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1.1 *Biotechnical feasibility, user agency and patients' strategies: how unwanted childless women and men strategically deal with the uncertainties of in vitro fertilisation*

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Introduction: In Vitro Fertilisation and the Question of Agency

Until the beginning of the 1990's *in vitro fertilisation* (IVF) and other biotechnologies for assisted conception have been studied in the social sciences with a primary focus either on their macro-structural societal conditions and effects or their underlying cultural ideas. Far less attention has been paid to the question of how these techniques are put into clinical praxis and how they are experienced and dealt with by the "lay users" – the childless women and men who hope to get a child by the use of these techniques. If the users' encounter with IVF had been researched, then this was done more in terms of *re*actions of users rather than in terms of their active involvement and decision-making [(1)]. In particular many feminist researchers of this time depicted women who use IVF as rather passive objects of a patriarchal biomedicine which seeks to appropriate and exploit women's reproductive abilities (COREA G. 1988, OAKLEY A. 1987, SPALLONE P. 1989). For the affected women one major consequence in this medicalisation of reproduction is, so it was suggested, that the inherent power imbalance between (male) doctors and (female) patients in biomedicine leads to a loss of women's control over the clinical procedures and their life situation. In consequence women lose their autonomy, when they enter the medical domain and undergo IVF-treatment.

When in the early 1990' interest in the actual practice of the New Reproductive Technologies (NRT) such as IVF increased and the "antitechnological romanticism" of earlier feminist studies (RAPP R. 1997: 33) was abandoned, women came to be seen in a less victimised and more active role. As

in previous studies of doctor-patient interaction (Conrad P. 1985, Stimson G. - Webb B. 1975), these more recent studies on the practice of the NRT showed that women are not so passive in the clinical encounter with doctors and technologies as was assumed before. Instead of being more or less helpless victims who have no choice they were shown to actively engage in and negotiate what is done and how it is done. This is not to say that they would be totally in control of the situation, but that they – within the constraints of the respective structural conditions of the clinical practice – actively try and find ways to take care of their interests and assert agency and autonomy (Rapp R. 1997, Franklin S. 1997, Lock M. - Kaufert P.A. 1998, Cussins C.M. 1998, Cambrosio A. *et al.* 2000, Saetnan A.R. 2000, Malin M. *et al.* 2001).

Perhaps the best known example of this line of argument in medical anthropology is the reader *Pragmatic Women* edited by Lock and Kaufert in 1998, in which the contributors show the variety and complexity of women's active encounter and responses to medicalisation and biomedical technologies. In the introduction Lock & Kaufert characterise these responses as being "pragmatic" in essence:

> «[...] women's relationships with technology are usually grounded in existing habits of pragmatism. For by force of the circumstances of their lives, women have always had to learn how they may best use what is available to them. If the apparent benefits outweigh the costs to themselves, and if technology serves their own ends, then most women will avail themselves of what is offered» [emphasis in original] (Lock M. - Kaufert P.A. 1998: 2).

Such pragmatism coupled with ambivalence, so they argue, may be «the dominant mode of response to medicalization by women» (*ibidem*: 2) It however, remains open in what sense these responses should be pragmatic, to what strategies such an attitude may lead and how they are put into praxis.

Sociologist Arthur Greil, writing on the experiences of American middle-class women with IVF, also insists on his informants' «creativity and agency in working within the medical framework to achieve their own ends» (Greil A. L. 2002: 103), although he sees this to be the case within a rather strict structural frame of constraints of the medical system. He suggests that these responses be best conceptualised as *working the system* insofar as women «try to push medical treatment in the direction they want it to go» and «are problem solvers, operating creatively within a system they do not control» (*ibidem*: 103). Greil identifies two main strategies of how his informants "work the system": (1) gathering knowledge which enables women to negotiate with doctors about the course of the treatment and (2) changing the doctor, when women are dissatisfied with the doctor's performance and the treatment process.

As the last example of how active technology users are conceptualised in the literature I want to mention Ann Saetnan and her concept of *negotiation-as-navigation* (SAETNAN A. R. 2000). With strong ties to both technology studies and women's studies, her primary research concern are the questions of how global technologies such as IVF become culturally appropriated (or "localized") in various societies, what role and means of negotiation lay users may have in this, and how this is best to be approached in the social sciences. Adopting a standpoint in which technology and society are regarded to be mutually dependent and to co-construct each other Saetnan distinguishes two modes of negotiation which among other things are relevant for what form of sociotechnical reality the cultural appropriation of technologies takes on: the first, *negotiation-at-the-table*, refers to the bargaining with another as representatives and spokespersons of the diverse interest groups or key networks may do – in the case of NRT such negotiators stem from and represent research networks, governmental networks, clinical network and the mass media. The second, *negotiation-as-navigation*, is the predominant form of negotiation for users «who are not seated at the table where designs are drawn and 'treaties' are signed. They meet the results of design and treaty negotiations as a limited set of consumer options or as infrastructures in their daily lives» (SAETNAN A.R. 2000: 20). Users negotiate in the sense of moving through or around in a satisfactory manner and «in threading their personal paths through those infrastructures, lay users also negotiate sociotechnical outcomes» (*ibidem*).

Both Lock & Kaufert and Greil as well as Seatnan make important contributions for the development of concepts which help to shed light on the agency of users of IVF. The flaws, though, which these approaches to user agency have in common with other approaches in the literature are that they remain on the level of attitudes and stop short of telling us much about the actual strategies people use in order to take care for their interest – Greil is here more specific than the others –. A more systematic account of such strategies is still missing. More important to my argument however is, that they – more implicitly than explicitly and here Saetnan is the more promising than the other authors – seem to reduce the question of user agency to a power struggle between doctors and patients. In particular Greil puts forward a widely found view in the literature on the question of agency and control in which the technological and systemic constraints emerge as rather fixed and which in addition rests on the assumption that the autonomy of patients is predominantly threatened by medical experts. The user strategies which Greil therefore discusses are exclusively aimed at influencing patients' relationship with doctors. This rela-

tionship is presented as the only realm in which users have the opportunity to negotiate control. Although this may well be often the case, it leaves out other possibly restraining aspects of people's situation and autonomy such as the limits of technologies or competing requirements resulting from a job or partnership. The problem with the concept of control as it is used in Greil's analysis and in the debate about the medicalisation of reproduction in general is that problematic aspects which lie beyond the doctor-patient-relations are not taken seriously. In consequence, discussing control and autonomy may not do justice to what is "at stake" for the users (KLEINMAN A. - KLEINMAN J. 1991), since the goal which people have when they enter the clinic and work for its achievement may lie beyond the doctor-patient relationship as may the obstacles which are seen to be blocking the way to it.

In this paper I intend to show with the case of women and men who use IVF in Austria, that social relations in the form of doctor-patient-relationship are not the only constraints which limit the user's agency, and indeed that they may not even be the most important. In order to achieve their ultimate goal of having an own child the strategies which they use for achieving this goal concern medical experts, but far more importantly these strategies aim to curb the uncertainties which they see connected to the medical treatment of their unwanted childlessness on the one hand and to make becoming pregnant as promising as possible on the other hand. After giving an overview of the study on which my argument is based, I will go into the question of the biotechnological feasibility of producing one's "own child" and the uncertainties which are connected to it as they are seen by our informants. In the following section I will discuss the two main strategies which people use in order to deal with these uncertainties: *investment* and *trying-out*. In the conclusion I will finally consider why these findings should be relevant for medical anthropology. It should be noted here that I shall not investigate in detail the burdens and suffering, which IVF treatment for most people – and in particular for women – certainly entails. However, since the focus of this paper is on user agency, I shall attach more importance to its conditions and how people strategically deal with this rather than to the resulting suffering itself.

The Study

The data and the analysis which I present here stem to a large extent from a study which Monika Lengauer and I did for the Austrian Ministry of

Science between spring 2000 and autumn 2002 and which we further developed for our joint thesis (HADOLT B. - LENGAUER M. 2003). With a special focus on gender aspects our research interest was the ideas, behaviour and experiences of unwanted childless women and men who use the diverse medical technologies for assisted conception which are available in Austria [(2)]. Two aspects of research design were particularly important for our study and distinguish it from others in the field: the first is that we worked not only with women, but also with men. This we thought important not only because male voices are hardly present in the literature on this issue, but also because both the medical definition of infertility (which usually talks of infertility when regular unprotected sexual intercourse of a couple does not result in a pregnancy within the period of a year) and the Austrian legislation have a strong focus on the heterosexual couple.

The second aspect is that we approached unwanted childlessness and people's attempts for a remedy as essentially being a "process in time" and not as a "state" as it is often found in the literature. Methodologically this resulted in the analysis of only a few cases, but these were researched in a rather detailed way and over an extended period of time. Backed up by initial fieldwork in an IVF-clinic and a survey among IVF users the main part of our data is about eight case studies of couples, which we followed in their quest for an own child during a period of 18 months. During this time we accompanied them to their clinical appointments in the IVF outpatient department of a university hospital in Vienna and regularly conducted interviews. For our research strategy and methods of data analysis we drew extensively on *Grounded Theory* (GLASER B. G. - STRAUSS A. L. 1967). The thousands of pages of interview transcriptions and observation protocols were organised and analysed with *Atlas.ti*, a software package for qualitative data analysis.

Following the principles of *Grounded Theory* we integrated our findings in a model which we called *children-making* (in German *Kinder-Machen*). By this we mean the goal orientated endeavour which unwanted childless women and men make in order to get an "own child" with the use of reproductive technologies. As such *Children-making* requires the deliberate decision to pursue this special way and in most cases means hard and burdensome work which often lasts several years. C*hildren-making* is to be distinguished from *children-getting* (*Kinder-Kriegen*) – producing children by sexual intercourse – which is conceived by our informants as the "normal" way of getting a child; becoming pregnant in terms of *children-getting* is thought to come about without much effort and more or less by itself. In our study we look at how it comes that people use IVF, how their quest progresses and

when and why they leave the medical domain again; we explore the various dimensions of the *children-making* and the intervening conditions which hinder or foster its progress; we analyse the strategies which people use in order to make the process go in the desired direction and we finally look at the outcomes which this endeavour has.

What follows in the next sections of this paper is part of this model and concerns one of the central intervening conditions of *children-making,* namely that the effectiveness of IVF cannot be guaranteed, and how people strategically deal with this.

The Biotechnological Feasibility of the Own Child and the Uncertainties of Children-making

In the mass media in Austria and elsewhere IVF is often represented as if its effectiveness in producing new humans were beyond questioning. Although statistical success rates may be mentioned (the figures range between 20–30% for a pregnancy per IVF-cycle), the biotechnical procedures around IVF are usually presented in an ideal typical, formal way in which one mechanically leads to another with a child as the result. When people enter the process of *children-making* some of them may also have the expectation that IVF's effectiveness does not pose any problem. But this assumption changes rather quickly, when it becomes obvious in the course of own experiences with IVF or by way of stories from others that this indeed is not the case: notwithstanding any success statistics, when it comes down to the individual case an IVF-treatment cannot assure that a woman becomes pregnant. For users of IVF therefore the possibility and actual experience of failure is an all too real fact which fundamentally crosscuts and impinges on all other aspects of the process of *children-making*.

IVF is a complicated technique in the sense that it requires the correct and timed interplay of a range of human actors (users, gynaecologists, laboratory technicians), bodily materials and functions (eggs, semen, embryos, follicles, uteri, hormone levels etc.), machines (ultrasonic devices, microscopes, incubators, etc.) and substances (artificial hormones, drugs, media for embryo cultivation etc.). Lasting between 4-7 weeks an IVF-cycle is made up by a series of phases or steps, which have to be worked off successfully in order to keep up to the possibility of becoming pregnant. These phases are: the hormonal stimulation of the ovaries in order to produce more fertile eggs rather than only a single one as in a regular menstruation cycle (lasting about 2-5 weeks); the puncture of the follicles which have devel-

oped in the ovaries in order to retrieve (or "harvest" as some doctors referred to it) the eggs; the fertilisation of the eggs with the semen[3] in the laboratory – the actual fertilisation *in vitro* – and the cultivation of the resulting embryos up to the 7 days after fertilisation; the embryo transfer, in which 1-3 of the developed embryos are put back into the uterus; and the implantation of the embryo in the uterus (nidation), which at the earliest can be checked by a pregnancy test after a further two-weeks of "waiting period". Each of the phases entails a sort of interim result which has to be of sufficient quality in order to be enable the entry into the next phase: the hormonal stimulation is required to produce enough follicles, the ovarian follicle puncture should result in as many eggs as possible and the fertilisation in a high number of embryos. These results are evaluated to be better or worse (there may be more or less follicle, more or less eggs etc.) and the progress towards the desired goal of the pregnancy therefore is regarded to be more promising or less. Only the result of the implantation phase – the final result so to say – ultimately is not gradable: in the end one can only be either pregnant or not pregnant. In any way, should only one of these phases fail, this would mean that the whole IVF-treatment has failed and everything must start anew.

However, IVF is not only a *complicated* technology, but also a *complex* one in that it involves and builds on aspects of the world which lie beyond technical feasibility. By way of using the ensemble of techniques (for which IVF is the umbrella term) it is supposed to support, to bypass or to replace those bodily aspects of the procreation process which are thought not to be working in the desired way. These techniques, though, cannot substitute the whole body in its reproductive functions, but necessarily build on the reproductive faculties of the body. A pregnancy therefore is the outcome of the interplay of what can be technologically compensated and what cannot be compensated. In spite of all medical technology and notwithstanding the best prospects during an IVF-cycle therefore, becoming pregnant ultimately escapes medico-technical feasibility and has to come about beyond direct human intervention. In this sense it has to *occur* beyond the human realm – nature, luck, fate, a divine authority or however else this realm would be conceptualised. We have called this fact, which is painfully present for users, the *uncertainty-of-occurring* (*Unsicherheit des Passierens*). Since it is decisive for the overall outcome of an IVF-treatment, the *uncertainty-of-occurring* in the first instance refers to the implantation of the embryo; subsequently however this form of uncertainty also applies to the interim results of earlier phases in an IVF-cycle. The fact of the feasibility limits of IVF has the important consequence for users (and medical specialists likewise) that

they cannot directly create the desired child. They are merely left to create the conditions and circumstances so that the occurrence of a pregnancy becomes as likely as possible. In this sense the techniques for assisted conception are seen to be mandatory and enabling for a pregnancy, but not to be directly causing it.

The *uncertainty-of-occurring* is but one form of uncertainty in the process of *children-making*. Our informants also often expressed their suspicion about the validity of what they think they know about the causes of their persisting childlessness and failure of medical therapies: is it "really" the case that a hormonal imbalance prevents becoming me pregnant or could the stress resulting from the constants fights with my work colleagues be responsible for it? Did the implantation of the embryo fail, because of my smoking in the past, or because the eggs were not of good enough quality, or because the doctors waited too long with the transfer, or because God does not want me to have a child? Could my assumptions about the whole matter be wrong? In the course of the treatment process, when people meet different doctors, hear different stories from fellow sufferers, look up new information in the internet and not least when treatment fails again and again people become painfully aware of the precarious status of this sort of knowledge: «Everything turns out to be so complicated and you never know for certain what you think you know», one woman complained in respect to this unreliability of knowledge. Because people in these instances do not reliably or sufficiently know what *actually* is the case, we called this phenomenon the *uncertainty-of-the-actual* (*Ungewißheit des Tatsächlichen*). This form of uncertain knowledge concerned various aspects of their unwanted childlessness and the treatment process: how they should interpret particular bodily states and experiences especially during the "waiting period" after the embryo transfer, how a cold would possibly affect the development of the follicles or if the cyst in the uterus had grown further. Most important however were the questions which were either directed to the "actual" causes of their childlessness or of the failure of an IVF-treatment – not least because reliable knowledge about these aspects was thought to be crucial for a successful future treatment.

The third and last form of uncertainty which is relevant here – *uncertainty-of-the-best-possible* (*Ungewißheit des Bestmöglichen*) – is also connected to unreliable knowledge. But whereas *uncertainty-of-the-actual* refers to what is "real", *uncertainty-of-the-best-possible* refers to what should best be done. Our informants described it to be a major problem that they could not know for sure if they had made the right decisions in their pursuit of an own

child or if they should better try something else. This difficulty concerned not only the choice between treatment options, between doctors and between clinics, but also how to prepare for the next IVF-treatment, how to behave (and what not to do) during an IVF-treatment or how to organise everyday life circumstances in order to create as favourable conditions for a pregnancy as possible.

All three forms of uncertainties are bound to the awareness of the limits of both knowledge and action. Thus, based on a division between knowledge and its supposed real-world-referents these uncertainties point at aspects of the world which lie beyond people's assured knowledge and direct control: for all of our informants this first and foremost concerned the specific reality of their own physical bodies and their procreative faculties on the one hand and the actual treatment procedures and clinical practice on the other hand. Furthermore, this may also be linked up with ideas about luck, fate or a divine or comic power. However, it is in this transcendent realm, were it is finally decided if the pregnancy occurs or not. This fact provides these forms of uncertainties with its relevance as central intervening conditions for *children-making*. People's efforts to control and deal with these imponderables therefore are at the core of *children-making*. Concerning the *uncertainty-of-occurring*, people's strategies aim to push the feasibility horizon in as promising a direction as possible; and in respect to the *uncertainty-of-the-actual* and the *uncertainty-of-the-best-possible* they try do change their knowledge horizons to be as favourable for their informed decisions as possible. The strategies which people use to accomplish this shall be considered in the following section.

Dealing with Uncertainties: Investment and Trying-out

The *uncertainty-of-occurring* renders the experience of failure an essential element in the process of *children-making* – not only emotionally, but also structurally. Instances of failure of IVF-cycles separate the *children-making* into distinct sections, propels the process forward, gives it a plot and – in the case that no pregnancy has occurred beforehand – finally terminates it usually after several years of "trying". Besides the complexity of IVF and the considerable expenditure of time and work which it involves, the uncertainty of its effectiveness and actual failures make *children-making* into a multilayered long-term project with a beginning, a trajectory and an unknown outcome. Users of IVF thus adopt the fundamental attitude that this project is to be approached in a rather determined and goal-orientated

manner which we call *purposive handling* (*planvolle Handhabe*); it constitutes one of the essential characteristics of *children-making*. The handling of *children-making* is to be regarded as purposive, because – notwithstanding all ambiguity, contradictions and unexpected changes of direction involved in it – it follows a plan, is based on a explicit decision to pursue a particular course of action (and not a different one) and because it is assertively put into action. According to Alfred Schütz these are the components which constitute work – or to use his illustration, which distinguishes the leaving of tracks in the snow from treading a path in the snow (SCHÜTZ A. – LUCKMANN T. 1984: 24ff).

Purposive handling of the biotechnological making of children aims at three crucial dimensions: the first concerns the necessary work packages and procedures of the standard IVF-treatment as already outlined in a previous section. To the users it is unambiguous – at the latest after the first IVF-treatment – how these procedures are to be worked out and what they are for. And until further notice they (though not necessarily their results) do not pose any problems in terms of uncertainty. This kind of work requires close cooperation between IVF-experts and users. In particular women are concerned in this respect, because they have to do the most work, since the medical techniques almost exclusively focus on the female body. Among other things this kind of work involves having daily hormone injections, going to the clinic for the ultrasound scan in order to evaluate the growth of the follicles, undergoing the (painful) puncture of the follicles in the ovaries, having the (joyful) embryo transfer and doing the (emotionally demanding) pregnancy test. Even though these activities were generally described to be arduous and burdensome, our informants nevertheless expressed a strong sense of content and confidence about this work, because they felt that they know what to do and are able to actively and personally contribute to their project of the own child. It became on the other hand a big problem, when this was not the case. This became in particular apparent during the two-weeks "waiting period" (as it often was referred to) after the embryo transfer, when all "proper" medical work has been already accomplished and when nothing is left to do apart from waiting and hoping. A woman speaking about the difficulty of not being able to "do anything" said the following:

> «If I would only rely on luck, I would not need to do anything. But I do want to do something! [...] I mean, I they [the doctors] would tell me to do a headstand five times a day, I would do it».

Because of the inability to "do anything" in addition to being faced with the imminent failure, this woman and all other informants regarded the

implantation phase the most difficult stage in an IVF-cycle in terms of emotional tension, anxiety and disappointed hopes.

What we have discussed as the uncertainties of *children-making* in the previous section falls into the second dimension. In contrast to the standard-work of the first dimension this includes the actual biotechnological procedures in their uncertain aspects, but beyond the actual treatment also involves coping with the failure of treatment and the clarification process in which people have to clarify if and how they should carry on with the treatment. This dimension is often indeed experienced as problematic and takes up the main part in people's considerations about the purposive handling of *children-making*.

The third target area of *purposive handling* finally concerns the manifold contingencies which may emerge during of before an IVF-treatment: a flu, a vaginal infection or the discovery of a cyst in the uterus, but also troubles at the workplace or with the partner, or unforeseen life events such as the illness of the mother. Such contingencies are experienced by users as individual extra obstacles on their way towards the desired pregnancy and they are seen to further complicate, slow down, interrupt or even terminate the treatment routine. They urge users (and medical specialists likewise) to reconsider their original plans and to swiftly adopt them to these new circumstances.

Investment

Given the specific technical and organisational requirements and uncertainties of IVF, people's main strategies in their quest for an own child can be called *investment* and *trying-out*. By means of these strategies our informants tried to shape *children-making* in its purposive aspects as promising as possible.

As we have seen before the *uncertainty-of-occurring* prevents the own child being achieved unmediated. It is true that people have the choice and ability to work for its enablement, but ultimately the pregnancy has to *occur* beyond human feasibility. "Getting a child" with the help of IVF is thus a form of *mediated getting*, since it needs a third agent, which mediates between the accomplished work and the anticipated result. In our case this is what the "occurring" refers to – be it thought to be brought about by nature, luck, fate or god. Because of this people cannot "buy" or "produce" their child (which would constitute forms of "unmediated getting"), but only *invest* in a child, or more precisely they can only invest in a medi-

ating object, which in turn will allow the child happen. Since this basically follows the logic of investment and not that of buying and producing, we have called this strategy *investment*.

Our informants themselves used the term "investment", as is apparent in the following statement of a man, a financial expert, who talked about *children-making* as a sort of a life project which he shares with his wife:

> «This [the IVF-treatment] is a shared project, these are shared experiences. And in order to put it in my occupational jargon, it is a shared investment. If it will bear fruit, the investment, however will turn out».

Other informants talked in terms of "investment" and related idioms with respect of the financial burden which IVF poses to many, but also regarding other resources and outcomes connected to IVF: they talked about a "loss of time" (*Zeitverlust*); or that they had "wasted time" (*Zeit vertun*) or "blown money" (*Geld verpulvern*); that the child would be "worth the expenditure" (*den Aufwand wert sein*); that they had "put in" (*hineinstecken*) so much hope and energy, but now there would be so little "to be got out" (*herausschauen*); that the "yield" (*Ausbeute*) of a puncture had been good or disappointing; or that getting children with medical assistance would "*have its price*" (*seinen Preis haben*).

The resources which people invest have already been mentioned: *work* (in connection to the prerequisite and beneficial things to be done), *time* (which is required both for working and for waiting), *bodily resources* (gametes, good health, bodily suffering etc.) and finally *money*. There are three overlapping fields of objects in which IVF users invest these resources. Some of them are conceived to be prerequisite, others merely beneficial, though nevertheless important.

(1) The first field is made up the working off of IVF procedures and the employment of diagnostic measures and medical means in general. By and large these are seen to be essential.

(2) Investment in the acquisition of knowledge, the second field, may be seen as both essential and beneficial, depending on the status of the respective knowledge. While the basics of how to accomplish necessary IVF work (e.g. when and how to give oneself the hormone injections) were absolutely crucial to all of our informants, some of them found it "merely" helpful to know a lot about things such as new kinds of medical techniques and medications, other people's experiences with IVF or about other IVF clinics in the same region. All this knowledge may be regarded as beneficial for the evaluation of the actual situation or perhaps for future use, but it is not regarded as enabling a pregnancy in the narrow sense of the term.

In any case, people acquire such knowledge primarily by talking to medical experts, reading the pertinent literature, talking to other users or by looking up relevant topics in the internet. Their doctors were particularly important in this regard, even though people often complained that they provided them with too little information.

(3) As the third field of investment people invest in what can be called "favourable conditions". These refer to bodily, psychic, organisational, temporal and structural conditions and circumstances which are deemed beneficial for the *occurring* of a pregnancy, but not prerequisite. For example, people might decide to have a long break between two IVF-cycles in order to start the next treatment relaxed and in best state of health; they would take time off work in order to reduce stress during the treatment which is seen to be detrimental to the chance of getting pregnant; they would try to sort out troubling life circumstances before they start with the IVF-cycle so that they are able to put all their energy into the treatment process. The creation of such favourable conditions were regarded as particularly important during the emotionally demanding implantation stage – not only because there is "nothing else left to do" and such activities were found comforting, but also because this is the crucial phase in which all the former investment culminates and the getting pregnant has to be supported by all possible means. Some women reported that they would drink a lot of water, stop smoking or rest a lot during this time. Others said that they would not have sex, have recreating walks in the wood, avoid any arguments with other people or that they would talk to the embryo and encourage "her/him" to stay in the womb.

So far we have looked at *what* IVF users invest and *where* they invest it. What remains to be discussed is *why* at a particular point in the process of *children-making* they choose to invest in one particular object and not in a different one. The strategy which people employ in this respect is *trying-out*.

Trying-out

This strategy refers to the evaluative and selective probing of available medical techniques, doctors and clinics for their effectiveness in relation to reaching the goal of the own child. It takes on the form of excluding and eliminating insofar as it puts out of play what does not seem to be appropriate and adequate for getting the own child (any longer). This requires that more than one option be available and that people are able to choose

among those available (in its minimal form they have to "take it or leave it"). *Trying-out* is put into practice on the basis of the respective stock of knowledge and experience which people have at hand at certain points in the process of *children-making* as well as on the basis of their current assessment of available paths in terms of success probability, personal preferences and life circumstances and price. Both realms considerably differed among our informants and were also subject of change over time. While for example artificial insemination may have seemed sufficient at an earlier stage of *children-making*, it may be seen as useless after it failed the fourth time. Or somebody may loose their trust in his/her IVF-specialist's competence and therefore change the clinic.

What all our informants had in common, however, was their willingness to "try out everything" and to "do all that one possibly can" (*bis zum Letzten gehen*), as they said. Or as a man put it:

> «I mean, one tries not to miss anything, so that you do not have to reproach yourself and say: ok, why haven't you tried this, why haven't you tried that, isn't it?».

Although not all of our informants actually "tried out everything" in practice, they nevertheless made considerable efforts to know about all available options so that they would be able to make an informed choice.

Trying-out shares with *investment* that it is connected to a process in time which is hoped to be manipulability towards a desired outcome. After all, *trying-out* is intended to control the *uncertainty-of-occurring* and the other uncertainties of *children-making* in a way which enables a pregnancy to occur. *Trying-out* and *investment* however entail different time horizons and become prominent at different points in the treatment process. This is related to the two reference frames of planning which *children-making* involves. One such frame within which people plan and carry out plans is given by the single IVF-cycle as it unfolds from the beginning of the hormone stimulation to the final pregnancy test. This is the preferred perspective which people adopt immediately before and during an actual IVF-cycle. Here the strategy of *investment* is of paramount importance. Another frame of reference concerns the *children-making* in a broader sense and beyond the single IVF-cycle. It brings the whole treatment process and the life project of the own child into view. This perspective is predominantly adopted, when a treatment had failed and when people take a break in order to think things over and to "come back down to earth", as one of our informants put it. Sometimes such a break take only a few weeks until the next IVF-cycle is started; but sometimes it takes several months or even years. Here the strategy of *trying-out* becomes highly relevant.

These two reference frames differ in the status which a failure has in each of them. In the case of the first frame the failure – or the next possibility of getting pregnant, when seen from the time perspective of within an IVF-cycle – marks the endpoint of concrete planning, not least because the treatment outcome is so unsure and people do not want to anticipate the future beyond the current IVF-cycle should it actually fail. As for the second frame, a failure constitutes a sort of milestone, which – notwithstanding its negative appraisal – subdivides *children-making* into different periods and creates its rhythm of "tries" and "breaks". As culmination points of single IVF-"tries" such milestones become a sort of cross-road in the course of *children-making,* because they open up the space for a pause and for the potential for a change of direction in future. *Trying-out* is essentially based on this potential. Whereas *investment*, then, is intended to put into practice the "try" in the best possible way, *trying-out* is the strategy which is appropriated in order to find and decide on what and how to try in the first place. This strategy is central not least for the question of when to terminate the *children-making* altogether: it is only when people have come to the conviction that they have tried out everything adequate in their particular case, that they can stop *children-making* and leave the medical domain without the feeling that they could regret this decision sometime in the future.

Concluding Remarks

I started this paper with the question of user agency and pointed out that in the literature about IVF the negotiation of control and autonomy has been largely reduced to the doctor-patient-relationship. Other aspects which might be relevant in this regard have not been taken seriously enough in the analysis. By looking at how users of IVF in Austria strategically handle certain aspects of their unwanted childlessness I intended to show that it is not always and most importantly doctors and their interests that are seen to narrow people's autonomy. Although they do so to some extent, it is the requirements and limits of the reproductive technologies that for IVF users pose the main problems in their encounter with IVF. Thus, what they struggle to control is not so much social relations, but rather the relations between human feasibility and the realm beyond, since for them these are the key obstacles on the way to what is most at stake, having their own child.

What conclusions can be drawn? I would like to raise two points. The first is that when we talk about user agency we should not merely focus on

people as actors who are more or less exclusively engaged with the social dimension, but rather as actors in a more general sense who live and act in multiform and rich worlds in which the social is but one (though, of course, highly important) dimension. The problems which people encounter as curtailing their autonomy are not exclusively to be found in the social. At least in the study of the NRT the focus on the social dimension has led attention away from the technical dimension in spite of its essential role in the quest for the own child. The conceptualisation of how users strategically deal with the obstacles towards the child as *investment* and *trying-out* is an attempt to develop a more integrated view of the social and the technical and intends to do more justice to people's view of their worlds and the kind and scope of agency they have in it. We need to study in a more comparative manner, if these user strategies can also be found in relation to other medical technologies, how and under which conditions and with what effects they are pursued, or if there are other such strategies. Gaining more systematic knowledge about such strategies would be important to the question of how people use biotechnologies and how they are used by them. In any case this requires a profound understanding of how these technologies actually work (and do not work), of what their characteristics are and of how they are put into practice. Despite the huge body of social science literature on the NRT these questions have hardly been tackled.

This brings me to the second point. What we have conceptualised as the uncertainties of *children-making* draws attention to questions about uncertainty, partial knowledge and non-knowledge and how people deal with this. To some extent this has been theorised under the rubric of "risk". Risk too is related to an unknown future and thus belongs to the realm of uncertainty. It is, though, just one form of uncertainty, and *uncertainty-of-occurring* as I have discussed it in the case of IVF would constitute another form. They differ, though, insofar as strategies for handling risk are intended to *avoid* something, whereas strategies for handling *uncertainty-of-occurring* are aimed to *enable* something. For an assessment of its relevance it needs to be investigated in what other phenomena this comes to the fore as well. However, such forms of uncertainty and their relations to the broader category of uncertainty are clearly under theorised in anthropology (though not so much in sociology at least as far as expert knowledge is concerned). If it is the case that our world is becoming increasingly complex and therefore uncertain – and the biotechnical developments in reproductive medicine or the "genetisation of medicine" are cases which would support this view – then user strategies for handling this complexity can also be expected to become more important for people's efforts to shape a satisfactory

future. If medical anthropology is to be focused on what is "at stake" for people and how they go about it, then this should become an important topic in future research.

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Notes

(1) In addition, these studies restricted their focus predominantly to women and excluded the perspectives of men or couples.

(2) Similar to Germany, Switzerland or Norway, but in contrast to Great Britain, France or the USA, Austria has a rather strict legislation in terms of admissibility of the various forms of assisted conception and of user access. Austrian law allows IVF only for heterosexual couples who are married or live in a "stable" marriage-like partnership. Singles are just as excluded from access as homosexual couples. IVF and embryo transfer are only permissible with the eggs and sperm of the social parents-to-be, which means that egg donation, embryo donation and all forms of surrogacy are illegal in Austria (BERNAT E. 1992, KOCH H.-G. 2001).

(3) By Austrian law the semen has to stem from the husband or partner.

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