

‘Hearing’ or ‘Deaf’? Discussing epistemological and methodological issues related to the bioethical discourse on paediatric cochlear implantation

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Perhaps the most dominating question in the bioethical discourse on paediatric cochlear implantation is that of whether or not a prelingual deaf child should undergo surgery. This paper argues that other, possibly more important questions can be posed if the bioethical discourse is based on a better empirical understanding of what cochlear implantation might mean for a prelingual deaf child. Many contributors for and against paediatric cochlear implantation base their arguments on the theoretical premise that choosing whether or not to implant is effectively the same as choosing between having a hearing and speaking child or a (culturally) Deaf and signing child. This notion is rejected analytically as oversimplified. Methodologically it is paramount to distinguish between *hearing ability, the ability to pick up and utter words or sentences* and *the ability to use language to successfully interact with others*. The text argues that more epistemological weight should be placed on the latter. Unfortunately, it is not only the greater part of the bioethical discourse that fails to do this, much of the clinically conducted outcome research does the same. To make the proposed distinction, it is necessary to reflect over the methodological requirements empirical investigations should meet. A pilot study modelled according to these suggested requirements is presented and discussed. The foregrounding of communicative practises in this pilot study highlighted several bioethical aspects of cochlear implantation. These aspects are connected to questions of identity formation and adult expectations in relation to the technology. The paper suggests that these new questions should be adopted in the ongoing bioethical discussion and recommends further research in order to reach a better assessment of practices related to cochlear implantation.

Keywords: cochlear implants; bioethics; deafness; language development; recognition

Introduction

This paper addresses the bioethical discourse on paediatric cochlear implantation and argues that more empirical research designed to investigate how implanted children use language in their everyday life is needed in order to move forward this bioethical discussion. Part 1 of the text addresses and analyzes the question that dominates current discourse – whether or not a prelingual deaf child should be fitted

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with cochlear implants – and partly refutes this as the most relevant bioethical question related to implantation. The analysis points out that both the bioethical discourse as well as much of the mostly clinical outcome research on implants fails to recognize the epistemological significance of distinguishing between implanted children's hearing ability, their ability to pick up and utter words and sentences¹ and their ability to use language interacting with other people. The analysis suggests that the latter is the more important bioethical aspect of implantation.

As 'language' is a complex concept, Part 2 of the paper discusses what methodological requirements should be met in order to study implanted children's use of language. In Part 3, a pilot study modelled according to the suggested methodological requirements is presented and subsequently discussed both in a methodological and in a bioethical context. Although the pilot study is limited in scale it supports the notion that outcome studies should empirically focus on implanted children's use of language and not their hearing. The empirical results presented here do not allow any general statements to be made; however, the discussion suggests some hermeneutically based interpretations of the results that, among other things, suggest that the questions of how an implanted child is recognized among his or her peers and allowed to develop lingually might constitute important bioethical issues. The bioethical discourse on paediatric cochlear implantation accordingly should seek to address more complex questions than the question of choosing or refraining from implantation.

Part 1. Cochlear implantation surgery or not? The alleged choice between becoming hearing or Deaf²

The bioethical discourse on paediatric cochlear implantation has attracted the attention of scholars in different fields: Ethics, Deaf Studies, Disability Studies and Health Technology Assessment. Though the focus and agendas among these scholars vary from mere political statements to analytical approaches, a consistent and persisting theme in their discussions has been *whether or not* a prelingual deaf child should undergo surgery at all (Hintermair and Albertini 2005; Sparrow 2005; Berg et al. 2007; Levy 2002; Lane 2005; Lane and Grodin 1997).

Here, the parental decision to opt for implantation or refrain from it is usually seen as a choice between which of two mutually exclusive futures the child will have. If implanted, the child is expected to become *hearing* (or near hearing), and enter the majority society of hearing people able to use a spoken language. The child who is not implanted will continue to be deaf, and can enter a community of people who have sign language as their primary language.

It is this allegedly dichotomous nature of the parental choice which is questioned and analyzed in this first part of the present paper. As an initial remark, it is probably not unreasonable to suggest that this conception of an existing dichotomy may in itself be one important reason why the case of paediatric cochlear implantation has attracted bioethical attention in the first place. What seems to have intrigued many bioethicists is that ethical arguments supporting either option exist, something which would make the case of paediatric cochlear implantation something of an ethical paradox. On one hand, as most people can hear and rely heavily on this ability, being unable to hear in a mainly hearing world represents a challenge (whether it is socially constructed or of natural origin). From a medical viewpoint, deafness is a health issue, and attempting to cure or ease the pathological state of not being able to hear

by means of the latest in technology would normally be thought of as ethically uncontroversial.

On the other hand, linguistic research dating back to the beginning of the 1960s made a finding that is generally accepted today: that sign languages are natural and fully-fledged languages capable of emulating anything and everything that spoken languages do (Armstrong, Karchmer, and Van Cleve 2002; Stokoe, Jr. 2005). Deaf people are thus recognized as a lingual minority, for example, in the 2007 UN Convention on the Rights of Persons with a Disability (Kermit 2007). From this perspective it can be argued that it is ethically problematic if deaf children have their possibility of entering a signing community revoked by means of surgery. Languages are living memories that reflect people's lives and history. Because languages are a part of our common human heritage it is a disturbing loss for all humanity when a language ceases to exist. On these grounds many nation-states have recognized a responsibility for preserving and protecting their lingual minorities. It is also on these grounds that activists – some of whom are themselves deaf – have even accused surgeons who perform implantations of attempting to commit ethnocide and of wanting to get rid of 'Deaf culture' entirely (Nakamura 2006).

Conceiving this as a paradox, the strands within the bioethical discourse on paediatric cochlear implantation in question here presuppose as a theoretical premise that at birth, a deaf child is neither hearing nor belongs to a signing (Deaf) community (Levy 2002), but will become either hearing or 'Deaf' depending on whether or not the child's parents choose implantation surgery. Different scholars tacitly or explicitly accepting the aforementioned as a true dichotomy have developed a variety of bioethical arguments spanning from the mere political issues of recognizing minorities to fundamental ontological arguments about the nature of deafness. (An analysis of the most prevalent arguments is presented in Kermit [2008] and Kermit 2009) The hallmark of these arguments is that they tend either to defend or reject paediatric cochlear implantation universally; implantation is either ethically right for all deaf children or ethically wrong for all deaf children. The alleged dichotomy is thus repeatedly presented as apparently consistent, something which continuously strengthens the dichotomy's position as a basic premise for the discourse itself.

Here, it is first the consistency of equating 'hearing' with 'having a spoken language' and of opposing this entity (hearing and speaking) to 'deaf and having a signed language' which is questioned.

From a historic perspective, the deaf child's social and lingual development leading to membership in a signing community (becoming 'Deaf') is well-documented (Padden and Humphries 1988; Ladd 2003; Grønlie 2005; Kruth 1996): to acquire a sign language through social interaction in a signing environment and thereby become a signing member of a signing community is essentially what 'Deafness' means (Ladd 2003). In the case of deaf children of deaf and signing parents, growing up with signing peers in contact with a signing community their development has been described as a process much like the natural development of any other children. For the deaf child of hearing parents, becoming 'Deaf' was often the result of having attended a deaf school and acquiring a signed language through interaction with fellow students. It is by no means implied here that becoming 'Deaf' historically has been easy or straight forward. Deaf children have faced several barriers (e.g. a lack of recognition of signed languages as suitable for educational purposes), many of which probably still exist today. Nevertheless, without down-

playing the possible obstacles, the simple analytical point illustrated here is that the acquisition of sign language for a deaf child can be a process analogous to the acquisition of a spoken language for a hearing child, at least in principle.

It is also important to point out that having sign language as a primary language by no means excludes the possibility of acquiring also a spoken language. Even though it might be difficult for the deaf child to pick up speech, he or she can learn to read, write and produce speech in accordance with his or her abilities. Research on bilingualism generally assumes that this acquisition of a second language becomes easier when the new language can be contrasted to the (here signed) language the child knows (Engen and Kulbrandstad 2004). Since 1998 the Norwegian Educational Act (Kunnskapsdepartementet 1998, Section 2, Paragraph. 6) has thus asserted deaf children's legal rights to acquire both Norwegian Sign Language as well as spoken Norwegian.

In this context, the initially linguistic recognition of signed languages as fully fledged languages becomes epistemologically significant. As both signed and spoken languages are natural languages, comparing a deaf child developing a signed language through interaction with signing peers and adults (and maybe also secondly acquiring a spoken language) with a hearing child developing spoken language (and perhaps also acquiring a second language) arguably makes sense. The same cannot be said about comparing a deaf, implanted child expected to acquire a spoken language, with a hearing child who develops language.

One reason why the latter makes little sense is the rather simple point that a distinction should be made between developmental and transformational (Crouch 1997) processes in the case of cochlear implantation. For the child who is born hearing, spoken language development is a natural process and even though we do not fully understand the process, a majority of children acquire and master spoken language with no particular support. The implanted deaf child, on the other hand, must first undergo the pathological shift from being deaf to being hearing (or at least hearing more than before), before the child may start the developmental process of acquiring and starting to use a spoken language. This is, however, a theoretical abstraction without an epistemological basis or a firm backing by empirical results. On the contrary, it is generally accepted that even those achieving optimal outcomes with their implants – measured clinically as the ability to pick up and produce words and sentences – remain at least moderately to mildly hearing impaired. It is also evident that cochlear implants do not constitute an instant repair of damaged hearing (Wie 2005). Implantation necessitates a period of habilitation whereby the child learns to interpret the electrical stimulation of the auditory nerve by the apparatus as sounds.

Bioethicists who equate hearing and the ability to use spoken language thus seem to assume the validity of the deductive syllogism that because (Premise 1a) hearing is a means to acquire and master a spoken language; and (Premise 2a) cochlear implants are a means to obtain hearing, then (the conclusion is that) cochlear implants are a means to a spoken language. There is no flaw in the logic here, so formally the conclusion is 'true'. The problem is that the premises are slightly oversimplified. Empiric realities are probably more along the line that (1b) *normal* hearing is *one* usual prerequisite for the acquisition and use of a spoken language; and (2b) cochlear implants are a means to obtain *some* hearing *after a period of habilitation*. No clear conclusion can be drawn, however, from these latter premises. They tell us something general about hearing and something about implanted

children's hearing ability, but absolutely nothing about implanted children's capacity for language.

From the perspective of means and ends it is, however, quite reasonable to demand that language development and the ability to use language should be regarded as more epistemologically significant than hearing enhancement. In analytical terms, a cure or treatment serves as a means to an end, but this end can be perceived as more than the mere healing of an organ. For example, if I am treated for a fractured arm, the treatment serves as means not only to relieve me of my pain, but more importantly to obtain the use of my arm again as my arm in turn serves me as a means to a range of ultimate ends. Parallel to this example, the restoration of hearing by means of cochlear implants *in itself* hardly suffices as an end. The end of implantation should be the things hearing enables a person to do. To hear is undeniably useful in many ways, but in the context of paediatric cochlear implantation the end must above all be regarded as: (1) the acquisition of a language as well as ultimately; and (2) the ability to use this language successfully.

It comes as no surprise that most of the empirical outcome research on implants implicitly, and sometimes explicitly (Wie 2005), shares the view on the first demand (1) and regards spoken language acquisition as the end of implantation. What is surprising is that much of the clinically conducted empirical outcome research generally fails to distinguish epistemologically and methodically between hearing ability, ability to pick up and utter words or sentences and the ability to use language. In a major review study on outcome research published in 2005, Thoutenhoofd et al. (2005) commented on this lack of distinction:

Very few studies attempt to assess the child's ability to perceive and produce spoken language in their day-to-day lives, after implantation, rather than in clinical tests. (Thoutenhoofd et al. 2005)

It is not necessarily wrong that the ability to pick up and utter a spoken word or sentences in a controlled environmental setting involves a capacity for language, but as it is often unclear whether it is the child's hearing ability, the child's, for example, lexical or grammatical skills or some other lingual capacity which is tested in these studies, the results have limited value. Nevertheless, in some studies on how implanted children perform in speech perception and speech production tests, which arguably mostly measure their hearing, the results are interpreted also as documentation of general language development (Wie 2005; Richter et al. 2002; Geers 2004; Tomblin, Barker, and Hubbs 2007). This might leave the erroneous impression that clinically conducted outcome studies can fully assess the implanted children's ability to use language in their daily lives.

During the process of habilitation, it might be difficult to make any *practical* distinction between learning to hear and starting to acquire and use a spoken language as the child is stimulated with speech. This might explain – though not excuse – the common failure to make the aforementioned distinctions, but the question remains of whether research can accept the equation of these different ends without reservations. It could well be argued that many outcome researchers apply the same oversimplified syllogistic understanding of the relation between hearing and spoken language as the bioethicists described above.

A bioethical discourse focusing on the prelingual deaf child who is fitted with cochlear implants should thus concentrate on the lingual aspects of implantation, and such a discourse would gain in terms of relevance and accuracy if the partakers

had a clearer understanding of how implanted children use language in their daily lives. As this latter empirical question is still largely unanswered, and because a large proportion of clinical outcome research mixes different questions involving both pathology and language, new empirical research specifically designed to investigate implanted children's lingual capacities (and not their hearing) could provide results which would constitute important epistemological premises for future bioethical discussions.

Part 2. Methodological requirements

In this part of the paper, the present discussion turns to the practical, methodological question: what requirements should empirical outcome studies researching implanted children's lingual capacities meet? Answers to this question would rely very much on the conception and understanding of what language in itself means. From some philosophical and linguistic points of view the concept of language involves a great deal more than simply the ability to perceive and utter words or sentences. Ludwig Wittgenstein (1967) is one important contributor to this notion of language. For him, the question of what language 'is' is inextricably linked to interaction and communication (which also allows self-identification and identity formation). Language can be seen as a means we can act through and which allows us to pursue a range of ends, provided that we know the rules of the language. Here, rules mean not only the formal rules like the grammatical patterns of a language; Wittgenstein (1967) points out that we comply with even more complex rules when we act through language. For example, if I want to persuade someone I have to know the (for instance pragmatic) rules of persuasion and how they are different from the rules I comply with if I am commanding someone. Other philosophers' thinking has suggested in similar ways that when a child learns a language the child simultaneously learns to act in the world and form its own self. Accordingly, there might not be any hard and fast division between the child's language development and his or her general (e.g., cognitive, social and moral) development; both might presuppose the other (Lahey 1988; Vygotskij 1978; Mead 1912, 1913).

This latter conception of language has been contested by Noam Chomsky (1975), among others. He holds that language is an ability we are born with and this ability exists independent of other abilities (e.g., cognitive and social) that we must develop. Notwithstanding, Chomsky does not suggest that what he sees as a congenital ability for language automatically secures the child's language development; it needs to be triggered through interaction and communication with others (Chomsky 1975).

This emphasis on interaction also fits well with contemporary ethical theories that see the different ways in which humans can express mutual recognition of one another as ethically significant, because experiences of mutual recognition may be vital for a person's development and preservation of an identity that can be regarded as authentic. This concept of an authentic identity formation has been comprehensively developed above all by Charles Taylor and Axel Honneth (Taylor 1992a, 1992b; Honneth 1995, 2000). Though neither deals explicitly with children, they both emphasize recognition as a vital prerequisite to the successful formation of an individual's identity, a process whereby a person obtains an intact self-relation and freely decides her or his own originality. With the possible exception of Chomsky, this suggests a conception of a child's development in which the development of language may be seen as a process intertwined with cognitive as well as social and even moral/

ethical development. Identity formation in this context would not mean, for example, consciously choosing a certain way of displaying oneself or assuming one identity before another. In line with their Hegelian tradition, Taylor and Honneth talk of identity as a fundamental ontological concept that has to do with my relation to myself and my world. This originally Hegelian conception of identity is linked to the classical German idealistic tradition and sees the ability to use language and have lingual interaction with others as a prerequisite for the formation of an identity.

This would suggest that understanding and assessing someone's language is a much more complex task than understanding and assessing someone's ability to hear. It would also suggest that assessing a child's language through research should include other elements than the mere checking of whether the child masters the formal (e.g. grammatical and syntactic) rules of a language. It would – as argued in Part 1 on the basis of a formal analysis – be even more important to study how the child manages to *use* his or her language, thus complying with the other (more complex) rules described previously.

Methodologically, studying these latter phenomena would thus probably involve a more hermeneutic and qualitative, rather than quantitative, research approach. Moreover, it would seem natural to attempt the application of established methods in disciplines like applied linguistics, for example, dialogue analysis and observations of dialogue interaction (Linell and Gustavsson 1987).

Recent studies in the fields of educational sciences as well as applied linguistics also imply that adults play a less significant role than previously thought when it comes to how children learn and use a language; interacting with peers is probably of far greater importance (Matre 1997; Bagwell 2005). This is of course only one aspect among many that might influence a child's acquisition of a language. However, the relation between peers encountering each other on an even foot enables children to explore together the myriad ways to use a language in a unique manner. Dialogues between adults and children rarely have this complexity. Adults often address children in a plain and communicatively straightforward manner, while children often address each other in an ambiguous and more complex way (Frønes 1998). This would suggest that a research project investigating implanted children's language should probably pay at least as much attention to the child's peer dialogues as his or her dialogues with adults. This would also suggest that research assessing a child's language only by analyzing the child's performance in adult conversations could be seriously criticized. The same goes for research in which the child's language performance is reported by adult proxies (e.g., the child's parents or teachers).

To sum up, what we might need in order to move the bioethical discourse on paediatric cochlear implantation forward is qualitative research, including implanted children and conducted on site in natural settings, preferably in places where the child interacts mainly with peers.

Part 3. A case report from a pilot study

As the author started working with the bioethical discourse on cochlear implants in 2004, he knew of only four studies that tried to assess implanted children's language (Bat-Chava and Deignan 2001; Martin and Bat-Chava 2003; Hjulstad, Kristoffersen, and Simonsen 2002; Preisler, Tvingstedt, and Ahlstrom 2002) and only two of these studies (Hjulstad, Kristoffersen, and Simonsen 2002; Preisler, Tvingstedt, and Ahlstrom 2002) met most of the requirements indicated previously. Together with

two colleagues – one of whom worked with applied linguistics and the other with sign language – the author led a small pilot study of two implanted boys in order to test one possible method that could offer some answers to the empirical research question: ‘How do two deaf children with cochlear implants interact lingually with peers and adults in their everyday life at school?’.

A brief summary of the study (Kermit, Holm and Mjoen 2005)³ is offered here as the results – though very limited in scale – support the notion that there might be several bioethical aspects to discuss about paediatric cochlear implantation if we could gain more knowledge of how implanted children can be expected to perform lingually in their everyday life.

In order to answer the empirical research question, we designed a qualitative study using an ethnographic approach (Creswell 1998) with participant observation. Our objective was the foregrounding of communicative practices (Mol 2002a,b) and the close mapping of patterns of communication whereby the implanted children interacted with peers and adults in school settings. Data were to be collected by means of both observation and video and audio recordings. These recordings were included as we wanted to conduct a linguistic analysis (Linell and Gustavsson 1987) of the observed dialogues.

Two boys – designated ‘Peter’ and ‘John’ – who were between seven and nine years old, were strategically selected for participation. Both boys had received their single implant later in life (both were more than three years old) than is typically the case for most deaf children in Norway today. John had received his implant later than Peter. Both Peter and John were taught according to the bilingual approach asserted in the Norwegian Educational Act (Kunnskapsdepartementet 1998). Peter’s dominant language was Norwegian Sign Language, John’s dominant language was spoken Norwegian. Peter’s clinical test scores indicated that he benefited to a moderate extent from his implant. In order to provide him with optimal learning conditions, his parents had decided he should attend a deaf school. At the deaf school Peter was a full-time signer in Norwegian Sign Language. John attended his local mainstream school and was reported to have benefited to a near maximum extent from his implant. This strategic selection of someone who was thought to have benefited considerably from his implant was important. As mentioned earlier, much of the bioethical discourse on cochlear implants is based on the implicit premise that implanted children who become hearing also enter the hearing world. It was thus methodically imperative to try to recruit a child who it was agreed had achieved the best possible hearing outcome from his implant. Recruiting a child with a less beneficial outcome would only have meant increasing the odds of a conclusion implying that the bioethical premise simply was invalid. John immediately confirmed his high implant outcome the first time the team met him. He spoke his local Norwegian dialect fluently and with a normal prosody: the team’s initial impression was that he seemed to understand everything that was said.

The design specified that the participant should be of early primary-school age as applied linguistic research (Matre 1997, 2000) suggests that this is an age at which children can be expected to have peer dialogues in which they use language in complex ways, for example by elaborating a theme together, negotiating, supporting or teasing each other. The two boys had a fairly similar family background with two parents and siblings, all hearing. (The design specified that the recruited participants should have average background.) As both boys were taught according to a bilingual approach, their parents followed week courses in Norwegian Sign Language provided

by The Norwegian National Support System for Special Education. By the time the child starts school, 16 weeks of the total 40 weeks parents are entitled to have are normally completed.

Based on the principle of exhaustive observation, the observation of the two boys lasted until the team assessed the likelihood of new observational elements to occur as small. The observations lasted for 12 hours in Peter's class and 17 hours in John's.

At the deaf school, Peter interacted constantly with his peers and the present adults. He was involved in a number of signed dialogues, both informal and formal. We translated, transcribed and analyzed two of his peer dialogues: an informal dialogue recorded during the student's lunch break and a semi-formal dialogue recorded as the students sat around a table and worked with an art project.

John interacted on several occasions with hearing adults and took part in the formal classroom activities facilitated by the teachers, but he interacted very little with his peers. As the students in John's class were instructed on two occasions to cooperate in pairs on given assignments, we observed and recorded two situations in which John interacted over a period of time with hearing peers. These two situations were the only recorded instances of peer interaction during the period of observation that could be characterized as dialogues. They were thus transcribed and analyzed.

The analysis of the four chosen dialogues revealed that Peter's signed dialogues exhibited a wide range of semantic functions that one would expect among children (such as humour, teasing, bonding and investigating), that different themes were negotiated and developed between Peter and his dialogue partners and that Peter and his dialogue partners were on an even footing.

Our overall impression observing John and his peers on site while they carried out the two dialogues was that he mastered the situation and got along fairly well with his peers. The dialogue analysis confirmed that John said something nearly as often as his peers did, but apart from this, the dialogues were characterized by a very limited use of pragmatic and semantic functions. Almost half the initiatives taken in the two dialogues received no response at all. When the children managed to grab hold of a theme they would mostly let go of it after only a few exchanges. This pattern resulted in many inconsistencies and did not allow the dialogue partners to explore and develop a theme together.

It was evident that John did not always make out what was said (especially when there was a lot of background noise), and consequently he failed to respond adequately to roughly one-third of the initiatives taken by his peers. John's dialogue partners on the other hand, failed to respond to all but one of John's initiatives. This was surprising because John's dialogue partners had normal hearing. Even though John contributed to the dialogues, and took the initiative several times, his contributions were not recognized or reflected in the pattern of the dialogue. Our assessment was thus that the dialogues were asymmetrical and that John was not given the opportunity to contribute to the conversation on an equal level.

Further analysis of the dialogues revealed something that might explain this discrepancy between our initial impressions as observers and subsequent investigation. John used different techniques to hide his lack of comprehension from his dialogue partners and he concealed his lack of peer interaction from the adults around him. When interacting with adults John did demonstrate pragmatic skills and dialogue competence. When interacting with hearing peers, however, John seemed unable to exercise these skills he possessed.

Discussion

As stated previously, the presentation of the pilot study is offered here as an example of a methodological design modelled according to the theoretical specifications presented earlier, whereby the results may support to a certain extent the notion that there might be several bioethical aspects to discuss in relation to paediatric cochlear implantation if we could gain more knowledge of how implanted children can be expected to perform lingually in their everyday life. The results also correspond with the two similar studies mentioned earlier (Hjulstad, Kristoffersen, and Simonsen 2002; Preisler, Tvingstedt, and Ahlstrom 2002.) Having said this, a pilot study normally serves as a trial preceding larger studies, and one should, therefore, be careful not to draw any conclusions or even make statements based on the limited number of cases included. A pilot study might, however, also serve as a basis for the formulation of questions which would influence the research question for studies to follow. In this respect, the pilot study supports the relevance of asking questions addressing qualitative aspects of implanted children's daily life and use of language. If the study presented here raises different bioethical issues, it would also be sensible to take these issues into account, but even more important to evaluate is their probability, limitations and reasonableness in relation to the method that brought them to light.

The discussion here thus falls into two parts: first, the necessary evaluation of the suggested methodical approach (also the theoretical suggestions in the earlier analysis in light of the actual design of the present pilot study); and secondly, based on an understanding of the methodical limitations, one can discuss what bioethical aspects of cochlear implantation the pilot study suggests (not asserts) the existence of.

Questioning the suggested empirical approach

The price paid for the foregrounding of communicative practices in the presented study is the price all qualitative studies have to pay – one cannot single out causal relations and answer questions about *why*, at least not with the kind of certainty many quantitatively orientated methods claim to offer (Mol 2002a, 2002b; Creswell 1998). In other words, it is not possible to say with certainty whether John, for instance, had problems talking with his peers mainly for reasons related to his implantation or simply because he was one of those children who struggle with peer interaction for a number of other reasons. The study was qualitatively designed according to the nature of the research question at hand (see earlier), and the ambition was to engage in the hermeneutic process of interpreting meaningful phenomena, so this inability to identify exact causal relations is not in itself methodologically problematic as long as one refrains from making unsupported claims based on the material at hand.

The methodological advantage of qualitative research rests, on the other hand, in the ability not only to investigate predefined aspects of a phenomenon, but – as new pieces of information change our initial conceptions – to identify and be receptive to all kinds of aspects related to the phenomenon – in this case that of communicative practices in which cochlear implanted children participated. Such aspects were identified through the observation and especially through the linguistic analysis of recorded and transcribed dialogues. Both provided insight into aspects (some of them discussed in the next pragraph) which might be relevant to the bioethical debate, and

which have not been prominent in discussions so far. Given the small scale of the pilot study and the qualitative approach one cannot suggest that these aspects can be generalized or asserted as relevant to similar cases. In the bioethical context of this paper one could, however, distinguish between, on one hand, the epistemological limitations of the empirical results of the present study and on the other hand, how even relatively unsupported notions still may constitute something relevant to a bioethical discussion.

As for the first, it is only natural that scientific results representing the many are accorded more significance than results that are limited to only a few. For the present pilot project it would thus seem reasonable to limit the interpretation and argue instead that tendencies discovered are sufficiently interesting to warrant further investigation in studies which include more children with cochlear implants. This in itself is a result, as the earlier theoretical analysis suggested that increasing such knowledge is important. That these tendencies might receive further confirmation in future qualitative studies, however, would not represent some kind of deductive proof for the reported arguments (following the basic logic that one cannot deduct from some observed cases to all possible cases) but rather a strengthened case for taking the perceived impressions seriously. This latter limitation applies to most qualitative research.

However, in the context of a bioethical discussion, it is not self-evident that the cautious reserve shown earlier for whether or not something might be a general aspect is absolutely necessary. An ethical problem involving a few people does not have to be proved a general problem involving many people in order to be significant, especially not if the problem identified can be said to be serious. Nor is it essential to know exactly what causes an ethical problem in order to acknowledge something as an ethical question. In this respect bioethics has a long tradition of treating even hypothetical ethical questions with great care as long as the questions are considered sufficiently important. In other words: the uncertainty relating to exact causes does not alter, for example, that there was something ethically disturbing in the way John failed to engage and be engaged in symmetrical peer interaction. But by no means does this imply that it would be uninteresting to carry out further research on whether or not what constitutes ethical aspects for one person might be applicable to more people. Such investigations may not strengthen or weaken how seriously we take that ethical aspect, however, but would still contribute to increasing our understanding of it and yield more information as to its dissemination. In this respect, the main conclusion is that more research is needed, but even the small pilot study might be relevant because it enables us to formulate some ethical *questions* (not assertions) that are not simply theoretical constructs, for which plausibility might be strengthened by the empirical data provided (in a bioethical context, this would resemble what philosopher Annemarie Mol has labelled 'empirical philosophy' [Mol 2002b].)

Suggesting some bioethical aspects related to cochlear implantation and language acquisition

The pilot study was designed to investigate how implanted children used language in everyday settings, and some obvious differences between the two boys were documented. Peter used his primary language much as applied linguistic research suggests can be expected of a child his age. Peter's bilingual capacities were not assessed as Peter was never observed using speech interacting with speaking peers.

This is not in itself problematic, but as mentioned in Part 1, research on bilingualism suggests that the acquisition of a second language becomes easier when the new language can be contrasted to the language the child knows. Empirical research on outcomes of bilingual education for children with cochlear implants (modelled according to the requirements outlined here) could hence be relevant to the bioethical discourse on implants. Here, however, the question of bilingualism falls outside the discussion as the results of the pilot study do not provide any insights on this matter.

John was perfectly able to use his primary language interacting with adults, something which is of great importance not least in an education setting. When speaking with hearing peers, however, John seemed unable to exercise the skills he possessed. His overall lingual interaction with his peers was very limited, and when he did have dialogue interaction, John and his peers did not use language in the variety of ways one could expect. On the contrary, the dialogues displayed many inconsistencies and communicative breakdowns when the children failed to respond to each other's initiatives.

Taking into account all the reservations discussed previously, these mere observational data might still have several implications on the bioethical discourse on cochlear implants. As both boys were implanted and following the same bilingual curriculum, the bioethical question (presented in the introduction) of whether or not to choose implant surgery is effectively contrasted. For Peter and John, it may be neither the surgery nor the apparatus itself which makes a difference in their lives, it might also be the choices made on their behalf *after* surgery that should be subjected to bioethical analysis. Even though, for example, a question of the political recognition of Deaf people admittedly could address the surgical practice of implantation directly, in Peter's case, the fact that he has an implant does not seem to stand in his way if he wants to enter a signing community. This political aspect of how signing people are recognized might, however, seem less important than the lingual aspects of being allowed to sign with others. For Peter, signing is probably not a political question, at least not yet. Together with his signing peers Peter does what children usually do in their daily lives without restriction or communicative barriers, and Peter is a member in a group of equals. This in itself may be of bioethical significance, especially when we compare Peter with John.

Applying Axel Honneth's concept of *recognition in a community of value* (Honneth 1995, 2000), the kind of recognition that people (for example colleagues who do not necessarily consider each other as friends) give and receive through acts that certify solidarity and equality, it is well within the empirical results as well as the limits for a defensible hermeneutical interpretation to state that John received very little such recognition from his peers. Not only did they rarely make spontaneous contact with him during the observational period, in the recorded dialogues in which they were instructed to cooperate, only one of John's many initiatives was given a reply. This represents an ethical problem in John's case, and as such it is noteworthy whether or not it represents a problem that more implanted children experience (something the pilot study can neither determine nor suggest).

If this lack of recognition is something John experiences regularly (something which the study cannot assert even though the observation was assessed as exhausted), according to Axel Honneth, this could affect his formation of identity, above all his self-esteem (which Honneth [2000] links in particular to solidarity) and the according notion of authenticity.

As the methodological discussion concludes, we cannot answer the question *why* John was not recognized by his peers. Still, also in accordance with the methodological discussion, the possibility of suggesting some plausible hypothetical questions implying different types of causality is not precluded.

For example, as John was the only child in his class with a cochlear implant, could it be that his peers had started to attribute to him the social stigmas of being 'different' (Goffman 1968), a less valuable 'other' (Beauvoir 1961)? Could it be that John's classmates somehow had taken hold of the notion that they did not have to treat him (or recognize him) as they otherwise treated each other? Stories told by hard-of-hearing adults who went to mainstream schools testify to these feelings of alienation and inferiority (Kermit 2006; Brunnberg 2003). The notion that John might have experiences similar to those of previous generations of hard-of-hearing students (before cochlear implants became available) is therefore not an unreasonable one.

If this is the case (something we cannot assert but only propose hypothetically), the efforts of creating an inclusive school might also represent a challenge of ethical proportions both for the adult teachers and for the whole class. Here, it is a discovery in its own right that the full extension of John's shortcomings was not noted during the observational period. Only after the detailed process of transcribing and analyzing John's dialogues was something otherwise well-hidden revealed. This implies that one should be careful as an adult to make assessments as to whether or not an inclusive setting is functional, if the assessment is based only on what the adult 'sees' from his or her viewpoint as a part in the setting.

There is, however, another plausible question that addresses the lingual aspect central to this text more directly. If we presume that the observed pattern is representative for John's daily life, is it possible that John earlier missed and still misses the opportunity to learn the complex rules that govern the use of language among peers of his age, and has only learned the – relatively speaking – less complex rules that govern the use of language between a child and an adult? Again, it must be emphasized that asking in this manner goes beyond both the applied method and present data in terms of possible certification. One would have to investigate closely a number of possible variables such as earlier development, cognitive factors, socio-economic factors, gender differences, and not least, multiple peer dialogues and still it would be difficult to draw clear conclusions simply because we generally know very little about the way children interact through language (Matre 1997, 2000). As pointed out earlier, it is nonetheless possible to ask, and there are results in the present study that could support the plausibility of the previous question: John was capable of using language in adult interaction, yet he rather effectively concealed his lack of peer interaction from the adults around him. If there exists such a causal relation as the previous question implies, the hermeneutical interpretation of the results in the pilot study combined with Honneth's notion of recognition could suggest (as a hypothesis) the existence of the following circular pattern: John, relying on speech and hearing training conducted by adults, finds himself able to speak with adults and experience the adults' recognition in this interaction. The adults surrounding John on the other hand expect him to – or maybe even think they see him – interact with his peers in the same effective manner that they experience. When John discovers that his abilities fail to secure a symmetric relation of mutual recognition with peers, he turns back to the adults he knows will recognize him, thus further lessening the chances for learning to interact with peers. If this is the case, it

suggests an ethical problem that also touches on the question of identity formation. Perhaps John takes full responsibility for his lack of ability to interact with peers in order not to lose the adult's recognition. He may not want to risk losing his relation with the adults, even though this relation will never be a symmetrical one, nor is it likely to be as significant a relation for his identity formation as symmetrical peer relations probably would be.

Concluding remarks

It should be noted that even though the discussion's second part has primarily posed examples of bioethical questions concerning the child who used spoken language, the text has not supported the simplified notion that because Peter seemed to be better off, his position is preferable to John's.⁴ The questions suggested here – as well as their bioethical implications with respect to aspects of recognition particularly – are only offered as arguably plausible examples (and possibly more could have been asked). As examples which have an epistemological basis in empirical research (though very limited), they might strengthen this paper's primary conclusion which was also indicated in the initial analysis; namely that there might be several bioethical aspects to discuss in relation to paediatric cochlear implantation if we could gain more knowledge of how implanted children can be expected to perform lingually in their everyday life, aspects that have not been prominent in the ongoing discourse. Such empirical knowledge might thus move the discourse on paediatric cochlear implantation from being a mere theoretical discussion trying to reach universal decisions to being more in line with matters concerning the complex ultimate end of implantation – implanted children's lives.

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Notes

1. This distinction between, for example, grammatical rules and rules governing the successful use of language is a topic in Part 2 of this text.
2. Even though the difference is far from clear, I follow the custom of differentiating between the medical condition of being *deaf* (which is written with a lowercase 'd') and being a member of a signing community (in which case *Deaf* is written with a capital 'D') (Woodward 1972; Markowicz and Woodward 1978; Padden and Humphries 1988).
3. The pilot study report was published in Norwegian. The presentation here is limited to a brief outline of the study with only a few details. I am thus happy to answer all enquiries and provide more details from the pilot study on demand.
4. Peter's situation might also be questioned and contrasted with aspects of identity formation, even though he seems better off when it comes to natural language acquisition and social development. Unlike former generations of deaf children, Peter was not in the deaf school simply because he was deaf. He was also in the deaf school because the outcome of his implant was judged to be only 'moderate'. This brings up the question of tacit normative

expectations which surround and have an impact on any implanted child. Even though little is known about what factors (technical, physical, cognitive and factors related to motivation and the habilitation process) might secure a high outcome result for an implanted child (Thoutenhoofd et al. 2005), the question of why it did not work out will always remain when the outcome is less than optimal. If Peter should ever become aware that he went to a deaf school because the outcome of his implantation was considered less than optimal, it is possible that he might begin to think of himself as someone who didn't achieve the best possible results and thus had to make do with the lesser of two educational alternatives.

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