From Primates to Late Nights: One Researcher's Path to Sleep Studies

Interview with James McKenna, Ph.D.

CONDUCTED BY API FOUNDER LYSA PARKER

James McKenna, Ph.D. is Professor of Anthropology and Director of the Mother-Baby Behavioral Sleep Laboratory at the University of Notre Dame

Lysa Parker: For those who aren't familiar with your work, tell us a little about how your career path turned to studying babies and mothers who co-sleep.

James McKenna: I guess you could say my career began at UC Berkeley as an undergraduate in anthropology in the 1960s. 1 walked into a primate behavior class and knew immediately that I had to study monkeys and apes. The first major insight I gained was that the mother: infant relationship among monkeys and apes was very similar to the type of mother-infant relationship we have amongst ourselves. I was originally stunned over the fact that it was individualized, it lasted so long, that there were personalities involved, and that "carrying" behavior — that is, mothers carrying their babies and

the physiological effects that had on them — was in fact crucial to healthy social development. I later learned that not only are contact and carrying always important and beneficial, but that holding and caring for babies when they're young leads to experiences that reduce infant mortality later in life. But it wasn't really until I had my own son that a lot of the insights I had gained from watching monkeys really came to the fore

Becoming a Father

James McKenna: My wife and I came into parenting in 1978 reading all the books and being nervous parents, as is everyone. We learned that indeed not only was there nothing in the childcare books that reflected anything about nonhuman primate infant needs, but we discovered their recommendations were not based on human biology or even on cross-cultural insights as to how babies best lived. They were based, strictly speaking, on 70 or 80 year old ideological positions that defined babies in terms of who we want them to become rather than who they actually are—little creatures that are very much dependent physiologically, socially, psychologically on the presence of the caregiver.

When one looks at traditional care- giving patterns among humans, they are very much reflective of those caregiving systems we see in monkeys and apes. For the first year or two of life, the baby is rarely if at all out of contact with the caregiver. One reason this is true, both for nonhuman and human primates, is that all primates are born neurologically undeveloped at birth. For all intents and purposes they complete their gestation after the womb. Monkeys and apes are born with between 45 and 60 percent of their brains, compared to 80 to 90 for other kinds of mammals. Monkeys and apes too are born relatively undeveloped. They need to be in the arms of their mothers to get physiological support, to be kept warm, to make sure that they're able to keep up with the troupe, and breastfed on demand because they need breastmilk for a year, two years, sometimes three years of life.

While we may think that monkeys and apes are undeveloped at birth, human infants are much more so. Human babies are born with only 25 percent of their brain volume relative to adult size. Not only that, they are so undeveloped at birth that they can't cling onto their mother's chests as can all monkeys and apes. We as a species have babies who are neurologically extremely immature, which is to say their central nervous system depends on a microenvironment that is like the in-utero environment, full of sensory exchanges — heat, sound, movement, transportation, feelings, and of course access to mother's breast as driven by the internal needs of the baby.

That was my introduction to parenting, and my unexpected, dramatic turn of career occurred in the second or third week of my child's life. Because he had been fed cow's milk in the hospital against our wishes, he suffered from intestinal cramping. In order to help him I would literally dance with him practically all night, move him in my arms and rock him to music, which kept me awake and kept him happy. I also noticed that when I lay down with him, if I breathed slowly and had him next to me [where he could] hear my breathing, I could actually regulate his breathing. Our bodies seemed at some point really breathing in synchrony and both resting and calming together. I found that a young infant human could actually monitor and indeed respond to my own breathing — a highly significant though not surprising finding given the knowledge I had acquired about the physiological effects of separation on little primate babies.

I started putting two and two together and asked, "Why am I so surprised that my son is syncopating his breathing with mine, when in fact human babies depend on external sensory cues and signals from the mother whose body is always there for them?" The more I started thinking about my son's

experience and my own, I started wondering whether some instances of Sudden Infant Death Syndrome (SIDS) occur because the more extremely immature babies who depend on breathing cues, touch and smells to arouse and engage them, would depend on those external cues to which they could become en-trained and be reminded to breathe should that be an issue. Even having the caregiver simply there to touch might be a proactive way of offsetting the congenital deficiency that manifests itself in the form of Sudden Infant Death Syndrome.

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France, SIDS, and a Career Change

James McKenna: At this point the SIDS connection was little more than an intellectual interest and one I thought I might explore. It wasn't until I was at a world conference on infant psychiatry in Cannes, France, that I rather casually in the middle of a lecture mentioned that one area that psychiatrists could look at is the role of the parent's body in regulating a baby's heart rate, breathing, EEG patterns, EKG, etcetera, and to relate that to what is known about SIDS. I mentioned rather casually that I wouldn't be surprised that some cases of SIDS might have been prevented if the parent had been there as a reference for the baby.

The comment elicited such a tremendous reaction from the crowd that I had people for the next two or three days stopping me and saying, "You need to look at that.", "An anthropologist needs to look at that. No one else is going to ask that question in the way you asked it.", "I think you should seriously do this kind of research if you can."

The first time someone said it, I thought it was a nice little compliment, hut it didn't motivate me to pursue it seriously. The second time I was surprised, and by the third time someone said it in a very serious way I said to myself, "I think I've found a new career."

At that point I was a researcher working with an infant psychiatrist at the University of California Irvine Medical Center where I held a research appointment in the department of Child Psychiatry. When I returned from France I asked the psychiatrist I worked for whether he knew of anybody who ran a sleep lab in the area. He said, "What? A sleep lab?" 1 said, "Yes, The only way I can answer the question I want to answer is by starting in a sleep lab." 1 explained I wanted to look at the physiological interactions that occur when mothers and babies sleep in the same bed, and I wanted to do it by looking at EKGs, EEGs, sleep architecture, breathing patterns, body temperature, awakening patterns, and how many minutes babies spend in light or deep stages of sleep. I wanted to see if there are really big differences between the solitary sleeping baby versus the social sleeping baby, whether I could relate any of those differences, and if and what the connection might be to babies who die of SIDS. As it turns out, there was a sleep lab three blocks away in building six!

When I walked over there I went to the first door that was open and came upon a gentleman named Dr. Claiborne Dungy, a visiting pediatrician who happened to he there. I asked if I could come in for a minute to ask him if he'd he interested in an idea I had. I told him what I wanted to do and why, starting with the premise—or rather, fact—that babies sleeping alone in a room by themselves is

incredibly historically recent, that we've never explored whether there are negative consequences to this, that 95 percent of the world sleeps with their baby, and there are only very few cultures in the world for which babies sleeping alone is even thought to he acceptable or desirable.

He listened to me for a while, and I told him about my SIDS hypothesis, bow monkey babies are eared for, and that humans might even need even more physical caring, regulation and support because their brains are so much Less developed at birth. Claiborne Dungy said, "Wait here." I didn't know if he was going to get guards to have me escorted out, or whether be was interested, but I waited. Soon several other researchers appeared, and Dr. Dungy turned to me and said, "Dr. McKenna, would you explain to them what you just explained to me." I did. They loved it. And within three weeks we were doing the first study ever on the planet to look at what happens when a mother and a baby sleep together in terms of their mutual regulating physiology. This was the beginning of my new career, and one I have been working on for almost 25 years.

Warning: Sleep Training is Hazardous to Infant Health

Lysa Parker: I'd like you to comment on the popularity of sleep training, a practice that does not seem to be relenting at all. We hear from moms all the time who say that pediatricians are becoming very aggressive in forcing mothers to train their babies. Some say that even if the babies vomit in the bed, they should not pick them up, hut rather pat them on the hack, clean up the mess, and leave them. Others are recommending parents do this beginning at three months of age, even though this is a period of great susceptibility for SIDS.

James McKenna: If parents elect to do some kind of sleep training, most sleep researchers will say that they should not begin until at least six months of age. These are people with whom I don't even agree most of the time anyway, hut even they do not think that anyone should start training their babies before six months, especially for breastfeeding babies. But let me back tip a little hit and remind parents that they are in control of their infants, if a physician is insisting on it, parents ultimately have the tight, first of all, to disregard what a physician recommends, and secondly to get a new physician. These kinds of recommendations are no more than ideological in nature. I'm not even certain that the physicians who recommend sleep training maintain that this is anything but ideological and not truly medically suggested.

I think sometimes parents are under the mistaken impression that if they don't sleep train their babies, somehow some developmental or social skill or competency later in life will he kept from them or that their babies will never exhibit good sleep patterns later in life. If they think this, then they really ought to know that there has never been a scientific study anywhere that has shown any benefit for babies whatsoever in sleeping through the night at young ages, or even sleeping through the night at any particular time. What is important is the nature of social relationships and support within which babies develop all kinds of skills pertaining to independence.

This brings to mind the issue that independence anti autonomy have nothing to do with self-soothing or causing babies to learn how to sleep by themselves or self-soothe back to sleep. Studies have shown recently — those conducted by Dr. Wendy Goldberg, and Meret Keller UC Irvine (Psychology), previous to that studies by Drs. Paul Okami and Tom Wesiner (UCLA) who did a 20-year study of co-sleeping, Jeff Mosenkis (University of Chicago) and researchers Drs. Forbes and Weiss — that children who routinely sleep with their parents or are not trained to sleep train actually become more independent socially and psychologically and are able to be alone better by themselves.

The idea that you shouldn't pick up a baby or touch a baby is completely antithetical to a hundred years of biological information on what constitutes good development: the development of empathy, the development of the reliance on other people for support, the development of autonomy, the ability be alone when you need to be alone, and the ability to interrelate, be empathic, and to become interdependent with others.

That being said, don't forget that physicians are not always the evil ones in this. There are no evil ones involved really. They are often put on the spot by parents who are in a sense demanding that they be able to sleep through the night and their child become independent. The only reason the notion of children needing sleep training ever became an issue is we completely dismantled co-sleeping from breastfeeding and from infants sleeping on their backs (the safe position), which is connected to an infant being able to latch on to a breast as it sleeps alongside the mother. Once we dismantled these three fundamental components of infant sleep (feeding method, sleep location, and infant sleep position) recommendations arose that all together are responsible for the deaths of thousands of Western infants. By that j I mean the single most significant cause of SIDS has been babies sleeping prone. When you gave babies cow's milk, as we did at the turn of the century or so in great numbers, there was no longer any need for the mother to be sleeping next to the baby because she wasn't breastfeeding. If the baby wasn't breastfeeding and sleeping next to the mother, it was discovered the best way for the baby to go to sleep was to put the baby prone — on its stomach — the significantly most dangerous sleep position for an infant. Pulling apart breastfeeding from sleeping next to their mother led to having to answer the question, "When my baby goes to sleep in a crib down the hall after having been fed bottle milk in formula, how do I lay my baby down to sleep?"

Of course the suggestion was to put your baby prone because babies move less, they arouse less, and they sleep in more deep stages of sleep — the very conditions that enhance a baby's chance of dying from sudden infant death syndrome. And indeed, prone sleeping has led to the deaths of over 250,000 babies from SIDS. So the oddity of it was, the concept of having to train infants to sleep apart from the parents, alone, to wean early and separate or to bottle feed, permitted prone (risky) infant sleep and can be held responsible for the needless deaths of thousands of babies.

Now we at least know that if you're going to put a baby alone in a crib in a room by itself, you would put a baby on its back, and at least that's a big step up in the chances of the baby surviving. But what we also now know is three to four studies show quite conclusively that putting babies to sleep in a room by themselves at three to six months of age doubles their chances of dying from SIDS. Indeed when co-sleeping is defined by the baby sleeping within the proximity of a responsible adult caregiver, and not necessarily bed- sharing, the hypothesis that co-sleeping reduces the chance of SIDS has in fact been confirmed. These data emerge in the Great Britain (CESDI) study, conducted by Peter Fleming, Peter Blair, and in New Zealand by Ed Mitchell, The recent European Concerted Action Study by Carpenter and others showed that babies who room- share with a committed caregiver and not just with anyone reduces the chances of a baby dying from SIDS by one half.

Ignore Now, Pay Later?

Lysa Parker: We believe the practice of leaving babies alone at night contributes to the desensitizing of the mother and father to the child. They have to learn to cut themselves off emotionally from their children, as well as the concern about the long periods of crying.

James McKenna: Yes, this does deprive the babies of oxygen and it moves the babies' energy-making

devices away from growth and fighting disease. The baby is burning energy and calories needlessly that could have been put into other more beneficial processes required of the baby. No one really knows what the consequences are of babies that are left to cry quite frequently. It could be emotional, psychological, or social. Certainly no one could argue or speculate that it is helpful to a baby in any psychological sense. Don't forget that the only reason babies cry is it is a defensive adaptive pattern that says that something is wrong. It is nor a manipulation on the part of the baby. Parents can of course choose to ignore it, but perhaps that child will ignore them when they turn 14 or 15 or 16, too. I've always wondered whether the parents who are claiming that they want their baby independent at two and four months still want that same independence and autonomy for their children when they are teenagers. Something tells me that level of independence is not so desirable.

What parents are really talking about is freedom from caring for their babies during the night. Certainly parents have every right to choose that, but they need to know there are future trade-offs they are making with respect to cutting themselves off from that wonderful interdependence that occurs when you are young in life. It is a pattern of activity that children and parents can have that can he the model for their social relationships throughout all aspects of their life.

Lysa Parker: So it is really a matter of our culture shattering the myth that we need to have eight to ten hours of uninterrupted sleep, whereas in other cultures it is very normal for parents to get tip several times a night?

James McKenna: No one promised us a rose garden. It is complex, hut the biological realities are that even if it is hard on parents, if babies are sleeping closer to them they usually have a better chance of getting mote sleep than if the babies are either out, or in and out of the bed. The intermixed "panic method" of sleeping is the worst of all. The term is "reactive co-sleeping" rather than "elective co-sleeping." They are usually the parents who are least happy with their sleeping arrangements. In any event, the cultural expectations those patents have of what babies should (10 is so fundamentally flawed. I really have become convinced that patents are not completely at fault, since they are suffering from what I consider to be the disease of false expectations about how babies sleep or how they should sleep. The reality is, no babies need to sleep through the night. That is completely a cultural construct. It is usually not the babies that have the sleep problems — they can sleep where and when they need — but it is the parents who have the sleep problems. These are usually induced by the notions of the baby being separate from the parent. It is not that the baby can't sleep, they just can't sleep how the parents want it, when they want it, and in a solitary environment. Biologically speaking, this is unnatural for them, and their emotions rightly tell them so.

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To AP or not to AP? Responding to Pressure from "Well-Meaning" Others

Lysa Parker: Do you have any advice for parents who seek a diplomatic way of responding to their own parents who pressure them to put the baby in a crib?

James McKenna: I think it is important to empower parents and let them know that every child born in the world is unique. Since no child is the same, no solution to what children need is necessarily the

same. When others give advice, they have no idea about the unique needs of any given child. One thing parents could say is they are simply responding to the unique needs of their own child. I am truly puzzled by how we are so ready to abdicate to the belief and judgment of others who do not have the level of scrutiny, proximity, and knowledge that parents really do retain. They know their babies better than anyone—what they need, how they feel about how they care for them—so ultimately it should be what makes sense to the baby's parents.

One of the most important things I am hoping to do is remind parents that no one can tell them what they should do with their babies. They have to learn to trust their own judgment, look at the research that is now available on these issues of sleep behavior, and see that there are major critiques about this solitary sleep-training model. It has been exposed. I think our work has helped expose it, and I'm not the only one doing the research. Parents really can have access to that. Ultimately they are the ones who have to make a decision as to what makes sense for them and what they believe to be true. No one can impose that, even from the standpoint of what we would ideally like to happen for all families. Everybody has to judge their own : conditions, circumstances, contexts, what they feel competent : with, what they can do, and what they would ideally like to do.

The first step is gaining confidence and realizing that : physicians do not know babies as well as parents do, and parents are in the best position to make judgments about child : care. It's one thing to have a physically sick baby, but it is another to medicalize child care and presume that these : abstract, odd, biology-challenging dictums about how you : should care for your baby are in fact true.

I don't know that there is a single solution to this except for : having parents get access to a range of viewpoints and critiques of : the typical model. I do think there are serious challenges to the : typical developmental model that clinicians or pediatricians have used, and API is a great resource for this, I always remind parents : that pediatricians are not trained in human development or child care strategies. They are not trained in psychology. They know how to fix sick babies. We have to be very careful to not medicalize behaviors that are not appropriately medicalized: where babies sleep, what is a proper sleeping arrangement, whether a mother makes a decision to breastfeed or not, and how she decides to respond to her baby's nutritional needs — those aren't medical decisions, they are human-based, family decisions that reflect the biology of infants' and parents' normative behavior.

A Father, First and Foremost

Lysa Parker: How has Attachment Parenting been important to you as a father?

James McKenna: The greatest joy in my life has been to experience and live through the birth of my son, and knowing full well that we did not miss one minute of his presence with us, I was as active at every level of care as was my wife. He was always integrated physically, socially, psychologically in everything that we did. As is the lament of any parent looking back on his 26 years, I struggle to remember what my son was like when he was a little two-month-old, how his head felt on my shoulder. And as much as I had that little head on my shoulder, I'd do anything to have it back on my shoulder.

I guess what I take great pleasure in knowing is not only what a remarkable human being he turned out to be — I think in part because of the tremendous physical affection, and love and care that he did get — hut also I take great satisfaction in knowing that I didn't miss one minute of his development, and was able to enjoy every single phase. I also feel comforted that our child, who really was

integrated so close into our physical, social and emotional world, never went through any traumatic, tumultuous activities. While he had his struggles, his parents were absolutely a part of every experience he went through. He always could turn to us, trusted us, felt comfortable with us, opened up to us, and we became his lifelong support partners just as he became ours.

We laid the foundation for that inherent, everlasting trust when he was an infant, and our behaviors and respect for him have not changed throughout the whole time that he has come to us. From the first moment I held him I viewed him as a respected little creature that couldn't get too much love and attention, and in my case we were only lucky enough to have one, but he turned out to be remarkable. He went to achieve tremendous academic potential. He is now working quite independently 3500 miles away from his mom and dad, but we are in touch all the time. In a nutshell, I think that Attachment Parenting promises you the best that life has to offer in terms of fulfillment through your children when they become adults. Certainly the juvenile and adolescent periods are very transient, but the rest of their lives are not, and you get to reap the rewards of your early sleepless nights.

I know there's always a little bit of luck with everything regarding your life's experiences, but I think that more than anything, Attachment Parenting gives you resiliency. Having been so protected and taken care of and emotionally supported gives you the maximum chances of making really terrible situations tolerable and better and good. I think that's the greatest thing that we can give our children - emotional resiliency and an ability to always choose to be proactive and optimistic and to have hope. I do know that the richness of parent-child relationships tat occur with childhood really provide the basis by which adult lives are led and happiness achieved.

Research Results of the Mother-Baby Sleep Institute

Throughout 25 years of laboratory research with mothers and babies, Dr. McKenna and his associates have been able to show the remarkable difference between bow the solitary sleeping baby sleeps, breathes, and experiences heart rates, as compared with the baby that sleeps with its parent.

"When we first started this study we didn't really appreciate the importance of breastfeeding. We quickly soon realized that if you are trying to get a normative picture of what the baby's body expects to receive and how normal human babies sleep, you really have to look at breastfeeding and co-sleeping as almost part of the same system," explains McKenna. The findings:

Breastfeeding babies feed twice as much - that is, twice the number of sessions — when sleeping next to the mother. Sometimes the individual feedings are for a shorter duration, but nevertheless there are a significantly higher number of breastfeeds.

When babies are in bed with the mothers, particularly moms that breast feed, the moms actually get more sleep than if the breastfeeding mother sleeps in a separate room, because the babies have a hard time settling after a feed if they're not able to sleep next to mother.

Babies that sleep with their mother and breast feed spend less amounts of time in the deepest stages of sleep, which are more difficult to arouse from should the baby need to terminate a dangerous apnea (short breathing episode). They instead spend more time in lighter stages of sleep (stage one and stage two). When they do spend time in the deeper stages of sleep, it is only when they're in a sensory deprived sleep environment, that is, sleeping alone. Light stage 1-2 sleep is thought to be physiologically more conducive to safe sleep for babies. It is facilitated by the mother's constant interactions, her proximity, her smells, and her movements. The baby is not only arousing in relationship to mother's movements but is simply kept in a lighter stage of sleep due to the capacity of the baby to breast- feed much more frequently.

Babies that sleep next to their mothers and breast feed are always put in a safe supine or back position, not in the prone position. This is because the breastfeeding, co-sleeping babies can't latch on to the breast if they are sleeping on their stomach. The single most significant risk factor for SIDS — stomach sleeping—is antithetical and rather impossible in the normative co-sleeping, breastfeeding situation.

Babies are warmer when they sleep next to their moms, babies' breathing and heart rate is more variable, and there are shifts ii the numbers of apneas. There are also changes in where the babies tend to have the apneas. For example, when babies are steeping next to their mothers they have more, shorter-second apneas in lighter stages of sleep. There are fewer obstructive apneas for babies in the deepest stages of sleep, and when they do occur they occur for a lesser overage duration.

Mothers sleep more in the bed-sharing environment when they breast feed. They have many more arousals—their sleep is expectedly more fragmented than when they steep in a separate room—but they perceive of their sleep as being better when they are sleeping with their babies.

The sensitivity of each of the routinely co-sleeping partners was higher than the mother-baby partners who do not routinely co-sleep. That is, when looking at the total number of arousals of the routinely bed-sharing pairs in which the baby aroused first, plus or minus four seconds, 48 percent of all the mother's arousals occurred within four seconds following her baby arousing first. Of the routinely solitary sleeping mothers, only 31 percent of their total maternal arousals could be explained by the baby having aroused first.

The babies who routinely slept with their mothers aroused more frequently statistically in relationship to the arousal of the mother. These point to a seemingly conditioned sensitivity that each has to the presence of the other. The reason this might be significant is that it may have implications for communication, for empathy, for interactional synchronicity, and compatibility—all kinds of things that could build a foundation for later in life.

The researchers were able to answer definitively the question that moms do not

habituate to the presence of their babies. The more they sleep with them, so the theory went, the more likely they'd be to overlay because they would be insensitive to them; they would be used to them being there and they wouldn't he prone to react as quickly. What they found was the opposite. The moms and babies who routinely slept together actually had a heightened and enhanced sensitivity to the other, not a diminished sensitivity to the presence of the other. That permitted Dr. McKenna and his team to reject the claim made by the Consumer Product Safety Commission that mothers sleeping in beds hr the deepest stages of sleep would be unable to awaken or notice the status of their babies.

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