, transactions often entail a vigilant guard over social boundaries. This is also the case in IVF hospitals, where the relational power of substances and the productive force of transactions carry the risk of inappropriate exchanges.

No matter whether framed in the language of genetics, in terms of transmittable qualities, or in idioms of transactional thinking, reproductive substances in Delhi are imbued with specific relational qualities and their transactions are consequential for parties to the exchange. The entrance of third-party substances into the reproductive process therefore raises urgent questions regarding the infringement of social boundaries. Yet substances *can* be circulated, provided it happens in a suitable manner.

### **In search of suitability**

It should come as no surprise that accepting gametes from third parties is a highly delicate experience for many IVF patients in Delhi. Most aspire for an own child from their own gametes, although what “one’s own” means is volatile (cf. Edwards and Strathern 2000): it changes over time and over the course of medical interventions. While at first, most interlocutors would state that the child “should be our own blood,” many changed their mind after failed IVF cycles so that children who eventually originated from gamete donation could also be redefined as “own.”

Although most patients are concerned about incorporating substances from outside their family circles and prefer intra-familial donors (Bharadwaj 2003), if this is not feasible, the search for a “suitable,” commercial donor begins. One

crucial prerequisite is the donor's health, which is medically assessed. Recipients, clinicians, and agents go, however, beyond assessing the "biological quality" (cf. Wahlberg 2008) of gametes. As many patients keep third-party donations secret, physical appearance is articulated as an important concern, usually foregrounding skin color (cf. Deomampo 2016). Many recipients also value the donor's education and religion. Sometimes, "community" or caste play a role, too. According to the "paradigm of similarity" that is dominant in most parts of the world (see Burghardt and Tote 2010 for Germany or Mamo 2005 for the USA), recipients usually request donors who resemble them as much as possible. This implies that "suitability" varies according to the receiving couple's social background as well as their understandings of what kinds of qualities are transmitted from donors to gametes.

When selecting gametes, recipients receive biodata sheets containing biological, medical, and socioeconomic features of potential commercial donors from clinicians or agents. The sheets vary in their precision and influence the amount of control recipients are able to exert. Usual markers include: age, weight, height, skin, hair, and eye color, marital status, education, occupation, income, and religion. While the hospitals I worked with provided receiving couples little information, some agencies let patients choose from elaborate catalogues that specify detailed donor characteristics and sometimes even include photographs. Information pertaining to donors is projected onto gametes, which are then valued accordingly. Hence, in contrast to many research biobanks, where it is mainly the biological quality of the material that matters (for exceptions see Landecker's (2000) discussion of the HeLa cell line), reproductive substances in IVF biobanks in Delhi are closely coupled with accompanying information noted down on biodata sheets. Similarly, Moore and Schmidt (1999, 338) describe in their study of semen banks' donor catalogues in the US how social differences "become inscribed in the sperm advertisements and, in the process, inscribed in the sperm itself. The semen becomes, for example, the African American man with a GPA of 3.2 with interests in sports and music." Biodata sheets entangle substance and person by animating past connections between biologicals and donors and projecting possible futures of imagined offspring (see Mamo 2005 for affinity-ties). Supplier, substance, and sheets – though separated and with distinct social lives – constantly reference each other and merge in synecdochal ways (cf. Hoeyer 2002; Landecker 2000, 64; Sunder Rajan 2006, 43).

### **Stratified supply**

The confluence of body, substance, and information promotes a highly stratified gamete market. There are few "premium donor" biobanks in India where affluent clients can choose from "elite" substances. The banks claim that they are able to recruit college students who do not donate out of need, but to "improve their pocket money" (see Wahlberg 2018, 116 for iPhone money).<sup>11</sup> One hospital in Mumbai, for example, advertised profiles from "typical" egg donors on its

website, most of whom are fair skinned, with a college degree, and including as illustrious figures as a “national sport player” or a “basketball state champion.” These detailed biodata sheets prove to be important assets. Similar to what Heather Paxon (2012) calls “unfinished commodities,” where products (artisanal cheese in her case) are never completely alienated from their producers, and where the commodity’s value is also derived from detailed stories about processes of production, the value of gametes may be enhanced through invoking the persona of the donor.

For the majority of IVF patients in India, however, premium donor banks are completely unaffordable. Most middle-class patients only have the financial means to pay for what an agent once designated as “C-class” donors, meaning donors with low socioeconomic backgrounds (cf. Deomampo 2016 for a similar classification). Biodata sheets of C-donors usually depict images of women in their mid-20s, who are married and already have children of their own. While they are either “housewives” or work as domestic helps, their husbands are farmers, clerks, plumbers, painters, drivers etc. And their educational status varies from “signature only” to “12th standard.” In short, most “C-class” donors are socially not compatible with the expectations of many middle-class IVF patients who are highly educated and work as professionals. Although their daily lives may intertwine at times, they usually do so in hierarchical ways (e.g. in the form of employee-employer relationships).

Therefore, the question arises of how transactions can still take place in a highly stratified and unequal context where a vigilant guard over social boundaries prevails? How can gametes be alienated from their donors in such a way that they become relatable entities for recipients? In the following, I describe the different forms of relational work on the living that biobanks employ to facilitate substantial transfers.

### **Relational work in biobanks**

Biobanks facilitate the transgression of social boundaries and the establishment of relations that could hardly be achieved in daily life. Reproductive substances change during their stay in biobanks, as this section illustrates, not only in terms of their biological development but also in terms of their social positioning. Departing from Zelizer’s (2005, 2011) notion of relational work, I depict various strategies employed in biobanks that reconfigure the living on multiple levels: from the selection of donors, to the manipulation of biological substances, to the negotiation of biodata sheets. Relational work separates reproductive substances from donors in order to morph them into relatable and transferable entities. The shift from intimate bodily substance to sterile product (cf. Knecht 2010, 172) simultaneously augments their economic value.

### ***Selection of donors***

One of the most obvious ways to influence the quality of stored gametes is the selection of “suitable” donors. Yet, since supply is quite limited, most agents and

doctors cannot be choosy, and their selection of donors is mainly based on medical grounds. This stands in contrast to gamete donation in other parts of the world, where donors are not only evaluated according to medical fitness but also according to, for instance, moral responsibility (Mohr 2018). During my own fieldwork, I observed the exclusion of oocyte donors from a hospital's donor program on something other than medical grounds only once: Because an agent had cheated a donor of her payment, which had been observed and reported by the hospital receptionist, the responsible clinician refused to further engage the agent.

### ***Spatial and temporal seclusion***

Once gametes are separated from the donor's body, they enter a phase of spatial and temporal seclusion in the embryology laboratory, one of the most restricted areas in IVF clinics. By entering a domain of limited access, reproductive substances are spatially disconnected from their donors. In addition, cryopreserved gametes undergo temporal isolation. The cryopreservation unit, where time is suspended and life "latent" (Radin 2017), creates another layer of distance to donors: gametes' relations become latent as well. The fact that connections loosen can be observed when couples, who cryopreserve their own embryos after IVF, stop paying for their preservation after a certain amount of time. To them, cryopreserved embryos cease to be potential relatives in need of care (cf. Roberts 2007 for Ecuador). In this sense, "ideas of shared substance are only ever one side of the story; connections are also broken through lack of attention" (Edwards and Strathern 2000, 157, for the UK). Lack of attention, as expressed in the suspension of payment, gives the hospital the right to use the stored embryos for other purposes. In cases of commercial gamete donation, these ruptures are intended, as "the cryopreserved disentanglement potentializes the material with new possible connections and meanings" (Hoeyer 2017, 207).

### ***Laboratory protocols***

Once in the laboratory, gametes undergo a transformation in form according to laboratory protocols: from a specific bodily and sexualized substance into a standardized biological unit. Egg cells, for example, are "cleaned" when conducting intracytoplasmic sperm injection (ICSI). Embryologists remove the surrounding cumulus cells before they inject a sperm cell. Semen is also "prepared." One step in this procedure is the separation of sperm and seminal fluid, called "washing" in laboratory parlance. Further, semen samples are quantified in terms of their volume, motility, and other characteristics. This process makes "semen meaningful as a reproductive fluid whose material specificities can be quantified, that is, semen is made knowledgeable as a product of laboratory work rather than male sexual lust" (Mohr 2014, 14). Finally, gametes are stored in petri dishes or vials marked with either numbers or the recipient's name – one more step in

obliterating the presence of donors. In this sense, gametes turn from a particular form (intimate substances connected to particular donors) to general matter (numbered and standardized entities in petri dishes or cryopreservation tanks) (cf. Turner 1964, 48). Later, they are incorporated in novel webs of relations when they are fertilized with the gametes of the recipients and transferred to their body.

### ***Bureaucratic procedures***

Apart from medical protocols, there are bureaucratic procedures that facilitate transactions. Informed consent forms, for example, allow gametes to circulate. By signing, donors relinquish any parental rights to the gametes provided: “I understand that I shall have no rights whatsoever on the resulting offspring and vice versa,” the consent forms for egg and sperm donors that were used in one hospital where I conducted fieldwork states. Biogenetic connections between donors and their gametes are cut through juridical procedures. The informed consent form of recipients, on the other hand, serves to establish relations to the substances transferred. Clauses that ascertain that future children will be recognized as legal offspring and heirs codify medico-legally, what might not be self-evident through the substance transfer.

### ***Policies of anonymity***

The disentanglement of gametes from their donors are further supported by state policy. The National Guidelines for Accreditation, Supervision and Regulation of ART Clinics in India (Government of India 2005) and the various versions of the Assisted Reproductive Technologies (Regulation) Bill prohibit the establishment of direct relationships between donors and recipients by prescribing that transactions in the clinic remain anonymous: “The identity of the recipient shall not be made known to the donor” (Government of India 2010, 25). Recipients are not supposed to meet donors, and donors are likewise forbidden to get to know recipients. The disclosure of the donor’s identity to recipients will even count as an “offence punishable under this Act” (Government of India 2010, 15), once the bill turns into law.

Although in hospitals much effort is taken to maintain anonymity, spatial layouts as well as temporal arrangements do not always support the shielding of donors from recipients (cf. Wahlberg 2018, 179 for China). Dr. Sanjita, for instance, once reprimanded an agent who accompanied egg donors to the clinic for behaving too conspicuously in the hospital. A few days earlier, the husband of a recipient had encountered the agent with some donors in the waiting-area of the operation theatre when he had to provide his semen sample for fertilization. He rightly assumed that one of the women would be the oocyte donor and approached Dr. Sanjita afterwards to complain about their “quality.” Yet, ideally, politically prescribed

anonymity as well as practical arrangements in the clinic are supposed to enable the decoupling of donors and recipients.

The emergence of ART Banks is yet another attempt of spatial separation to facilitate anonymity. Since egg donor agencies take over the matching process between donors and recipients and even conduct a few medical tests, donors only enter the hospitals for initial screening, monitoring during hormonal stimulation, and oocyte pick-up. In the case of sperm banks, the probability of an encounter between donors and recipients is even more reduced, since semen is collected in the bank and provided to hospitals through deliverymen.<sup>12</sup> Even within his bank, Mr. Singh makes sure that the employees who work in the field (i.e. people who are in contact with donors) are not in touch with the business office where people distribute samples to doctors and couples. “So that they don’t associate a face with a number,” he reasoned.<sup>13</sup>

All in all, hospitals and donor agencies employ complicated strategies of “knowledge-management” (Klotz 2014). The moral imperative to silence relations in India (see Strathern 1999 for the moral imperative to transparency in the UK) is facilitated by the right of donors to confidentiality and the absence of centralized registries. In some cases, however, anonymity remains partial like a “kaleidoscope, revealing and concealing different characteristics and configurations of the donor’s persona through carefully tailored narratives” (Émon 2017, 2), as I show in the next section.

### *Clinical rhetoric*

Apart from working on donors and gametes by way of selection and technical transformation, some clinicians and agents also work on biodata sheets to enable transactions. Most doctors do not openly discuss the donors’ socioeconomic backgrounds with their patients. One exception was Dr. Aishwa, who had started to work for a private hospital after returning from her training in Europe: “People are usually from a low socioeconomic class,” she would explain to her patients. “Why would upper class people take injections [for hormonal stimulation]? They [donors] all do it for money. I tell you the truth, this is the case everywhere in Delhi. But they are *not* from the streets.” What Dr. Aishwa implied, is that donors are poor but not destitute. She explained the socioeconomic position of donors to her patients by comparing them to social figures they are familiar with, such as domestic workers.

In contrast, the majority of doctors and agents try to disentangle the biological material from the donor’s persona by either withholding information or invoking suitability. Firstly, many hospitals, particularly low-cost hospitals, do not hand over detailed information but enact gametes as acultural and barely distinguishable material. Apart from physical appearance, basic demographic information, and medical history, no other characteristics of donors are revealed. As one embryologist remarked: “We do not provide such kind of information. In fact, it does not

matter, gametes don't have any caste or religion." While for some clinicians this information did not matter, others admitted that they do not provide this data because "we cannot match this also, that is the reason." For recipients, gametes thus come to appear as a mass of homogenous entities stripped of their social biographies.

A second strategy employed by hospitals are narratives of suitability, no matter whether this is actually the case. Substances are turned into relatable entities by embellishing their biodata sheets. To give but one example: when an upper middle-class couple requested a donor with good educational background from Dr. Isha, who was employed by a private hospital, she assured them that she would take care of finding a suitable donor. However, as soon as the couple had left the room, she started complaining: "How can I get them an educated donor? Patients always want engineers or doctors, but these people just don't donate." Therefore, the box on the donor sheet denoting education was usually marked as soon as donors stated that they had attended school for a couple of years. In these cases, the value of gametes is augmented through work on the accompanying biodata sheets. While this might give the impression that doctors do not fully inform patients or dupe them, they themselves often argued that these characteristics make no difference. "These people [donors] sometimes don't get the right opportunity also," Dr. Isha explained. "It has nothing to do with their intelligence." Doctors further made use of "dynamic models of kinship" (Howell 2003, 467) and stressed that donor children anyways resemble their social parents after a few years because of their upbringing. It therefore would not matter whether the matches seem suitable to recipients or not.<sup>14</sup>

What both relational strategies – the representation of reproductive substances as homogenous entities or suitable matches – have in common is their capability to disentangle gametes from their donors. Since gametes' social biographies are either silenced or altered, the transgression of social boundaries does not become apparent. Donor gametes can therefore be accepted by recipients and incorporated into novel webs of relations.<sup>15</sup>

## Discussion

The selection of donors, the laboratory as a secluded space, medical protocols, bureaucratic procedures, policies of anonymity, and clinicians' rhetorical strategies in biobanks and hospitals in India all contribute to the realization of transactions that cross social fault lines. Relational work of various modes and on different levels enables the detachment of gametes from their donors and, later, their integration into recipients' bodies, lives, and social environments. By establishing new connections while cutting others, biobanks achieve a reconfiguration of biologicals: from intimate substances closely connected to specific donors, to standardized and commercialized products and, therefore, relatable entities. In short, biobanks (*re*) store reproductive substances. Yet, it is important to note that although biobanks

make the transcendence of social boundaries possible, they simultaneously “freeze existing norms” (Hoeyer 2017, 211). In contrast to other geographical contexts, where reproductive technologies question patriarchal and heteronormative understandings of reproduction, relational work in biobanks in India helps to reinforce not only conservative forms of reproduction but also social inequalities. One could thus argue that apart from restoring biologicals relational work also restores a hierarchical social order.

Furthermore, as relational work can be performed on suppliers, substances, or sheets, it invites reflections about notions of “the living” or “the biological” more generally: for example, when clinicians alter biodata sheets, they simultaneously transform biological substances as perceived by recipients. The fact that donors, gametes, and biodata sheets are entangled in complicated ways illustrates that the biological substance itself is only one part of a complex assemblage that makes up the living stored in biobanks. Particularly in social settings where molecular biology does *not* provide “the primary analytic perspective on the essence of life” (Franklin 2004, 1383), gametes’ social biographies and their embeddedness within web of relations – their social biocapital, so to say – comes to matter. The ways in which my interlocutors in Delhi value and work on reproductive substances suggests that the living “is a cultural and historical product, and one which may well look different in the varied locations in which we work” (Marsland and Prince 2012, 462). Rebecca Marsland and Ruth Prince borrow Fassin’s (2009) notion of “life as such”, meaning “life as lived through both a body and a society,” to point to the diversity of meanings that the living embodies (cf. Merleau-Ponty 2017). As this article demonstrates, “life as such” in IVF biobanks extends in space and time beyond the walls of the laboratory but can nevertheless be addressed through relational work – be it on suppliers, substances, or sheets. In this sense, biobanks shed light on the living in its diverse forms and invite us to analyze “bio” in more fragmented terms.

Finally, returning to Mr. Singh’s introductory remark: in this article I have shown how biobanks not only act as repositories but also work on biological substances, thereby augmenting their social and economic value. Biobanks technically generate and process biological samples for infertility management while simultaneously reconfiguring them from intimate entities provided by specific donors to standardized and, most importantly, suitable substances. More than mere storage places, biobanks serve as spaces of detachment and attachment, of separation and integration that aid in altering and resituating bodily material through relational work. Biobanks, in short, work as relational spaces.

## Notes

1. All names used in this article are pseudonyms. Some of the direct quotations are not verbatim, as they are derived from notes typed out after interviews.
2. In this article, I focus on recipients. For a fascinating account of different experiences of sperm and egg donors, see Almeling 2011.

3. I intentionally depart from the notion of labor here. Zelizer defines relational work as a “process of differentiating meaningful social relations” (2005, 28). Although relational work in the laboratory is more encompassing, I find Zelizer’s notion useful because of its focus on transactions as well as the blending of economic activity and intimacy (2005, 22).
4. Most of them used to organize commercial third-party donations on their own or with the help of intermediaries, so-called “agents”.
5. This situation has changed, and several hospitals have started to offer oocyte cryopreservation.
6. In contrast to transnational adoption (cf. Howell 2003), gamete transactions are *not* intersubjective, two-dimensional processes.
7. See Porqueres i Gené and Wilgaux (2009, 126) for equivalences between the treatment of blood and genes in discourses surrounding incest prohibition.
8. Yet, it is also important to note that some interlocutors highlighted the profound implications of donor oocytes and framed their unease in biogenetic terms.
9. Marriott confines his analysis to Hindu transactions and relies on fieldwork data from villages in Uttar Pradesh, North India.
10. Marriott explains substance-codes in the following way: “natural matter, actions, words and thoughts are all substances and all imbued with relational properties” (cf. Carsten 2004; Marriott 1990, 2).
11. This, however, constitutes a controversial issue as most students are unmarried and without children, meaning that there is no proof of their own fertility. Furthermore, many doctors in Delhi understand the procedures involved to be unsuitable for sexually inactive women. An agent explained that while she employs educated, unmarried donors, “they cannot be virgins, because if we do the [vaginal ultrasound] scan and the hymen tears, I don’t want that on my head” (cf. Gupta 2011, 171).
12. Swanson (2014, 207) reports that doctors in the US also prevented accidental meetings between donors and recipients. They relied on the delivery of sperm by taxi or established separate entrances to their hospitals.
13. Biobanks, on the other hand, also have the power to connect: they may provide recipients with biodata and photographs or they may even allow meetings between both parties. Yet, agents in Delhi all emphasized that they do not encourage long-term relationships between donors and recipients.
14. Just to be sure, I do not want to engage in moral judgments about the validity of these arguments; rather, I’m interested in how they work and what they enable as relational tools.
15. For this reason, some patients consciously choose not to know anything about their donors. It enabled them to forget unwanted links and accept the resulting child as their own. Some of the recipients who cannot (or do not choose) to afford premium donors only inquire about the donors’ medical histories or even ask clinicians to make a choice for them.

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