THE FETAL SENSES: TWELVE, NOT FIVE A NEW PROPOSAL *

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During most of the 20th Century, scientists doubted the presence of functioning senses during fetal life. Touch was merely "reflexive", hearing severely "dampened" (if not drowned) in the liquid environment of the womb; vision was primitive at best, first blocked by closed eyelids, and then distorted under water. The sense of smell was judged "impossible" without air. By the end of the century, however, experts were reaching for a consensus that there could be touch, hearing, and tasting in utero. Nevertheless, considering the immaturity of the brain in utero, skepticism remained about how *any* sensory information could be given real meaning. In 1988 I was in a small minority who found evidence for five senses operating meaningfully by birth.

Today, a few authorities are declaring that the idea of "five" human senses--an idea dating from the Renaissance--is a dubious oversimplification. The correct number, some suggest, is between 5 and 17 (e.g., Rivlin & Gravelle, 1984, *Deciphering the Senses: The Expanding World of Human Perception*). Encouraged by this assessment, I have taken another look at the experimental and clinical evidence (including experiences reported by my own clients) and would like to propose there are at least **twelve** senses already operating *in utero.* In brief, this is my list of twelve.

(1) Touch (including both receiving touch, and reaching out to touch) is the first sense to develop.

(2) Thermal sensing of hot and cold is indeed real, but usually overlooked.

(3) Pain sensing (now termed nociception) involves crushing and nerve damage. The reality of this experience was tragically overlooked in creating the protocols of obstetrics and neonatology.

(4) Hearing begins as early as 14 weeks after conception, then improves steadily with the arrival of cochlear resources and full growth of the external ear.

(5) Balance and orientation in space develops from week 7 to 12.

(6) The chemosensors of smell operate in close association with the chemosensors of

(7) taste as both are bathed by amniotic fluids passing through the nasal area.

(8) "Mouthing" is used to explore texture, hardness, and contours of objects; this sense is not about eating and nutrition.

(9) Sucking and licking in the womb are mouth-related pleasure senses. The sucking of fingers and toes is not nutritive. Male thumb sucking, seen as early as 13 weeks, is often paired with erections, suggesting sexual sensations. Ultrasound reveals prenates licking the placenta and twins licking each other, suggesting pleasure in bodily contact.

(10) Vision in utero is paradoxical because *limited* by eyelids being fused shut for about six months, yet it seems *functional* in being able to hit targets like needles during amniocentesis at 14 to 16 weeks of age. Some form of vision seems to facilitate twins boxing, kicking, kissing, and playing together in the womb. (11) Although prenates have never been acknowledged for their psychic senses, they do demonstrate at least clairvoyance and telepathic sensing and attunement with parents whether they are near or far from each other; they know whether they are wanted or not, and discern the emotional disposition, and character of those around them.

(12) Finally, prenates also demonstrate transcendent sensing as they report out-ofbody and near-death experiences. When out-of-body, for example, *no* senses should work for either babies or adults, but they do. In transcendent states, even immature senses function well and events are stored in memory--as can be demonstrated years later.

Contrary to popular belief, babies operate in the womb with a rich spectrum of senses.

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