

Return to the womb: Ultrasound technology and psychoanalytic observation, 1985–2016

History of the Human Sciences

1–24

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DOI: 10.1177/09526951261449989

journals.sagepub.com/home/hhs**Emilia Halton-Hernandez**¹ 

Abstract

This article explores the research method of psychoanalytic ultrasound observation, which first emerged in the 1980s as a means for learning about foetal personality. Marking a significant shift in psychoanalysis's engagement with technologies of observation and methods for gaining knowledge about prenatal life, this article examines some of the complexities involved in doing such work. The findings indicate that in the first phase of this type of studies, the researcher's fantasies and projections profoundly shaped notions of foetal personality and subjectivity more generally. The second phase of this kind of studies provides a more nuanced perspective on the limits of knowing the foetal subject, using psychoanalytic thinking to reflect on the unconscious processes involved in the act of ultrasound observation. In sum, these studies can help us confront the limits of psychoanalytic knowledge about prenatal life, as well as offering a helpful intervention on the ethics of observation and the problematic notion of "foetal personhood."

Keywords

Alessandra Piontelli, foetus, infant observation, obstetric ultrasound, psychoanalysis

Since the advent of Esther Bick's pioneering method of infant observation in 1948, observing and assessing the quality of relationships between infants and caregivers, and its role in human development, have been integral to psychoanalytic training and

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theory-building. The year 1948 was also significant in the development of another important observational method: the first documented use of ultrasound in medical diagnostics, employed by American physician George Ludwig to detect gallstones. As ultrasound technology became the universal standard in obstetric medicine in the 1980s, a new point of convergence between psychoanalytic observation and sonography emerged in the form of what I am terming “psychoanalytic ultrasound observation.” Promising unprecedented access to foetal life, to date, there have been four such studies. The first phase of this type of studies comprises Romana Negri’s 1985 “Personalità, memoria fetale e psicopatologia precoce” (“Personality, Fetal Memory, and Early Psychopathology”; 2009) and Alessandra Piontelli’s *From Fetus to Child: An Observational and Psychoanalytic Study* (1992). The second phase of this type of studies emerged in the 2010s with Nara Amelia Caron and Rita Sobreira Lopes’s *Learning About Human Nature and Analytic Technique From Mothers and Babies* (2016), and François Farges, Nicole Farges, and Sylvain Missonnier’s “L’observation échographique prénatale: Vers une clinique du fœtus?” (“Prenatal Ultrasound Observation: Towards a Clinical Approach to the Foetus?”; 2016).

These studies warrant our attention for how they marked an important shift in the history of psychoanalytic epistemology. As a form of psychoanalytic observation mediated by ultrasound technology, what kind of psychoanalytic knowledge does this method and case study produce? As shall be explored, all four studies demonstrate how, to some degree, this form of observation can tell us something about the continuities and discontinuities of intra- and outer-uterine life. This article also seeks to critically examine how this form of observation, as mediated by ultrasound images and the role of the sonographer, shaped psychoanalytic understandings of the psyche and subjectivity in its most nascent form.

This article seeks to contribute to the recent visual turn in scholarship on the history of psychoanalysis, including this journal’s 2024 Special Issue “Film, Observation and the Mind,” edited by Bonnie Evans and Janet Harbord. Scholarship in this area has opened up new ways of thinking about the “relationship of film to observation and the mind” (Evans & Harbord, 2024, p. 182), and how visual methodologies such as documentary film have influenced psychoanalytic knowledge production and the development of psychoanalytic theory and practice in the 20th century (see e.g., Cartwright, 1995, 2004; Isserow, 2022; Joice, 2021, 2022; Rietmann, 2024; Weitzenkorn, 2020). Thanks to these studies, we now have a better understanding of the work and influence of the field’s various “ocularcentric psychoanalysts,” who most famously include René Spitz and his films *Grief, a Peril in Infancy* (1947) and *Psychogenic Disease in Infancy* (1952), and James Robertson and Joyce Robertson’s *A Two Year-Old Goes to Hospital* (1952). Isserow’s exploration of the use of documentary in psychoanalytic infant research helps us to consider the complex ways in which psychoanalytic practices of looking and representational aesthetics have constructed infant subjectivity on the screen (Isserow, 2022). As he notes, “the observational documentary filmmaker—and by extension the camera—not only makes theory-driven observations but also makes aesthetic decisions that contribute towards the development of knowledge of subjectivity” (Isserow, 2022, p. 544).

Bearing these insights in mind, this article seeks to examine the development of knowledge about foetal subjectivity through the method of psychoanalytic ultrasound

observation. Psychoanalysis has a long history of thinking and theorising about prenatal life and the earliest development of the mind via a range of different methods. In order to understand the emergence of psychoanalytic ultrasound observation and its particular historical context, the prenatal theme in psychoanalytic literature will first be reviewed. Critical approaches to ultrasound as a mode for viewing, and indeed constructing subjectivity, will then be introduced, followed by an analysis of the first and second phases of psychoanalytic ultrasound studies. This article proposes that the search for psychoanalytic knowledge in the tenebrous images of sonography is by no means an uncomplicated task, raising for historians of the “psy” disciplines a number of important questions about the intersection of this technology and psychoanalytic observation.

Psychoanalytic approaches to prenatal life

As early as 1913, Hungarian psychoanalyst Sándor Ferenczi questioned our narrow parameters for understanding the beginnings of mental life, stating how “it would be foolish to believe that the mind begins to function only at the moment of birth” (Ferenczi, 1913/1950, p. 219). His words would later be echoed in Sigmund Freud’s statement from 1926 that there is “much more continuity between intra-uterine life and earliest infancy than the impressive caesura of the act of birth would have us believe” (Freud, 1926/1977, p. 138). This conviction in foetal mental functioning continued to occupy thinkers throughout the subsequent development of psychoanalysis. The techniques and tools for gaining knowledge about the foetal mind remained, however, squarely in the treatment and observation of postnatal children and adults. As shall be explored, prior to the 1980s, theories on the prenatal mind relied upon existing sites for psychoanalytic epistemology—the interpretation of transference, dream analysis, patients’ psychical regressions, hypotheses derived from infant observation, and some more unorthodox techniques such as psychedelic psychotherapy and literary speculation.

The phenomenon of transference, that central site where the analyst obtains knowledge of the patient’s projections and internal object relations, was from early on in psychoanalytic thinking considered a point of insight into prenatal experience. In his book *The Trauma of Birth*, Otto Rank understood certain manifestations of transference as reproducing something of the “physiological connection” between mother and foetus (Rank, 1924/1999, p. 6). Focusing primarily on the first trauma of life—the rupture that birth represents—Rank traced patients’ free associations to the symbolism of this event. For Rank, the birth experience is the single most important structuring event for the child’s psyche and fantasy life. Later psychoanalysts have given more importance to earlier, pre-birth experiences. James Grotstein, according to Phillippe Ploye, could “be said to have given us almost explicit descriptions of the overlap of foetal mechanisms into early postnatal forms of transference” (Ploye, 2006, p. 20). He identified a “parasitism” in certain patients, born out of a “primary identificatory oneness” and psychic “unbornness” (Grotstein, 1978, as cited in Ploye, 2006, p. 20). This could be identified as transference in how the patient would use the analyst as a womb-like space, regressing to a prenatal-like state of mind.

Similar to these earlier analysts, psychoanalyst and child paediatrician Donald Woods Winnicott also wrote about the indelible mark of birth memories in several of his clinical

case studies (1954, 1949/1958). Winnicott, however, differed in that he rejected the idea of a universal birth trauma. He also observed that birth memories were reenacted by both child and adult patients in more tangible ways than Rank had suggested, often through physical reenactments of the birth experience within the analytic session. For example, in his chapter “Birth Memories, Birth Trauma and Anxiety” in *Through Paediatrics to Psychoanalysis: Collected Papers*, Winnicott described the case of a 5-year-old boy patient who would repeatedly climb into Winnicott’s coat and then slide down his trousers onto the ground (Winnicott, 1949/1958). Winnicott interpreted this play as a regression to the birth scene, and postnatal psychosomatic symptoms such as headaches and problems around breathing were speculated to be possible consequences of a difficult birth experience (Winnicott, 1949/1958, pp. 174–193). In his 1954 paper “Mind and Its Relation to the Psyche-Soma,” Winnicott describes another patient who suffered from suicidal inclinations since childhood (Winnicott, 1954, p. 205). Through the course of the analysis, Winnicott comes to feel that the patient must make a “very severe regression or else give up the struggle” (p. 205). The eventual regression would come to take the form of episodes in the analysis where the patient would throw herself off the couch and onto the floor. Winnicott understood these episodes as a regression to the birth process, which for this patient was a traumatic, existentially threatening experience. The event needed to be concretely reenacted and reexperienced, with the analyst as a containing presence for analytic progress to be made.

Dream analysis has also been employed as a way of reconstructing prenatal experience. Nandor Fodor’s *The Search for the Beloved: A Clinical Investigation of the Trauma of Birth and Pre-Natal Conditioning* (1949) examines how nightmares of suffocation and falling may provide evidence of real experiences in utero; and Ángel Garma’s later writings (1966, 1970) also explored how dream interpretation could help reveal certain experiences of the unborn.

Melanie Klein, through her pioneering psychoanalytic work with children and observation of infants from the 1920s to the 1950s, postulated the existence of a “rudimentary ego ... already at work in the foetus” (Klein, 1952/1975, p. 116). Some years later, Klein wrote that “how far [the prenatal state] is undisturbed must depend on the condition of the mother and possibly on certain unexplored factors in the unborn infant” (Klein, 1957, p. 179). In Klein’s schema, the foetus is by no means an inviolable entity: “unpleasant experiences” in utero, “together with the feeling of security in the womb” may precede and “foreshadow” the postnatal mechanisms of psychological splitting (e.g., the good breast vs. bad breast; 1957, p. 179). Klein’s influence is evident in Mahler et al.’s (1975) study *The Psychological Birth of the Human Infant: Symbiosis and Individuation* in its exploration of how prenatal modes of functioning persist in postnatal life and come to be expressed in transference manifestations.

A more unorthodox method for gaining knowledge on prenatal life can be found in the history of psychoanalysis and psychotherapy in the 1950s in the research of Frank Lake (1966), Athanasios Kafkalides (1995), and Stanislav Grof (1975), who independently experimented with hallucinogenic drugs (including LSD) to bring nascent prenatal and perinatal experiences into consciousness (Grof, 1975; Kafkalides, 1995). As a front-runner of psychedelic psychotherapy, Grof’s LSD psychotherapy sessions led him to

develop a theoretical model called the Basic Perinatal Matrices. The model classifies and describes four distinct stages of birth that give rise to four different types of psychic experiences, which may be a source of traumatic or positive experience depending on the individual. Since the 1970s, beginning with Elizabeth Fehr's "natal therapy," various regression techniques have been developed as alternatives to hallucinogens for accessing and experiencing these birth-related emotions.

Following in the footsteps of Melanie Klein, British psychoanalyst Wilfred Bion made several influential contributions to psychoanalytic understandings of the prenatal mind. In his posthumously edited *Bion in New York and São Paulo* (1980), the author makes various references to prenatal life, considering it "reasonable to suppose" that the foetus and even the embryo possesses a "mind which one day could be described as highly intelligent" (Bion, 1980, p. 22). He also speculated about when the embryo could "be said to feel fear or aggression" (Bion, 1980, p. 78). Bion hypothesised that, for example, the processes of internalisation and projection had its origins within the womb. As Raphael-Leff notes, Bion's terminology for his model of "container-contained" to describe the maternal psychic function of containing the infant's emotions evokes the physical containment of the foetus in the womb (Raphael-Leff, 1990, p. 2). Bion also argued that embryological traces remain in the hypothalamic system and influence human experiences throughout the life course. These primal experiences, which were unprocessed and did not undergo mentalisation, arouse what he calls a "subthalamic dread," the earliest, most primitive form of fear that lies below consciousness (Bion, 1962, p. 13). In his paper "On a Quotation from Freud," Bion goes even further to suggest that the process of conception might leave its imprint on the psyche:

It seems to be that from a very early stage the relations between the germplasm and its environment operates. I don't see why it should not leave some kind of trace, even after "the impressive caesura of birth." After all, if anatomists can say that they detect a vestigial tail, if surgeons likewise say they can detect tumours which derive from the branchial cleft, then why should there not be what we would call mental vestiges, or archaic elements, which are operative in a way that is alarming and disturbing because it breaks through the beautiful, calm surface we ordinarily think of as rational, sane behavior? (Bion, 1976, p. 236)

In postulating such early origins of mental life back to the germplasm, Bion's view both chimed in with and informed perspectives on foetal development in the fields of prenatal and perinatal psychology in the latter half of the 20th century (Chamberlain, 1998; Lake, 1966; Verny, 1981).

In these writings, Bion's theorisations are primarily based on clinical evidence from his analytic work. Primitive states of mind conveyed by the patient in the transference are then deduced and interpreted by the analyst. However, Bion also employed another way through which to explore the emerging psyche of the unborn child. His speculations about the foetal mind were also developed in his semiautobiographical trilogy of novels *A Memoir of the Future* (1975), in which the foetus-like character Em-Mature (a play on immature) is a figure through which the author explores his speculative ideas about the beginnings of mental life (Bion, 1975). These explorations are based firmly on

imaginative conjecture, rather than clinical evidence or empirical observation. In a similar fashion, the psychoanalytic critic Meg Harris Williams, in her story “The Ugly Duckling,” imagines in narrative prose the emotions and thoughts of a recently born infant reflecting on its time in the womb and its birth experience (Harris Williams, 2014). I shall return later to these creative, poetic mediums for the exploration of the foetal subject, which provide an important, indeed necessary, counterpoint to more positivist approaches to knowledge in some psychoanalytic ultrasound observations.

Technologies of observation

As has been traced, prior to the 1980s, psychoanalysis employed various methods for analysing the child and adult mind for knowledge about prenatal experience. With the development and ubiquity of obstetrical ultrasound, psychoanalysis found itself with a new technology through which to observe the foetus more directly. Indeed, by the late 20th century, as psychoanalysis lost institutional and scientific ground to a psychiatry field increasingly oriented toward biological and imaging-based models of mind, ultrasound observation offered psychoanalysis a new and exciting biomedical arena in which to apply its interpretive apparatus.

Psychoanalytic ultrasound observation brought together two technologies for observation: (a) the obstetric ultrasound and (b) the technique of infant observation in the tradition of Esther Bick. To better understand this new method for comprehending prenatal life and the implications of the coming together of two distinct observational techniques, I will first provide a brief history of ultrasound imaging and psychoanalytic infant observation.

The visualisation of ultrasound echoes was first developed for the very different purpose of locating German U-boats by allied forces in World War II. The medical establishment, however, quickly recognised the potential of ultrasound imaging as a relatively noninvasive and safe diagnostic tool. By the late 1940s, the acoustics laboratory at the Massachusetts Institute of Technology was conducting medical ultrasound research funded by the U.S. Navy. Early experiments with ultrasound technology in Glasgow in 1956 saw obstetrician Ian Donald adapt industrial flaw detectors into prototypes for foetal observation, marking the first use of ultrasound for obstetric purposes (Campbell, 2013). By 1975, ultrasound was used in pregnancy to check the health of the baby and detect the presence of multiple fetuses. Ultrasound scans became widely used throughout British hospitals, and by the end of the 20th century, they were commonly employed throughout the rest of the developed world. At the turn of the 20th century, the newer technology of 3D ultrasound became more widespread. This newer iteration operates under essentially the same principles as its 2D forebearer, but instead of relying solely on data reflected from a transponder at a single angle, a transponder array collects data from multiple angles; a computer program then processes these data to generate a 3D image (Fraser, 2016, p. 70). Nowadays, 4D and 5D ultrasound scans are said to produce clearer and more detailed images; however, the quality of the images has not substantially improved and most medical providers continue to use 3D technology.

Infant observation was first introduced by Esther Bick in 1948 as part of the training course for child psychotherapists at the Tavistock Clinic in London, where trainees would

visit a family once a week for up to 1 hour during the first year of the child's life. Bick's influential paper "Notes on Infant Observation in Psycho-Analytic Training" (2011) set out her model of infant observation and how much it could reveal about the infant's emotional life, the quality of the mother–infant relationship, and its impact on the infant's development. Emphasising the importance of naturalistic observation, Donald Meltzer writes how infant observation "moved the methodology of psychoanalysis back into the realm of the natural sciences, where naming and describing serve the purpose of ordering man's picture of his world" (Meltzer, 1994, pp. xvii–xviii). Bick's conviction that observational evidence could provide insights into early functioning and form "part of the data of the analytic situation" that could be linked to later clinical experiences of adults and children was widely accepted and continues to be a key component of psychoanalytic and psychotherapy training (Bick, 2011, p. 115). Crucially, Bick's method distinguishes itself from more positivist philosophies of observation by requiring the observer to reflect on their own emotional responses to what is observed and their influence on the observational process. The observer also shares their observations with a seminar group, allowing for further discussion and self-reflection. Bick's observational method partly ventures into the prenatal period in the form of a preliminary interview that the observer conducts with the family during the mother's pregnancy. Bick considered this first interview important for establishing the contract between the observer and the family, ensuring all parties understood what the observation did or did not involve. Nevertheless, she cautioned against meeting more than once before the baby had been born to avoid the observer–parents relationship having too much relevance before the birth, and to "avoid a maternal transference and the phantasy of an observer/therapist more interested in the mother than the child" (Haag, 2002, p. 243).

Bick's method continues to be used in training for psychoanalysts and psychotherapists in the UK and has also gained traction worldwide, with the International Association for Infant Observation according to the Bick Method (AIDOB) bringing together training organisations and practitioners of the method across different countries. In Italy, where Negri and Piontelli were based, infant observation became established in the 1980s; in Brazil, where Caron and Lopes worked, it was established in 1987; and in France, where Farges et al. practised, in the late 1970s. All authors of psychoanalytic ultrasound studies were trained in Bick's methods as psychoanalysts, but importantly, they were also working in medical settings and/or had medical training (Negri and Piontelli as neuropsychiatrists; Caron and Lopes worked in an obstetric clinic; Farges et al. included a gynaecologist-obstetrician and a perinatal psychologist). We might then speculate about why psychoanalytic ultrasound observations appear to have developed exclusively in Italy, France, and Brazil. This may be partly explained by the different professional landscape in the UK, where lay psychoanalysts can train without a medical or psychology degree, and where psychoanalysis has historically remained more separate from the medical field. By contrast, in France, Italy, and Brazil, there has been a closer integration between psychoanalysis and medical methodologies. And while infant observation in the UK has largely remained embedded within the strictures of training contexts, in other countries, it seems there has been more appetite for challenging conventional boundaries and extending and adapting Bick's methods to other means.

The practical differences between ultrasound observation and Bick's infant observation are numerous. Infant observation occurs in the naturalistic setting of the infant's home, while ultrasound observation takes place in a controlled environment involving the sonographer, the ultrasound machine, and the hospital or clinical setting. Beyond these material differences, there is also a difference in ethos and aim in the act of looking. The ultrasound scan involves observing a foetus who cannot look back, and the attention to visual images on a screen. Importantly, these are images mediated both through the visual technology of the ultrasound and the directions and interpretations of the sonographer, who helps to make sense of what is seen for both the parent and the observer. These conditions are in many ways antithetical to Bick's principles of naturalistic infant observation, in which insight into the infant's states of mind comes from observing their relations to the mother, family, and observer.

To gain a deeper understanding of how the technology of ultrasound influences, limits, or expands a psychoanalytic observation and knowledge of the foetus, we must now take into consideration the rich and extensive scholarship on ultrasound as a technology that shapes our perspectives and epistemophilic fantasies.

Critiques of the sonographic view

As I have outlined earlier, visual media and technologies such as film, documentary, and medical scans have been analysed for the types of knowledge they generate about the human subject. Similarly, ultrasound technology, with its unique approach of "seeing with sound," offers a distinct technological perspective that must be carefully examined. The obstetric ultrasound image is characterised by grainy, noisy, black and white images that oscillate between abstraction and the representation of an emergent personhood. Indeed, its pervasive ubiquity has drawn critical analyses from voices in gender, cultural, and medical studies. As Barbara Duden writes in her seminal study *Disembodying Women: Perspectives on Pregnancy and the Unborn* (1993), with the rise of ultrasound:

The screen was so arranged that the pregnant woman could join her physician in real time to view the inside of her belly. She no longer had to rely on word of mouth or medical judgement to interiorize the emblem from the screen. With her own eyes, she could now pretend to see reality in the cloudy image derived from her insides. (Duden, 1993, pp. 77–78)

This claim to possess knowledge of reality aligns with concerns raised in many other critical studies of ultrasound, particularly in relation to how foetal visualisation through this technology has influenced societal perceptions of both foetus and mother. Ultrasound as a means for creating the notion of a foetal subject has been explored extensively, from Rosalind Pollack Petchesky's "fetishized fetus" onward (Petchesky, 1987, p. 269). In 2D imaging, Petchesky examines how the sonographer is framed as an almost omnipotent figure, being able to see everything within the uterus and the foetus, and examining the "baby" both inside and out to create a "panoptics of the womb" that produces a seductive fantasy of all-seeing and all-knowing (Petchesky, 1987, p. 277).

Lisa Mitchell and Eugenia Georges's 1997 cross-cultural study of Greek and Canadian women's discourses of foetal ultrasounds draws upon Donna Haraway's concept of the cyborg to think about the "cyborg fetus" as a subject that is technologically and culturally configured through sonographic practice and discourse. As their study found, "sonographers must translate not only the physics of echoes into the landmarks of the fetal body and maternal body but also the clinical and social meaning of those landmarks" to expectant parents (Mitchell & Georges, 1997, p. 375). Most ultrasound images are highly ambiguous and not immediately legible to the layperson. Indeed, our grasp of the foetus is mediated at several levels—by the sonographic technology, the sonographer's interpretation of these images, and the parents' own understanding. Mitchell and Georges observed that for the Canadian mothers in their study, foetal personhood was universally perceived through signs of physical normalcy and foetal gender. By contrast, the Greek mothers felt that ultrasound could not provide any suggestion as to foetal personality or subjectivity (Mitchell & Georges, 1997, p. 389). Ultimately, Mitchell and Georges demonstrate how "the cyborg fetus emerging from this technology says as much about the cultural and historical conditions of its production as it does about nature" (Mitchell & Georges, 1997, p. 397).

With the advent of 3D ultrasound, critical discussion has moved away from the sonographer's role as translator or interpreter to the ways in which 3D imaging is assumed to provide a more legible and accessible view into foetal reality for nonexperts. 3D imaging gives an "apparently photorealistic" window into the imagined foetal world (Fraser, 2016, p. 70). However, producing a realistic 3D image involves a certain degree of artistic liberty that is programmed into the machinic processes. To create the final image seen by human eyes, the computer program enhances it by adding visual cues such as shadows, "hot spots," and distinctions between the iris and sclera of the foetus's eyes, all of which make the image more relatable by increasing its similarity to the more developed human face (Fraser, 2016, p. 70). Accordingly, 3D imaging may diminish the role of the sonographer as visual decoder given that the creation of the foetal subject now occurs within the computer program itself—resulting in a seemingly more invisible construction, yet one that remains influential.

None of the four psychoanalytic ultrasound studies this article analyses specify which version of obstetric ultrasound technology was used. However, I think it is safe to assume that, given the ubiquity of 2D ultrasound in the 1980s and 1990s in Europe during which Negri's, Piontelli's, and Farges et al.'s studies were conducted, this was the technology employed. Although Caron and Lopes conducted their study in the 2010s during a time of technological advancement in ultrasound and availability of 3D sonography in Brazil, the role of the sonographer in interpreting the images in their accounts of observation is highly suggestive of 2D imaging. The authors directly reference the integral role of the sonographer in an observation, stating how their "ability to interpret the images using clear and objective explanations and according to the receptivity of each individual helped to ease the tension and soften any possible traumas when viewing the images of the baby" (Caron & Lopes, 2016, p. 33). Piontelli, as a trained physician as well as psychoanalyst, was the only researcher who on occasion conducted the ultrasound herself.

Even with the guidance and expertise of the sonographer, the foetal images produced by ultrasound are not always easily interpreted or understood by viewers. Caron and Lopes describe one father's "trouble seeing the images, that he now says are blurred. The mother is totally lost and asks about body parts" (Caron & Lopes, 2016, p. 111). A father in Piontelli's study incredulously tells the room, "You must all have a lot of imagination ... where can you see that? ... I can't see anything of what you are describing" (Piontelli, 1992, pp. 39–40). These admissions closely align with scholarly critiques regarding the limitations of visual representation in understanding the foetus, emphasising how ultrasound imaging is far from a neutral or universal window into foetal reality. The way these studies understand and address these epistemic limits lies at the core of what defines this particular method and case study, which will now be examined in greater detail.

First phase: Romana Negri and Alessandra Piontelli (1980s)

As the first two studies of their kind, Romana Negri's 1985 "Personalità, memoria fetale e psicopatologia precoce" ("Personality, Fetal Memory, and Early Psychopathology"; 2009) and Alessandra Piontelli's *From Fetus to Child: An Observational and Psychoanalytic Study* (1992) form the first phase of psychoanalytic ultrasound studies. Both psychoanalysts were working in Italy in the 1980s in private and medical settings, and both received supervision from Martha Harris, a well-known child psychotherapist and proponent of Bick's methods who taught and supervised widely in Italy.

Negri's and Piontelli's intellectual frameworks draw from the clinical observations of Bick, psychoanalytic theory (Freud, Klein, Winnicott, and Bion), and neonatal science (Brazelton, Prechtl). Piontelli also explicitly states the importance of ethology and anthropological methodologies to her work, teasing out for us the "thread of continuity [that] links the figures whom I regard as major inspirations for my work: from Freud to Klein to Bick and Bowlby; from Darwin and Preyer to Lorenz; from Lorenz to Bowlby; from Lorenz to Prechtl" (Piontelli, 1992, p. 94). Though Piontelli references the observations of René Spitz (1955, 1957, 1965), amongst others, as having made a fundamental contribution to our understanding of early infancy through observation, neither she nor Negri make any mention of the documentary film techniques developed by post-war child psychoanalysts and their relation to their own studies. Nevertheless, we might contextualise their work as another development in the use of visual technologies for psychoanalysis to generate new forms of evidence and modes of perception. Unlike the "cinematic micro-analysis" employed by Spitz and others (see Joice, 2021), which allowed recorded mother–infant interactions to be replayed, slowed down, and dissected into minute temporal units through film editing, frame rate, camera angles, and pauses, these psychoanalytic ultrasound observations involved a live, real-time encounter between mother, foetus, observer, and the sonographic image.

Negri's study details her findings based on ultrasound observations of three nonidentical twin fetuses beginning in 1985 at a hospital in Monza, Italy. She began with weekly observations from the 12th week of pregnancy, ending when the children were 2 years of age. Piontelli's book-length study—the most well-known and influential of all four

studies—was undertaken at a similar time, between 1985 and 1986 at the Clinica Mangiagalli in Milan, Italy. Although neither author references the other's work, it is reasonable to assume that given their shared connection to Martha Harris, they were likely aware of each other's work at the time. Piontelli observed four sets of twins and three singleton fetuses five or six times monthly from the 16th week of pregnancy, then weekly in the first year of life, monthly until the age of 2, and then two or three times a year until the age of 4 (Piontelli, 1992, p. 1). Postnatal observations took place in the child's home, as per Bick's method. Both Negri and Piontelli undertook these longitudinal prenatal and postnatal observations on their own, although Negri said she received supervision for these observations from psychoanalyst and husband of Martha Harris, Donald Meltzer.

At the heart of both these studies is a common interest in confirming and expanding Freud's hypothesis from 1925, from whom they both quote, about the very likely continuity of many aspects of prenatal and postnatal psychic life. Where they differ from Freud, of course, is in their use of obstetric sonography to evidence these prenatal and postnatal continuities. For Piontelli, ultrasound imaging offers psychoanalysis unparalleled access to prenatal life. In her foreword to Philippe Ploye's *The Prenatal Theme in Psychotherapy* (2006), which includes an extensive literature review of psychoanalytic understandings of prenatal life, Piontelli praises Ploye's review for its historical value, but affirms that

reading the work of all these thinkers makes one realize just how impossible it is to reconstruct prenatal life from transference, as the theories that emerge from the consulting-room are far-fetched and often unbalanced and have little to do with the reality of prenatal life. (Piontelli, 2006, p. x)

While Piontelli does not state it outright, her criticism of these speculative theories implicitly advocates for her own more empirical and evidence-based approach to knowledge. The power of ultrasound technology is further emphasised in Piontelli's statement that she undertook the study with no specific hypotheses, and that hypothesis formation when observing the fetuses rather than testing was her main aim (Piontelli, 1992). Accordingly, these sonographic observations are presented as providing unfettered access to evidence about foetal life that would otherwise remain unavailable.

What types of knowledge and insight about the foetus do these authors assert are generated or uncovered through these sonographic observational studies? Both Negri and Piontelli claim to illuminate the intricate interplay between the intrauterine environment and the foetus, the presence of multiple fetuses, and the emergence of early relational dynamics. Negri's observation of distinct behavioural patterns emerging in individual fetuses around the 17th to 18th week of pregnancy led her to formulate the concept of a "fetal personality" (Negri, 2009, p. 31). According to Negri, the foetus has a specific individual nature expressed not only at the motor level but more generally from a behavioural point of view. Piontelli also writes: "When I decided to study fetal life more closely, I knew of course that what I would observe would basically be motor and somatic manifestations" (Piontelli, 1992, p. 8). But as the observations progress, she is struck by

how much knowledge about the psyche can be gleaned from movement, gesture, and posture:

I realized almost immediately that my previous stereotyped vision of fetuses was changing into one of increasing differentiation and personalization. As my experience developed I was more and more struck by the individuality of movement of each fetus and by their preferred postures and reactions. I could no longer regard the fetuses I was watching as non-persons, as each of them seemed already to be an individual with its own personality, preferences, and reactions. (Piontelli, 1992, p. 9)

Postnatal observations reinforce for both Negri and Piontelli their notions of a foetal personality, confirming the “false caesura of birth” that Freud first suspected (Freud, 1926/1977, p. 138). Negri proposes the notion of “fetal memory” that is taken into postnatal life, her observations demonstrating how it is “evident that the specific way in which a child relates to space and interacts with the environment in postnatal life mirrors a pattern they experienced during fetal life” (Negri, 2009, p. 32). Similarly, Piontelli’s central finding is the “remarkable continuity in aspects of pre-natal and post-natal life” (Piontelli, 1992, p. 1). She finds that

Each fetus had characteristic ways of behaving which were to some extent and in some form or other continued in postnatal life. Such continuity occurred in spite of the vast changes of birth and the nature of the containing environment. (1992, p. 1)

For both Negri and Piontelli, then, ultrasound images provide a clear window into which a foetal subjectivity can be discerned, and through subsequent postnatal comparisons, proven to be true.

In her foreword to Piontelli’s book, Elizabeth Bott Spillius summarises some of the principal continuities Piontelli identifies in pre- and postnatal life:

The twins Marisa and Beatrice hit each other in the womb and continued to do so after birth as soon as their motor development allowed it. The twins Alice and Luca stroked each other in the womb through the dividing membrane, and at the age of one year a favourite game of theirs was to stroke each other from either side of a curtain. Marco, who buried his face in the placenta as if it were a pillow, four years later insisted that his mother get him a pencil case shaped like a pillow. Pina, the most adventurous fetus until a near miscarriage, showed a similar pattern after birth—great adventurousness soon followed by claustrophobia and near panic. (Bott Spillius, 1992, pp. x–xi)

Piontelli does recognise how in conducting all the prenatal and postnatal observations herself, confirmation bias might arise “due to preconceived expectations” (Piontelli, 1992, p. 13). However, she decides to continue with her approach because

Already during my preliminary exploratory observations ... as well as in my long experience with Infant Observation, I had noted how important it was for mothers not to feel that they

were just subjects of scientific inquiries or examination; they needed to be allowed to establish a “human” relationship with whoever was observing them too, and continuity was very important to them. (Piontelli, 1992, p. 13)

To give a fuller picture of Piontelli’s deductive logic, the case of Pina provides a detailed picture of an active foetus engaged in vigorous exploratory and pulling actions, to the point that the obstetrician was recorded as saying in a session that she was “trying to detach the placenta ... it’s the typical manoeuvre of manual detachment of the placenta ... but you be careful! Stop doing it! It is dangerous you know” (Piontelli, 1992, p. 103). Shortly after this observation, the placenta did indeed become detached, though Piontelli acknowledges, “We cannot of course know whether it was Pina’s vigorous exploratory and pulling actions that caused the detachment of the placenta” (p. 103). The detachment was potentially life-threatening, and Pina “certainly came close to being ‘washed away’ in a miscarriage” (p. 103). Once she was safely born, she seemed, “as the obstetrician put it, ‘greatly relieved to be out’” (p. 103). Her postnatal history followed a similar pattern, marked by intense activity and eager exploration, high intelligence, and the rapid, early achievement of developmental milestones. However, this was accompanied by numerous fears, including claustrophobic anxiety, eating difficulties, and issues with faecal retention (Piontelli, 1992). As a young child, Pina also displayed a clear apprehension about being dropped, which Piontelli links directly to the experience of the detachment of the placenta (Piontelli, 1992, pp. 103–104). Pina’s case is just one of many foetal portrayals in Piontelli’s study used to illuminate continuities in behaviour, personality, and pathology in pre- and postnatal life.

Throughout Piontelli’s study, the role of the sonographer and parents in the observational setting cannot be underestimated. As critiques of the “sonographic view” emphasise the role played by sonographer and parents in the co-construction of a foetal subjectivity, Piontelli’s study reveals the extent to which adult projections shape our understanding of the foetus. Piontelli herself makes the point that in the observation sessions “Everybody ascribed motives to the behaviour of each fetus, very much as is done with animals or with babies in ordinary life” (Piontelli, 1992, p. 9). Indeed, she describes the extent to which foetal movement would be interpreted for character:

All the observations were also interspersed with remarks like “he is a nervous type,” “this one will become a dancer,” “he is very calm,” “she is a sort of reflective type,” “she has a good character,” or “he is using the placenta as a pillow” or “look how badly he treats the cord.” All the observers seemed to take it for granted that some kind of motive could be ascribed to each single action of each single fetus and that one could also read from the different types of attitude and activity some indication of the child’s future temperament. More or less the same comments were repeated for each fetus each time. (Piontelli, 1992, pp. 9–10)

Piontelli acknowledges this tendency of all observers to “anthropomorphize” or “adultomorphize” the foetus (Piontelli, 1992, p. 10). Nevertheless, these shared characterisations are understood as an important source of knowledge about the foetus, which when backed

up by similar postnatal observations, provide insight into the earliest traces of personality (Piontelli, 1992, p. 10).

Given the crudeness of 2D ultrasound imaging and the inevitable limits to how much knowledge could be obtained about a nascent, developing organism, Piontelli's fetuses were understood broadly as types with generalised characteristics ("he is a nervous type," "she is a sort of reflective type," or "she has a good character"; Piontelli, 1992). Personhood at the foetal level is necessarily rudimentary and superficial. It is striking then that Piontelli's other subjects of study—the parents and children in her postnatal observations—are drawn in similarly broad strokes. Specifically, there seems to be something in the way that Piontelli constructs foetal personhood that leaks out into her constructions of human subjectivity more generally. Some of these characterisations, as we shall see, veer into an objectification rather than subjectivation of those she is observing, producing often troubling sexist depictions of mothers and female children in particular.

The following description of Gianni and his sister illustrates how Piontelli shifts from reading the foetus through its bodily representations to reading the postnatal child's appearance in a similarly superficial manner. She tells us how Gianni

seemed to do very little, still curled up as he was in a corner of the womb, mostly immobile and covering his face with his hands and his arms. His legs too were so tightly folded and crossed so as almost to cover his face. As the first obstetrician had remarked in the first scan, Gianni continued to be "not peaceful this one ... it is either restless or completely immobile." On the third observation (reported below), Mrs B came accompanied by Mavi, her seven-year-old daughter. Mavi is a rather unattractive child, she is quite fat and with none of her mother's pretty features. (Piontelli, 1992, p. 72)

In this strange manoeuvre, Mavi is subjected to a shallow, judgmental gaze. In other instances, Piontelli performs something close to a physiognomic or pathognomonic reading of family members, not dissimilar to the ways she interprets the fetuses' bodily movements on the screen. Instead of drawing a sufficient conclusion about Gianni's behaviour, which neither Piontelli nor the obstetrician seem to wholly confirm, the aesthetics of ultrasound imaging—a reliance on the visual and the observable—seem to inform a particularly superficial reading of human subjectivity.

Indeed, there is a fixation on appearances, particularly on female bodies and sexuality, that is pervasive throughout *From Fetus to Child*. In the following description, Piontelli reveals how much appearances might be judged and character be determined from them. A mother, Mrs. D, a woman in her mid-20s is described as

Rather tall and strongly built, she looked pale and plain, without a shadow of make-up or a hint of an even distant visit to the hairdresser, her clothes looked perhaps intentionally out of fashion and she conveyed an impression of inhibitions coupled with a kind of timeless respectability. She looked somehow like "the girl next-door" of the fifties, quite untouched by the sexual revolution of the sixties, or by the happenings and social movements of the seventies or eighties: the

typical image of the safe, good girl one marries as opposed to the woman one loves or has fun with. (Piontelli, 1992, p. 110)

As with the foetuses, we are dealing with types and stereotypes. Piontelli notes how “A bit of flirting, though, seemed to be not totally alien to Mrs D, and whenever a man was around she certainly forgot about me” (Piontelli, 1992, p. 110). Another mother, Mrs. B, is described as “heavily made up and is wearing a flowery silken blouse and a skirt with a deep vent” (Piontelli, 1992, p. 81). These mothers’ sexual desirability are their main defining characteristics. Another mother, Mrs. G, by contrast,

looked shabby and fat, her clothes were tatty, her legs hairy, and her hair unwashed, but she none the less constantly wore a superior look on her face, as if she were too busy and too pre-occupied with other much more important matters to indulge in such feminine trifles. I was told by Dr S that she worked as a social worker in a child guidance centre and was involved in a rather ambitious programme of child-rearing research. I was only too soon to find out what her rearing methods were like. (Piontelli, 1992, p. 160)

The reader is presented with a cast of apparently grotesque characters, Felliniesque at times in their repellent and abject bodily presence; Piontelli herself refers to one mother, Mrs. A, as “like a character out of a Fellini film” (Piontelli, 1992, p. 38). Indeed, these parental caricatures often overshadow the foetuses themselves, whose relatively thin characterisations pale in comparison.

Certainly, Piontelli’s characterisations reflect her own judgments and biases, as well as those of the sociocultural and historical milieu in which she was working. Indeed, Piontelli’s work was by no means unique in reflecting stereotyped ideas about personality in the 1980s and 1990s. Psychoanalytic literature of the time, particularly on women and motherhood, often relied on fixed or pathologising models, as seen in writings on borderline pathology and severe personality disorders (e.g., Kernberg, 1986; Masterson, 1988). Nevertheless, we might consider how conducting a psychoanalytic ultrasound observation might facilitate, or indeed incite, forms of imaginative conjecture around personality and personhood. The notion of ultrasound as an omniscient window into foetal life can prove seductive. And yet Piontelli’s work provides an example of how the inevitable limitations of attempting to understand the human subject through observation—whether as a foetus or an adult—can create gaps in that understanding that, if not reflected upon, can be filled with various cultural scripts, values, and assumptions. Femininity, female sexuality, and maternity in particular emerge as prime sites for Piontelli’s projections and splitting. In such instances, Piontelli’s own subjectivity overshadows those of her subjects. As I have briefly outlined, infant observation in Bick’s tradition embeds reflexivity in its understanding of the role of the observer and the limits of objective observation in its methods, from the importance attributed to the observer’s subjectivity in the observation setting to the role played by the seminar leader and group in helping the observer to consider their subjective stance. This method of observation sits quite apart from the biomedical use of ultrasound observation in obstetrics to assess foetal health. As Caron and Lopes point out, Piontelli’s methods deviate significantly from Bick’s observational

practices and ethos, despite Piontelli stating that, in her study, she “wanted to extend the method of Infant Observation to life before birth” (Caron & Lopes, 2016, p. 8). By contrast, Caron and Lopes tell us how, in their study,

Although inspired by Piontelli’s (1995) work, we sought to counteract some of the methodological limitations we observed in her study. Piontelli had conducted all the stages of the study herself, personally observing all the fetuses without any participation from other observers and without any group discussions of the written reports, which are one of the pillars of the method. In some cases, she even conducted the obstetric ultrasound herself. (Caron & Lopes, 2016, pp. 40–41)

As we will see, in the second phase of this type of observations there is a much stronger focus on reflecting on the fantasies/phantasies that may emerge when observing the foetus, and on the limits of observational knowledge, compared to the foundational yet problematic work of Negri and, especially, Piontelli.

Second phase: Farges, Caron and Lopes (2010s)

François Farges, Nicole Farges, and Sylvain Missonnier’s “L’observation échographique prénatale: Vers une clinique du fœtus?” (“Prenatal Ultrasound Observation: Towards a Clinical Approach to the Foetus?”; 2016) builds upon the pioneering work of Piontelli and Negri, focusing specifically on observing twins in the womb. Initiated in 1990, their research was conducted as a group and centred on three main areas of inquiry. Through “observation of interactions between twins,” they explore “the concept of a proto-object an earlier ‘psychic birth’ in twins” (Farges et al., 2016, p. 214). Their observations began earlier than Negri’s and Piontelli’s, from the 13th to the 24th week of pregnancy, noting that before 13 weeks of gestation, twins seem to ignore each other in the womb (Farges et al., 2016, p. 215). Like Piontelli and Negri, they are interested in the “potential continuum between observed behaviours in utero and after birth” (Farges et al., 2016, p. 214, my translation); however, they do not continue the observations into postnatal life. It is perhaps this singular focus on the gestational period that shifts their attention and findings less to the search for a continuous personhood in pre- and postnatal life and more to an exploration of “parental capacities for reverie” and the role played by ultrasound imaging on the psychic, phantasy life of the parents (Farges et al., 2016, p. 41).

Nara Amelia Caron and Rita Sobreira Lopes’s 2016 *Learning About Human Nature and Analytic Technique From Mothers and Babies* pays its dues to Piontelli’s “pioneering work,” but makes a point of following more “faithfully” Bick’s original method for observation (Caron & Lopes, 2016, p. 40). Caron and Lopes utilised two independent teams of observers and supervisors, with one team conducting the prenatal observation, and another team, the postnatal stage until the child’s third birthday (p. 41). To avoid bias, the teams did not exchange information until the end of the study in order to prevent the postnatal observers from entering the observations with any preconceived notions or a priori hypotheses (p. 41).

As might be expected from a second generation of researchers, both studies display an increased critical awareness of the limitations of this observational method and the

conclusions derived from it. Caron and Lopes, in contrast to Piontelli, found many “natural discontinuities in development” between pre- and postnatal life (Caron & Lopes, 2016, p. 242). This led them to “abandon previous hypotheses about continuities between the pre- and post-delivery period that had been based exclusively on foetal movements, as in Piontelli’s pioneering work” (p. 242). Although they do find that two twins named Anahi and Raoni displayed intrauterine movements that were then repeated after birth, leading them to be seen like “old acquaintances to the observers” (Caron & Lopes, 2016, p. 243), the authors express some reticence about leaning too heavily upon the ultrasonic images to draw firm conclusions. They tell us that they are left with “hypotheses and images ... [and that] it would be almost fatal to try to confirm them in the next phase. We would run the risk of creating a false continuity” (Caron & Lopes, 2016, p. 244). As the book’s title suggests, *Learning About Human Nature and Analytic Technique From Mothers and Babies* is less concerned with building a picture of the foetal subject and more with observing and learning from the experiences of four sets of mothers and babies from pregnancy through to birth, and the child up to its third year.

And whilst Farges et al.’s (2016) findings support the plausibility of discussing proto-sensory experiences as observed in the interactions between the foetus and the uterine environment, they make clear how “this ‘spectacle’ of a highly active foetal life that presents itself to us” through ultrasound imaging “should not lead to hasty interpretations” about the concept of a “prenatal self” (Farges et al., 2016, p. 218). In relation to drawing definitive conclusions about the characters of foetal twins, they caution:

The differences in behavior of each twin are evident in ultrasound observations. However, it is not easy to claim that the mode of interaction is always the same within the pair: active/passive, curious/withdrawn, attacker/defender. There is considerable variability during pregnancy. This implies great caution in making connections with postnatal observations. (Farges et al., 2016, p. 218)

Indeed, this recognition of the “spectacle” produced by ultrasound images is taken up in the authors’ interest and exploration of the various *f*/phantasies that might be evoked in the parents, sonographers, and observers when returning to the womb. Bearing in mind how for millennia the foetus eluded observation, a “confrontation with images of the fetal condition” born out of sonography can provoke “discomfort, anxiety, and sometimes even astonishment ... when the observer dares to cross ‘the cervix,’ a perilous passage if there ever was one” (Farges et al., 2016, p. 203). They understand the sonographic “window” as potentially invoking an “archaic fantasy of returning to the maternal womb” (Farges et al., 2016, p. 220), which might evoke conflicted feelings in the parents, sonographer, and observer. The authors’ recognition of the emotionally transgressive nature of ultrasound observation provides, in my view, a valuable contribution to existing literature on the psychodynamics of obstetric ultrasound.

In one striking anecdote, the authors describe a situation that arose at a symposium hosted by perinatologists and psychoanalysts in Cerisy, France in 2015. A conversation between a sonographer and parents was screened alongside footage from the ultrasound in which, according to the doctor, “fetal life [that] was ‘clear as day’” (Farges et al., 2016,

p. 204). Farges et al. describe the reaction to the film as emotionally charged and mostly negative:

The silence that followed the screening, the astonishment, and the drowsiness of some conveyed better than words the surprise and anxiety generated by the “uncanny strangeness” of the scene (Freud, 1919) ... Once speech was regained, remarks were few, mostly negative, even aggressive regarding this type of practice, and ultimately proportional to the collective transgression that had just taken place. (Farges et al., 2016, p. 203)

They interpret this reaction as part of the resistances inherent to foetal observation, noting the fundamentally “voyeuristic” act involved in observing the foetus, for unlike postnatal infant observation, the foetus cannot distinctly see or hear the observer and, importantly, it cannot look back. As they elaborate, “the scopic drive to see without being seen is invoked by the ‘spectacle’ of a forbidden inner realm displayed on the screen. The anxiety-inducing and guilty threat of a ‘voyeuristic’ sensation can emerge in the viewer” (Farges et al., 2016, p. 206).

The unconscious emotions that may be stirred up in the parent, sonographer, and observer are, I believe, crucial to consider in any form of obstetric ultrasound. Farges et al. suggest that paying attention to these unconscious projections from parent and sonographer might aid us in understanding “the process of generating parenthood, embracing the metabolization of its initiatory violence, and the humanization of the unborn child,” along with initiating “an invitation to interdisciplinary reflexivity for sonographers regarding the psychological, ethical, and political components of prenatal diagnosis” (Farges et al., 2016, p. 220). In other words, if the ultrasound technician remains attuned to the psychological and pathological implications of the subtle emotions evoked by ultrasound immersion, the ultrasound encounter can become a supportive and constructive space for the primary and secondary prevention of early parental disturbances (Farges et al., 2016, p. 205). These findings are also supported in the wider psychoanalytic literature. Brazelton and Cramer (1990) maintain that during pregnancy, parental conscious and unconscious expectations, and the past experiences of the parents, exercise significant influence upon the attachment relations that develop once the baby is born (Brazelton & Cramer, 1990). The baby’s experience of its own body is then considerably mediated by what it experiences as the mother’s relationship to its body (Laufer, 1981). Parental fantasies about the foetal subject can then have very real consequences for the postnatal child.

Bearing in mind the possible fantasies and unconscious anxieties that might be invoked by ultrasound observation is, I think, helpful for better understanding some of the strange, sensational characterisations that we see in Piontelli’s work, perhaps a potential side effect of this kind of observational endeavour. The fantasy of the voyeur that Farges et al. (2016) describe might account for the voyeuristic gaze in Piontelli’s study that objectifies its subjects in the service of knowing them. Like the foetus, these are constructed characters that do not “look back” in any meaningful way to the author or the reader. Nor does the reader gain much sense of who they are beyond Piontelli’s projections. They exist as stereotypes, generalisations, and often unflattering caricatures.

In an interview from 2006, Piontelli, in conversation with Andrew Briggs, reveals a much more nuanced awareness of the projections that can take place during an ultrasound session. Speaking generally about the performance of ultrasounds, she states how

When performing ultrasounds one has to distinguish between the reactions and projections of those who are observing fetal behaviour and fetal behaviour itself. I am interested in both. Listening to comments is akin to infant observation and can give precious information about the mother, her partner and other family members. However the fetus is never an active participant as in life after birth, but a kind of blackboard onto whom parents and operators can project all sorts of feelings and fantasies. (Briggs & Piontelli, 2006, p. 204)

Echoing other critical approaches to ultrasound aesthetics, Piontelli also recognises how significant the mediation of ultrasound technology can be, describing how “Videos, like photos, are never a totally neutral tool”; the observer “chooses what to focus on, [which] may give a particular slant to the image” (Briggs & Piontelli, 2006, p. 208).

It is likely extensive experience, and no doubt hindsight, that affords Piontelli these retrospective insights. But *From Fetus to Child: An Observational and Psychoanalytic Study* is by no means a singular or unique case. Rather, it is a specific example of how fantasies surrounding foetal observation manifest, mirroring those in our wider collective imagination. A sensitivity to the psychic phantasy life of the observer and parents is, in my view, where applying a psychoanalytic lens to the use of ultrasound imaging becomes particularly valuable. By foregrounding the role of the unconscious, psychoanalysis has the potential to deepen existing perspectives from the social sciences and biomedical studies.

Conclusion: What do we see in the ultrasound?

In his paper “What Do We See in the Nursery? Infant Observation as ‘Laboratory Work’” (1997), Michael Rustin examines Bick’s technique of infant observation, emphasising its importance as a psychoanalytic research method for gathering empirical data about the states of mind of the infant and the mother/caregivers (Rustin, 1997). Looking ahead to potential research avenues for the application of infant observation, Rustin references Piontelli’s work, saying that it has “demonstrated some suggestive continuities in the patterns of interaction of these infants pre- and post-birth, and has brought an awareness that the moment cannot be taken as the ‘absolute beginning’ which it once seemed to be” (Rustin, 1997, p. 108). As we have seen, these are indeed some of the important contributions that Piontelli’s study, along with Negri’s, Caron and Lopes’s, and Farges et al.’s, has made to our understanding of prenatal life. Although these studies have remained somewhat on the fringes of psychoanalysis—occasionally cited but rarely operationalised within analytic technique or training—psychoanalytic ultrasound observation can no doubt be included in the psychoanalytic researcher’s toolkit.

Certainly, these studies contribute to evidence of a rudimentary form of personhood in the womb, resonating with the aims of postwar infant researchers who used film to demonstrate that very young infants were not merely viable organisms but “persons” with

complex emotional needs, a position that was highly controversial at the time. However, as this article has suggested, observing the foetus is a significantly less straightforward practice than observing the postnatal infant. It is a form of observation that is profoundly mediated by technology and limited by the boundaries of the womb. These epistemological limits must be recognised and reflected upon, for as we have seen—namely in Piontelli's study—not to do so risks allowing projections and unconscious phantasies to dominate. As Farges et al., and indeed Piontelli's later reflections, have helped us to recognise, psychoanalytic researchers should embed a reflection on unconscious processes and the aesthetics of ultrasound in their methodologies. This will enable them to mitigate some of the more problematic side effects inherent to this mode of observation.

Indeed, such critical awareness would be well taken up in current thinking around foetuses, namely in debates on the notion of foetal personhood and reproductive rights. The findings of these psychoanalytic ultrasound observations no doubt have moral and ethical implications for how we frame abortion, the treatment of preterm foetuses, and debates around disability and foetal screening. The concept of foetal personhood has become a key issue in pro-choice and antichoice abortion debates in the USA. Since the overturning of *Roe v. Wade* (1973) in June 2022, a renewed proposal from antichoice groups for a "Human Life Amendment" to the U.S. Constitution has emerged, which would solidify foetal rights over pregnant women's rights at the federal level. Pro-choice literature, however, has called out the deliberate subjectivisation of the foetus by antichoice activists and their readings of scientific literature (Rodrigues, 2014). According to emerging literature, the issue of whether the U.S. Congress can grant foetuses constitutional personhood is "ultimately where the fight over reproductive rights is headed in the coming years" (Schultz, 2023). A psychoanalytic perspective can not only help us recognise the limits to knowing the foetus, but also make us more aware of the unconscious motivations around the need to know and ascribe personhood to the unborn, which, as a result, degrades the mother's personhood.

As innovations in ultrasound technology and the ways in which we visualise and observe prenatal life will no doubt continue to develop and advance, emerging observational methods must be carefully considered in relation to how they help, hinder, or more generally shape our thinking about experience, development, and the fundamentals of human subjectivity. For prenatal researchers, I think it is worthwhile bearing in mind not only the studies of Negri, Piontelli, Caron and Lopes, and Farges et al., but also the literary, speculative narratives of prenatal life that psychoanalytic thinkers have contributed, and which I briefly outlined earlier in this article. In Wilfred Bion's and Meg Harris Williams's imaginative narratives of the foetus, there is an in-built recognition of how imaginative conjecture is an inevitable part of our reach into the foetal mind and experience. The register of foetal experience is not one that can be easily evoked by empirical data or language alone. Indeed, Donald Meltzer, in his foreword to Negri's 1994 book *The Newborn in the Intensive Care Unit: A Neuropsychanalytic Prevention Model*, writes how Bion's attitude towards the foetal subject in sections of *The Dawn of Oblivion* (1979) demonstrates a "conviction that the life in utero, as an experiential world, lies beyond the limits of external-world language. It belongs to the realm of what cannot be said" (Meltzer, 1994, pp. xx–xxi).

Perhaps reflecting Negri's regard for this perspective, she includes Harris Williams's poem "Ugly Duckling" in her book. Comparing Bion's and Harris Williams's projects, Meltzer adds that Harris Williams, like Bion, borrowed "the language of the poets to 'show' the mental state of the sojourn traced by Dr Negri for these premature babies" (Meltzer, 1994, p. xxi). As Bion adopted a poetic form to bring to life his theories in the figure of Em-Mature, Harris Williams's accompaniment to Negri's observational work is emblematic of how psychoanalysis has always operated on artistic and imaginative as well as empirical lines. This keeps in check the false veneer of knowledge and truth that any empirical observations of foetal life might assume, ensuring the construction of the foetal subject be firmly in the foreground.

It is fitting, I think, to end with an extract from Harris Williams's poem. Writing from the perspective of a newborn baby, she eloquently expresses the emotional difficulties in doing this kind of prenatal memory retrieval. This is an experience that always lies out of reach and can only be enunciated in the form of a "philosophical narrative":

I found myself in calmer moments, through some innate prompting, trying to remember my old life with Placenta in the womb—difficult though it was to use my present experience as a means of recollecting that original world of reality. Perhaps if I could remember what it was like before the shipwreck, I would not be lost in loss itself, condemned to a universe of death where peace and rest could never dwell ... But it is only now, with mature hindsight, that I can piece together a properly philosophical narrative; and the story of my early life went something as follows... (Harris Williams, 2014, p. xxv)

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Funding

The author received no financial support for the research, authorship, and/or publication of this article.

Declaration of conflicting interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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