Introduction

The body has become a goldmine of usable parts (Jones 2016). In the United States, a woman may earn $20,000 to $35,000 as a surrogate; a sperm provider will receive in the range of $35 to $200 for his gametes, while egg donation ranges between $5,000 and $10,000 (Jones 2016). Other bodily parts are usable as well: hair can be sold (price depends on color, thickness, length, and ethnicity of donor, but generally ranges between $100 and $4,000 at Hairwork.com); blood plasma obtains $20 to $60 per donation (Morgan 2016); breast milk grants the producer between $300 and $1,200 for a month's supply when disseminated through the organization onlythebreast.com;[1] stool can now be provided to the organization OpenBiome, which redistributes it to help treat individuals suffering from gastrointestinal distress (annual compensation of approximately $13,000) (Alter 2016; Morgan 2016); whole bodies can temporarily be donated to NASA, who will pay $18,000 if the provider is willing to lie in bed for 70 days (Morgan 2016), while a single cadaver may generate between $110,000 and $222,000 in potential fees and revenue (Parry 2007: 1138). What may be considered bodily waste, usable parts, vacant bodies, or simply extractable material has contributed to an emerging relationship between the body and commerce, fueled by scientific and technological progress and developments.

This book is about the ways that pregnant women's urine, placentas, and oocytes become exchangeable. Women's reproductive donations gain (new) meaning throughout their extraction, industrialization, commodification, and consumption processes. I begin the book by outlining and developing a feminist cultural analytical approach to reproductive donations, and I conclude it by extending the analyses of reproductive donations to feminist bioethics and cultural politics. What, I ask, happens to our understanding of urine,

oocytes, and placentas when they circulate and become exchangeable? For example, how does a temporary reproductive organ such as the placenta move from being understood as waste, biohazard material, or baby's first home to turn up again as a central ingredient in a smoothie, as medicine, and in anti-aging, whitening cream? What is the trajectory that enables pregnant women's urine, commonly framed as waste (best to be avoided, forgotten, and promptly flushed), to be donated and turned into fertility hormones and pregnancy kits? Similarly, how do oocytes through communication, clinical, and cultural practices move from being inside one woman to being extracted, cryopreserved, fertilized, and seen as "naturally" belonging to another? And what are the moral limits involved that would dictate what reproductive matter or fluids can move into the global marketplace?

Throughout the book, the idea of "global fluids" works as an analytical device. It brings to the foreground how reproductive matter, in more ways than one, has obtained global and liquid qualities. Notably, while oocytes and urine are fluids to some extent, the placenta is an organ. Attached to the lining of the womb, the placenta manages nutrients to the baby and serves as a waste disposer of sorts. So the concept of global fluids does not refer only to the liquid qualities of a particular reproductive donation. More importantly, it makes reference to the fact that reproductive donations have become liquid and globalized, along with cultural values, laws, exchange systems, and ethics. Hence, I stress the need to understand biological matter as material flows rather than merely physical entities (Hoeyer 2013), and, in a similar way as Morse (1990: 194), I note that liquidity refers to "the exchange of values between different ontological levels and otherwise incommensurable facets of life." From an economic point of view, women's reproductive donations may also be liquid in the sense that they are easy to exchange and convert into profit. So the notions of "global" and "fluids" become metaphors for the ways that reproductive matter, cultural values, laws, money, and ethics travel and move across national and cultural borders and imaginaries, situating the idea of "global" as a "discursive condition" and a cultural imaginary more than as an actual reality (Franklin et al. 2000: 4).

Global Fluids is embedded in feminist, sociological, and anthropological scholarship, and the scholarship of science and technology studies, and so extends the existing scholarship on reproductive donations into new empirical domains (Almeling 2011; Dickenson 2009; Inhorn 2015; Kroløkke 2009; Mamo 2007; Melhuus 2012;

Roberts 2012; Scheper-Hughes 2001, 2005; Sharp 2000; Thompson 2005). While feminist scholarship has already placed gender in the foreground in the analyses of reproductive donations (Almeling 2011; Daniels 2006; Konrad 2005, 2000; Nahman 2011, 2013; Roberts 2012), little research has centered on the work that goes into urine or placenta donation. In fact, feminist cultural analyses of urine donation are missing entirely, while analyses of placenta donations are rare (exceptions include Passariello 1994; Kroløkke et al. 2016; Dickinson et al. 2016). Similarly, while feminist scholars have tended to focus on the experiences of patients, and to a lesser extent on gamete providers and surrogates, they still need to turn their analyses to the emergent markets in in vitro fertilization (IVF) instruments, reagents, technologies, and cryopreservation media, for example. The scholarly attention that some body parts or some reproductive entities and relations are given is not only a facet of their reproductive role but is also intertwined with the cultural values in which reproductive parts and social relations are embedded, including the fact that while some body parts remain inside the body (such as oocytes), other parts are expelled from it and more readily enter into a waste and exchange economy (such as urine and placentas).

Throughout the book I discuss the ways that reproduction is entangled with neoliberal ideology. A central argument is the notion that neoliberal discourses not only facilitate that reproductive donations are moved from the arena of reproductive waste to reproductive value, but they also make this move appear legitimate, even natural. I position neoliberalism as a "set of dispersed discourses, positions and practices inflected by the specificity of the different contexts in which it emerges" (Walkerdine and Bansel 2010: 492). Within neoliberal ideology, individuals are cast as responsible for their fertility and for making behavioral choices that maximize their chances of pregnancy and upward mobility (Kroløkke and Pant 2012). Under this framework, reproductive matter is turned into particular types of commodities and reproduction becomes privatized, available for investment and speculation. Because neoliberal discourses put a premium on the construction of active, responsible, and positive (reproductive) actors (Newman et al. 2007), the providers of these reproductive donations—whether it be oocyte, urine, or placenta providers—are most often positioned as active and rational choice-making individuals. As noted by Rose (1999), neoliberal ideology produces individuals who become entrepreneurs of themselves, capable of transforming their lives to optimize and enhance their life circumstances.

In the arena of reproductive donations, neoliberal discourses are frequently supplemented with the more sanctioned discourse of the gift (Gunnarson and Svenaeus 2012; Kroløkke 2014). This is readily seen when the money that egg providers receive is positioned as "compensation" rather than "payment." It is taken out of the monetary realm and narrated instead as altruism combined with a desire to give someone else the gift of motherhood (Almeling 2011; Parry 2007; Pollock 2003; Roberts 2012). To Parry (2007: 1140), the use of the compensation discourse is a cover-up for a "collective squeamishness" associated with money changing hands between different and differently positioned reproductive actors. The way that the preferred scheme of neoliberal gifting operates is also seen in the choice to position the women and men who participate in this emergent market rhetorically as "donors" rather than as "workers," "sellers," or, the term used throughout this book, "providers." Clearly when gift-giving becomes the preferred metaphor, it has the effect of positioning reproductive provider bodies as legitimately constructed for someone else's desire and needs (Pollock 2003; Raymond 1993). Because altruism draws upon cultural notions of dignity and integrity, reproduction gets repositioned in the private, intimate sphere of an individual woman who intends to become a mother and individual women who desire to help other women through providing them with their eggs or urine, rather than larger economic and resource market–like forces. This is reinstated in the clinical setting when the fertilized provider egg, during the embryo implantation procedure, is positioned as having no ties to the woman it came from but instead carries the recipient woman's name on the petri dish. It is similarly present in the latest Swedish and Danish debates on uterine transplants, in which a known living donor (frequently the woman's mother, a sibling, or a friend) donates her uterus to help a known recipient (daughter, sister, or friend) experience pregnancy and birth (Kroløkke and Nebeling 2017). In the latter case, a complicated transplant procedure is positioned as a legitimate donation (unlike a commercial surrogacy arrangement), granting the recipient woman her "natural" and "legitimate" desire not only for a child but also the experience involved in pregnancy and birth, making the uterus a shared object of desire, effectively turning the vacant uterus into an exchangeable entity and reinstating the idea that birthing is a prerequisite of motherhood (Kroløkke and Nebeling 2017).

In this book I view the reproductive body as a resource within an emergent and globalized tissue economy that seeks to optimize the

reproductive body's potential (Gunnarson and Svenaeus 2012; Rose 2007; Waldby and Mitchell 2006). To Rose, technological developments are not only "merely a triumph of surgical technique" but should also be seen within concerted efforts that are "oriented towards the goal of optimization" (Rose 2007: 17). Rose (2007) notes that optimization has a moral imperative. This is readily seen, for example, in cases of women who electively choose to freeze their eggs and take on the position of the responsible reproductive citizen, acting upon anticipations associated with their potential future, (failed) fertility (Carroll and Kroløkke 2017; van de Wiel 2015; Waldby 2014). It is similarly the case when pregnant women's urine gains new value through industrial (maximization) processes or when animal placentas are collected by the Danish pig farmers, placed into plastic bags, rushed to the freezers, picked up in company vans for further processing, and sent to the Asian pharmaceutical and cosmetics industry, constituting new ways for the Danish pig farmers to turn reproductive "waste" into profits.

Reproductive donations are increasingly entangled with a transnational market in reproduction. This is evident in chapter 3, for example, when I turn to the European exchanges in oocytes. The oocyte economy is increasingly predicated on a mix of recipients who are willing to travel transnationally for treatment, egg providers who are similarly willing to travel to provide clinics (and other women) with their genetic material, and vitrification technologies sophisticated enough to enable oocytes to be stored and shipped transnationally. In this manner, recipients, providers, and reproductive matter are on the move. As far as patients or recipients are concerned, Shenfield et al. (2010) point to a minimum of twenty-four to thirty thousand cycles of cross-border fertility treatments that could be taking place each year throughout Europe, involving as many as eleven thousand to fourteen thousand patients. While research within the social sciences has tended to prioritize the recipient (couples), much less is known about women who travel transnationally to provide other women with their oocytes. Nevertheless, agencies such as Global Egg Donors (United States) and Traveling Donors (South Africa) specialize in "global donors" (Kroløkke 2016a, 2015). Similarly, only few scholars have centered the multiple relations that unfold when vitrified eggs travel across borders (exceptions include Nahman 2013). In these transnational encounters, oocytes gain potential and value in the narratives of recipients, clinicians, and providers alike (Kroløkke 2016a, 2015).

Reproductive donations such as urine and placenta are similarly vital ingredients in the emergent international pharmaceutical and cosmetics industry. With an estimated $1.5 billion in the United States alone, the IVF-related pharmaceutical industry is big business. In the specific case of fertility hormones, women's urine is used as an ingredient in the development of products such as Pregnyl and Menopur, developed by large international pharmaceutical companies and sold to women worldwide. Considered a natural protein hormone, Pregnyl is administered, for example, in IVF treatments (including to women going through IVF, as well as to egg providers, of course) and it is frequently known as the trigger shot used to bring on ovulation during IVF. Additionally, male athletes can use Pregnyl as a testosterone booster, while there are a few reports of it reportedly having been prescribed by medical doctors as a slimming drug.[2] In comparison, human and animal placentas enter the European as well as Asian pharmaceutical and cosmetics industries. For example, Japan Bio Products has more than forty years of experience using human and animal placental extract in the development of pharmaceutical and cosmetics products, selling its products throughout Asia. Founded in Japan, the company is now situated in Taiwan, Korea, China, Hong Kong, Vietnam, the United States, and Switzerland.[3]

Potentiality is a prerequisite in the circulation of reproductive waste. As a concept, it refers to the personal, commercial, and/or biomedical benefits that, in this case, reproductive donations hold. According to Taussig et al., potentiality situates bodily matter as plastic—capable of being transmuted "into something completely different" (Taussig et al. 2013: S4). Rhetorically framed as "power," "potens," and "force," the concept of potentiality suggests that biological matter is adaptable and open to human modification (Taussig et al. 2013: S4). In the case of a reproductive organ, such as the human placenta, it moves from being a "life generator" and "protector" to having no future potential—being scrutinized for its appearance and transferred following the afterbirth for further testing or to the garbage bin. However, the placenta obtains new potentiality as a postpartum preventative measure, energizer, and whitening or anti-aging lotion, through human and industrial modification. Similarly, women's urine moves from having no potential or force to becoming a valuable ingredient in the development of fertility drugs, through industrial and commercial undertakings. Even the egg provider's genetic material is frequently positioned as "wasted" matter—not used by the provider herself and thus open for being

entered into a "gifting" economy, in which the provider engages in the altruistic act of helping someone else achieve motherhood.

Feminist and consumer study scholars add important theoretical frameworks to critically understand the workings of potentiality. For example, Morgan (2013) points out how potentiality is gendered and embedded in moral reasoning. In the specific case of abortion debates in the United States, she argues that the choice to view the developing fetus in its early stages as a potential future citizen or human being paradoxically takes place "at the expense of the potential for pregnant women to exercise their own interpretations of liberty and choice" (Morgan 2013: S17). Moreover, the ways in which female bodily emissions, such as menstruation, are framed as sources of impurity or bodily waste—fluids with no potential—is predicated on a gendered hierarchy (Martin 2001; Shail 2007). Similarly, the interplay between the inside and the outside of the body is another type of gendered ordering, in which women's reproductive emissions (such as menstruation, placentas, and breast milk) get de- and revalued (Douglas [1966] 1984). This is in sharp contrast to men's bodily emissions, such as Danish sperm, which have readily entered the global bioeconomy as a valuable export commodity (Kroløkke 2009; Martin 1991).

This book is built upon an interdisciplinary and theoretical mix of feminist, sociological, anthropological, and science and technology scholarship theorizing the ways that women's reproductive donations, exemplified in the three case studies of eggs, urine, and placentas, gain new value and take on new biographies. The choice to center eggs, urine, and placentas is done to show how different parts of women's reproductive bodies are differently mobilized. Obviously, urine, eggs, and placentas are all fluids or reproductive matter derived from women's reproductive labor, yet the ways in which they circulate differ tremendously. Instead of acting as representative categories, however, women's reproductive fluids serve as "indicative instances" or "orienteering devices" (Franklin et al. 2000: 11) that open up a more general discussion of the gendering of the contemporary repro-economy. While I return to the theoretical framework, including a feminist cultural analytical perspective in chapter 1 and the feminist cultural politics on reproductive donations in my conclusion, I now briefly touch upon the methodological approaches undertaken, including my use of the concept of *assemblage ethnography,* in order to define the work that goes into this book.

Assemblage Ethnography: Analytical and Empirical Tracking Strategies

In *Global Fluids* I develop three case studies and combine a diverse set of empirical data. I suggest the term *assemblage ethnography* to help frame the analytical and empirical methodologies that may go into this feminist cultural analytical research.[4] In my use of the term, it embraces the use of diverse empirical material, from legal and ethical guidelines, governmental debates, interview transcripts, and ethnographic fieldwork on various sites to popular media accounts, literary texts, health campaigns, advertisements, online discussion groups, and expert interviews. As such, and as it is used in this book, assemblage ethnography bears a resemblance to the concept of multi-sited ethnography developed by Marcus (1999). The ambition to use a new methodological vocabulary, however, is similar to Roberts's (2015) coining of bio-ethnography as a way to capture her biological and ethnographic data. Whereas feminist cultural analysis historically has relied upon a wealth of methods derived from the social sciences as well as the humanities, the choice to center the assemblage concept, in this case, highlights ties to queer studies, sociological and anthropological work, as well as the diverse empirical material that goes into *Global Fluids*.

In my use of the term, assemblage ethnography suggests an analytical as well as an empirical tracking strategy. Analytically, assemblage thinking has gained currency in queer and literary studies (Puar 2007), as well as in sociological and anthropological work (Ong and Collier 2005 Marcus and Saka 2006; Rose 2007). It has become a framework for conceptualizing "shifting relations and emergent conditions of spatially distributed objects of study" (Marcus and Saka 2006: 106). For example, Ong and Collier (2005) use the notion of assemblage to critically examine how globalization and neoliberalism come together along lines of gender, sexuality, and neocolonialism, whereas Puar (2007) employs assemblage thinking to show how nationality, sexuality, gender, ethnicity, and class entangle. Within the realm of feminist and queer scholarship on reproduction, Nebeling et al. (2016) use the concept to show how affects and discourses on surrogacy in Norwegian media debates mix to reinstate the Norwegian nation-state as exceptional and superior. Similarly, Kroløkke (2016b) illustrates how "IVF holidays" in Barbados are assembled through affects of hope and neocolonial fantasies of the tropical island. Jointly, these scholars note that assemblage thinking is best understood as "an evocation of emergence and het-

erogeneity" (Marcus and Saka 2006: 106), or perhaps even as a verb (Holliday et al. 2015).

So what is added in taking an assemblage empirical approach to the reproductive donations of eggs, urine, and placentas? First, assemblage thinking has primarily been used either as an overall theoretical frame or as an analytical tool.[5] To prioritize assemblage thinking as an analytical as well as an empirical tracking device means recognizing the multiple and heterogeneous ways that reproductive donations come to be enacted in discursive, affective, technological, and situated practices, as well as how they frequently entangle. It involves understanding the making of waste and value as dynamic and relational processes. Lury captures this when she notes that assemblages are both spaces to be mapped as well as temporal moments—they are "spatio-temporalized" (Lury 2011: 75). Akin to this, Hawkins (2011) shows how both material and discursive entanglements, in the specific case of bottled water, come to matter in different assemblages—from the branding and selling of bottled water to campaigns involving the recycling of bottles and the decision to not use bottles. While the material presence of the bottle in Hawkins's (2011) analysis is placed in the foreground, the different assemblages are distinctly political, in the sense that they speak to questions of practice and the role of the discursive material within it. As an analytical and methodological device, assemblages illustrate the ways that people, things, technologies, media, and texts interrelate (Bennett and Healy 2009).

Practically, assemblage ethnography in this book involves the collection of a diverse set of empirical material as well as the examination of different sites of study. It includes work undertaken during a five-year period from 2011 to 2016, ranging from interviews with different reproductive actors—such as patients traveling from Denmark to Spain for egg donation; clinical directors in Denmark, the United States, and Spain; international fertility clinic coordinators in Spain; marketing CEOs of pharmaceutical and cosmetics companies in Japan and the Netherlands—to field observations undertaken at select fertility clinics, along with an archive of egg-provider stories and different documents in context (marketing material, webpages, legal briefs, financial statements, online urine provider stories and images, for example). Whereas interviewing and field observations are well-suited for getting in-depth knowledge about experiences and concerns, as well as an understanding of the storytelling that takes place in social interactions (whether with donors, clinicians, lawmakers, or ethicists), documents in context, such as legal briefs

or clinical webpages, add an important piece to the overall understanding of the cultural context, the practices and the communication that take place among key stakeholders, including the ways in which donors, destinations, or bodily fluids become constructed as (un)desirable.

In each case study, I unfold how a particular reproductive fluid comes into existence in an assemblage of images, commercials, texts, field observations, interviews, photos, and public and ethical debates. At times, the selection of empirical material is characterized by what Thompson calls "an excess of data" (Thompson 2013: 12). This is notably the case with the chapter on oocytes (chapter 3), in which, in an environment of fluctuating donation laws, changing yet always heated ethical debates, different compensation practices, emergent clinics, and the increasing normalization of freezing technologies, I had to prioritize certain kinds of sites, reproductive actors, and documents. In contrast, a very different assemblage emerges from the case studies on urine (chapter 2) and placentas (chapter 4). In these two cases, hesitant gatekeepers and language barriers (Dutch and Japanese) are combined with some, albeit not an overwhelming amount of, national debates. In combination, access to urine and placenta sites and stories was much more difficult and cumbersome. Consequently, each case chapter will reveal how a reproductive donation, in a very specific localized context and within a very specific set of empirical data, comes to matter and at times transfers into a global icon or traverses national borders.

While the choice to center urine, eggs, and placentas is not done with the specific aim of theorizing the ways that these fluids or matter come together, nor is the collection of diverse empirical work used to validate particular research findings. Quite to the contrary, I wish to illustrate how global fluids circulate and take on different meanings for the different reproductive actors involved, while unfolding in different cultural contexts. As noted by Thompson, in her use of "triage" as a methodological tool, urgency is a pivotal marker used to select and foreground certain types of data (Thompson 2013: 12). *Global Fluids* builds upon this notion of urgency in turning to key international sites yet notably prioritizing European sites and stories. According to Lie and Lykke (2017), turning empirically to European and non-English-speaking geographical areas enables different issues and questions to come to the fore. Consequently, while the United Kingdom, the United States, and Japan are interesting as far as placenta consumption and egg freezing is concerned, I rely more heavily on empirical material from Denmark, Spain, and the

Netherlands to illustrate the ways that oocytes, placentas, and urine flow. A brief introduction to these sites and their importance is, accordingly, in order.

Briefly, Denmark is an especially interesting case study. A fertility destination for single and lesbian women, Denmark is additionally a point of departure for intending families in need of oocytes or surrogacy (Adrian and Kroløkke 2018) as well as a vital exporter of reproductive tissue such as bull sperm (reappearing as Viking genetics) and porcine placentas (now staged as "organic Danish pigs") to the Asian agricultural, pharmaceutical, and cosmetics industry. Of particular importance in the Danish IVF assemblage is the law on assisted reproduction, which permits anonymous and known sperm donation to single women as well as lesbian couples. IVF to women older than forty-five years are banned, while a maximum oocyte freezing period of five years has made social freezing difficult at best. In combination, the Danish law has effectively led to an outflow of infertile women and couples to other European countries, notably Spain. While the Danish compensation for oocytes has changed dramatically in the recent years, during the research period of 2011–2016, compensation was low (ranging between eighty and three hundred euros), resulting in a significant shortage of oocyte providers.

The Danish version of the welfare state is key to understanding contemporary Danish biopolitics on assisted reproductive technologies. Not only is reproduction and IVF state sanctioned, the making of children is also encouraged and seen as a state matter, and as essential in the continuation of the Danish welfare state. This understanding has resulted in generous family leave policies as well as free access to medically assisted reproduction to women who do not already have children (and are under forty years of age at the point of referral) or to lesbian and heterosexual couples who do not already have one joint child. Once the child is born, the Danish state grants all parents child support, and children have access to free public education, healthcare, and vaccinations, while daycare centers are, in the case of lower-income or single parents, made available at a reduced price. To Melhuus (2012), the Nordic welfare states entangle with Lutheran principles on equality and welfare centering what has come to be known as "family values." Meanwhile, not all ways of becoming a family or all types of families are state sanctioned or viewed as morally just (Melhuus 2012). In the Danish version of the welfare state, this is evident when the desire to have at least one joint child (as in the case of the aforementioned couples receiving

free IVF) is naturalized as at the core of the Danish nuclear family. It is similarly present in the contemporary Danish debates potentially granting child support to a maximum of three children. Here, it simultaneously becomes a way of managing what is seen as the immigrant population's "uncontrolled fertility." Thus, the Danish biopolitics on reproduction advances the making of not only children but also particular types of (Danish) families and parents.

While Denmark has established itself as a European hub for anonymous and known sperm donation, during the 2011–16 period, women over the age of forty-five (who in the Danish context could not legally receive IVF) as well as women (and couples) in need of oocyte donation (and no longer willing or able to remain on the Danish waiting lists) traveled out of Denmark to other European locales. In this context, Spain emerged as a popular reproductive hub. The Spanish clinics have successfully branded themselves as quality clinics characterized by high success rates, a multilingual group of fertility doctors (frequently matching the international patients with a similar-language doctor), customer-oriented coordinators, well-developed clinical websites, relations with select Danish clinics along with the availability of a wide range of oocyte providers (due to the compensation of approximately one thousand euros), and an ability (as well as requirement) to match phenotypes (race, eye, and hair color in particular) of the providers with that of the recipients. Orobitg and Salazar (2005) locate the Spanish success story within a liberal law and a history of noninterventionist policies, turning reproduction and the making of families into a private affair. Consequently, egg donation is legal and all donations are anonymous, donations must be carried out in authorized centers, providers are compensated, and clinics are required to match the phenotypes of recipients with those of the providers. Similarly, in an ethnographic study of German women traveling to Spain and the Czech Republic for egg donation, Bergmann notes how the entanglements of an existing tourism infrastructure, international airports, and business amenities have turned cities like Barcelona and Prague into "global cities" of reproduction (Bergmann 2011: 601).

Meanwhile, the donation of urine has a long history of being organized and undertaken in the Netherlands. The Dutch story is, in several ways, unique. In the Netherlands, pharmaceutical companies had yet to be created during the early 1920s, and the development of the first pharmaceutical company emerged out of the joint efforts of Ernst Laqueur (head of the leading Dutch research group in endocrinology) and Saal van Zwanenberg (owner of a slaughter-

house located in Oss, the Netherlands) (Oudshoorn 1994). While van Zwanenberg wanted to manage organic waste, Laqueur sought to secure a steady supply of research material (Oudshoorn 1994). As a result of this collaboration, the pharmaceutical company Organon Limited Company was founded in 1923 (Oudshoorn 1994). While its first product was insulin, Organon began to produce estrogen in the 1930s. When German scientists discovered that pregnant women's urine was high in hormones, the production of estrogen became entangled during this time period with this new raw material. Consequently, Organon, along with other European pharmaceutical companies, extended their relations to gynecologists who could acquire women's urine during their prenatal visits (Oudshoorn 1994). Later in the 1930s when these European scientists discovered that pregnant mares could provide an even larger amount of hormone-rich urine, farmers became pivotal to the production of sex hormones. In the case of the Netherlands, however, the use of pregnant women's urine continued and is now organized and managed through the Dutch organization Moeders voor Moeders (Mothers for Mothers). In this manner, the Dutch story reveals—as does the European story on the pharmaceutical development of sex hormones, and as Oudshoorn (1994) shows in her history of the development of sex hormones—intimate and shifting entanglements among scientific communities (research labs), businesses (slaughterhouse and farmers), and medical entities (gynecologists).

Denmark, Spain, and the Netherlands have their own distinct nationalized stories and legislation enabling the development of particular reproductive pathways in and out of these three countries (Adrian and Kroløkke 2018). Nevertheless, within the European Union, member states must also adhere to the Convention on Human Rights and Biomedicine. According to the explanatory report to this treatise, the human body and its parts must not be bought or sold (Council of Europe 1997: § 132).[6] The convention does not inhibit providers (such as oocyte providers) in receiving compensation, however, as long as it does not "give rise to financial gain for the person from whom they have been removed or for a third party, whether an individual or a corporate entity such as, for example, a hospital" (Council of Europe 1997: § 132). Meanwhile, the explanatory report makes a clear distinction between matter which is naturally expelled from the body which is made exempt: "The provision does not refer to such products as hair and nails, which are discarded tissues, and the sale of which is not an affront to human dignity" (Council of Europe 1997: §133). Whereas women's

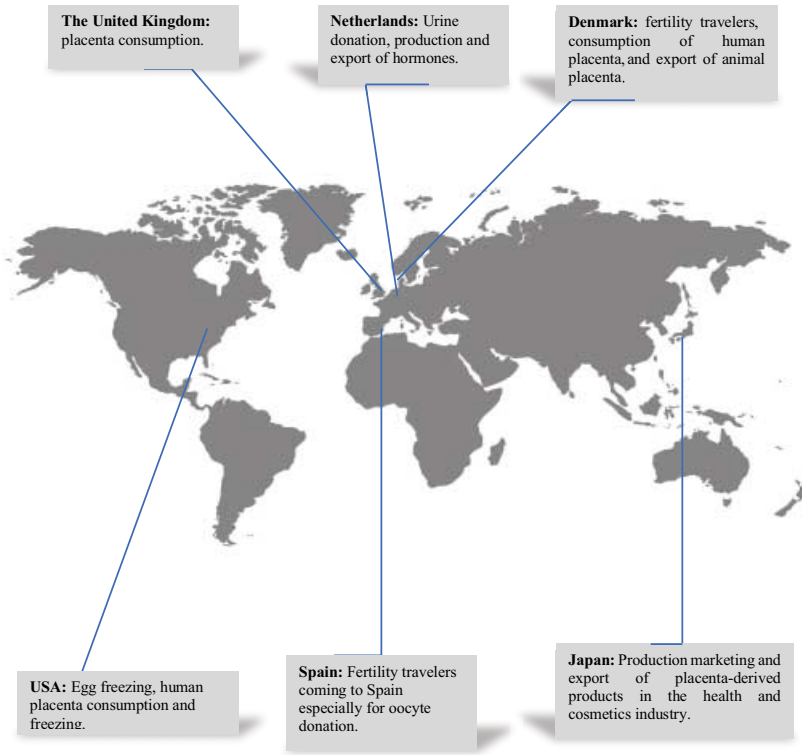

FIGURE 0.1. Mapping empirical sites: patients traveling for oocytes, urine-derived products entering the fertility industry, human placenta consumption, and animal placentas circulating to Asian pharmaceutical companies. This map is by no means a comprehensive map of how reproductive substances and organs, within Europe, move; rather, it exclusively details some of the primary sites, stories, and individuals that go into this particular set of assemblage ethnography undertaken during the time period of 2011–16. The directionality and speed with which reproductive fluids move are the products of various entanglements involving national and international legal stipulations, scientific discoveries, business and personal relations, tourism and travel infrastructures, clinical and technological expertise, as well as cultural imaginaries on who and what should be able to travel.

eggs are extracted through surgical procedures, as evidenced in this provision, urine and placentas are more readily made to appear as discarded fluids and tissue.

In *Global Fluids* I treat reproductive fluids as hybrid and very localized assemblages involving clinical expertise, instruments, persons, social relations, ideas on ownership, legal stipulations, trans-

portation, freezers, buildings, and spaces, to name a few, involving empirical work undertaken in Spain, Denmark, Japan, and the Netherlands. This understanding entails tracking how reproductive donations take form as they are assembled and given value. In this second meaning of the term, assemblage ethnography involves understanding how reproductive donations are assembled along frequently gendered, sexualized, racialized, and nationalized values. In the case of Denmark, for example, sperm has become an export commodity, while eggs, in the first law on assisted reproduction in 1997, were not even allowed to leave the country.[7] As noted by Rose (2007), understanding the ways that reproductive donations take on different values entails the conceptualizing of these donations as more than physical matter extracted through the development of particular reproductive techniques and frequently conceptualized through commercial and economic means. Notably, such an understanding involves tracing how reproductive fluids "engender certain ways of thinking about reproduction, for the subject and for the expert, certain routines and rituals, techniques of testing and practices of fiscalization, modes of advice giving and the like" (Rose 2007: 17). When employed as an analytical device, assemblage ethnography then turns to how reproductive fluids travel. This includes how laws, ethics, practices, and stories enable traveling and entangle with discourses and affects in different empirical contexts. In the process, reproductive donations, and the cultural paths that enable these to circulate, also achieve a certain degree of liquidity.

The Structure of the Book

The book is divided into four chapters. It begins with a presentation of feminist, cultural, and analytical perspectives, including pertinent theoretical perspectives on how to study global reproductive fluids. In this first chapter, "Scholarly Conversation," I stress the need to theorize the cultural paths and routes that enable reproductive donations to move and circulate in particular ways. Throughout this chapter, reproductive donations are framed as "living things"—achieving, losing, and gaining value, enabling certain kinds of relationships, and having particular careers (Kopytoff 1986). Following the theoretical setup, I turn to three in-depth case studies on reproductive donations: urine, oocyte, and placenta donations (chapters 2–4). In the case studies, feminist cultural analyses of written docu-

ments, online marketing material, field observations, and interviews work to illustrate how a particular reproductive donation achieves value in specific entanglements. I end the book by discussing the cultural politics of reproductive waste and value, including feminist bioethical concerns on the fragmented reproductive body, and I embed this discussion in earlier arguments involving reproductive choice and agency, as well as the inadequacy of the gift/market economic framework (Shildrick 2008).

In the first case study (chapter 2), I turn to urine donation in the Netherlands, in which pregnant women donate their urine to Moeders voor Moeders. Urine is collected between the sixth and sixteenth week of pregnancy. This is the time when the hormone human chorionic gonadotropin (better known as hCG hormone) is at its highest level. To the pregnant woman, the hCG hormone helps form the placenta and contributes to the nourishment of the fertilized oocytes. When processed by the fertility company Akzo Pharma (formerly Dutch, but now owned by the South African company Aspen Pharmacare), urine is turned into a main ingredient in the development of fertility hormones and hCG pregnancy test kits. This first case study includes online donor stories, marketing material, and field studies in the Moeders voor Moeders organization and the Akzo Pharma factory in the Netherlands. My interest rests with the ways providers account and narrate their experiences, the provider recruitment efforts carried out by Moeders voor Moeders, the practices involved in exchanging urine (including pick-up and processing), and thus the ways in which urine is turned into "liquid gold."

The second case study focuses on oocyte donation (chapter 3). It illustrates how oocytes move from being understood as excess and wasteful material to becoming not only gifts but also, as evident in the Spanish case, an outgoing and loving baby. In the case of global egg providers, eggs turn into intelligent, mobile matter and, when vitrified for later use, become frozen assets. When oocytes enter the fertility industry, they acquire a biography of their own, frequently drawing upon conventional (and national) stereotypes, fantasies, and imaginations, in this case between the West and the East. In the case of Danish women traveling to Spain for treatment, reproductive matter becomes embedded in stereotypes of character and temperament, re-naturalizing national differences while also mobilizing a tale of "exotic" likeness between donors and recipients. The case study is based on interviews with Danish fertility travelers, Danish and Spanish clinical directors, marketing material,

and also clinical observations in a leading Spanish fertility clinic. To discuss the ways in which eggs become not only mobile, globalized fluids but also "frozen assets," I turn to interviews with elective freezers in New York City and include a sensory ethnographic approach to a "take back your fertility" seminar on elective freezing in London.

In the final case study (chapter 4), I analyze how human and animal placentas move from being byproducts of birth or reproductive waste to becoming medicine, anti-aging, and beautifying ingredients in East Asian and Southeast Asian anti-aging cream. Consumers and human placenta encapsulation providers cite medical properties and spirituality as reasons for eating and encapsulating the placenta: the ability to connect spiritually with the baby, reduce postpartum depression, and restore iron and other nutrient levels after childbirth. The placenta gains other cultural and commodity meanings when companies such as Japan Bio Products use placentas in their cosmetic lines, citing the placenta's unique ability to repair damaged and ailing skin with whitening benefits, in order to ensure a perfect, bright complexion. In the case study, I illustrate how placenta bioproducts draw upon nationalized imaginaries when, for instance, Japanese human placentas are framed as good quality products and marketed as 100 percent Japanese placenta extract.[8] Meanwhile the Danish organic pigs' placentas that turn into an ingredient in the anti-aging cream produced by the Japanese company Hirosophy are positioned as being healthier than humans living in urban environments.[9] The chapter is based on marketing material, interviews with women who consume their placenta, interviews with Danish midwives who regularly handle the placenta, visits to a major Japanese placenta pharmaceutical and cosmetics company, and an interview with the company BHJ located in Southern Denmark, which picks up, handles, and distributes pig placentas to the Asian pharmaceutical market.

The three case studies jointly show how reproductive donations move out of the realm of reproductive waste and into that of reproductive value in different ways. In my conclusion, I discuss the cultural politics and the moral limits associated with the ways that global fluids move in and out of the marketplace. As noted by Radin (1996), reproductive donations are contested commodities. They do not begin as commodities but enter in and out of different commodity states, as Parry (2007) similarly argues. Tissue extraction and biotechnical processing and techniques enable biological matter to become valuable in new ways, or, as noted by Waldby and

Mitchell, "Waste material which may appear as the very opposite of value in one context can become the starting point for the generation of significant degrees of value in another" (Waldby and Mitchell 2006: 84). The three cases presented in *Global Fluids* illustrate how biovalue is accumulated in different ways while prioritizing different geopolitical contexts as well (Japan, Spain, Denmark, and the Netherlands). They show how reproductive matter moves from individual providers through reproductive technologies, clinical expertise, and industrial processes, in each entanglement gaining cultural value focusing on the performances that go into these forms of biocommerce and positioning reproductive donations as nature reinvented.

In the conclusion, I turn to the development of feminist cultural politics of reproductive donations and raise the following questions: What things may or may not be (commercially) exchanged? And why do some reproductive donations lead troubled lives while others swiftly enter a globalized resource economy? Feminist scholars have aptly criticized what they position as the market in reproduction (human eggs, sperm, and wombs), fragmenting women into sellable reproductive parts (Dickenson 2009; Scheper-Hughes 2015). In fact, providing the pharmaceutical industry with one's urine or placenta may at first glance appear less market-like. To engage this discussion, I turn to feminist perspectives on commodification, and I challenge what I see as the false (and unproductive) dichotomy between the gift and market economies. Instead, I argue that oocytes, urine, and placenta move in and out of different commodity states, and I note that feminist cultural politics on reproductive waste and value will benefit from looking beyond *what* is exchanged to *the acts* through which certain parts become exchangeable and enter different commodity states (Malmqvist 2012; Hoeyer 2013). Consequently, the feminist cultural analyst must respond to the following questions: What practices are involved when particular reproductive parts are exchanged? And what are the intended as well as unintended effects of these practices? Rose extends this argument when he stresses that reproductive markets not only create new possibilities for wealth but embody, generate, and perhaps even reconfigure ethical values (Rose 2007: 152).

Through engagement with feminist scholarship and drawing upon an assemblage of different empirical material, *Global Fluids* seeks to develop a distinct feminist cultural analytical contribution that addresses not only the economics of reproductive donations

but also the ways that reproductive donations engage the hopes and dreams of providers, businesses, technologies, consumers, and recipients; I therefore center the ways that reproductive donations are always already entangled and embedded in social and cultural relations. So the goal of this book is not to separate reproductive donations from biology but to illustrate how reproductive donations are jointly constituted and fabricated in the entanglements between nature and culture, nature and commerce, and nature and science, contributing to the ongoing feminist debates on the cultural politics of reproduction.

Notes

1. The sharing of breast milk as a form of donation is, for instance, seen on the "Only the Breast: A Community for Moms" website available at: http://www.onlythebreast.com (retrieved January 2016).
2. While the scientific evidence seems to vary, some reports do emphasize the ability for Pregnyl to be used for purposes other than ovarian stimulation. For example, see Zehr (2017) for a description of the use of Pregnyl in weight loss programs.
3. Japan Bio Products international affiliations can be seen on the company's online profile: Japan Bio Products Co., Ltd., "Company Profile," http://jbpglobal.placenta.co.jp/about/company/ (retrieved January 2016).
4. Professor Ayo Wahlberg, University of Copenhagen, introduced me to the concept of assemblage ethnography and contributed to my thinking on this topic. In his forthcoming (2018) book, Wahlberg uses the term assemblage ethnography as a ways of describing relations—whether regional or global—that appear in a particular site.
5. An exception to this is Wahlberg's forthcoming (2018) book.
6. Reference is here made to the Explanatory Report on the European Treaty Series—No. 164, retrieved September 2017 from https://rm.coe.int/16800ccde5.
7. In the first Danish law on assisted reproduction, transporting oocytes out of the country is deemed illegal. The text reads: "It is not permitted to bring unfertilized or fertilized human oocytes that in this country have been extracted, for the purposes of artificial insemination or research, abroad" (retrieved September 2017 from https://www.retsinformation.dk/Forms/R0710.aspx?id=84963 § 16). This part of the law was changed in 2012 largely due to a Danish couple who had fertilized oocytes stored in Denmark yet were living abroad. Consequently, the 2012 law on assisted reproduction does not contain this limitation: https://www.retsinformation.dk/Forms/R0710.aspx?id=141094 (retrieved September 2017).

8. An example of this type of product is Miccosmo's "White Label: Premium Placenta Essence," http://www.miccosmo.co.jp/english/wl.html (retrieved January 2016).
9. This can, for instance, be seen in Hirosophy's presentation of their use of Danish placentas available on their website: http://www.hirosophy.co.jp/ (retrieved January 2016).