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## More Sleep vs. Damaged Wellbeing: An Analysis of Competing Cry-It-Out Sleep Training Narratives

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**ABSTRACT.** The objective of the current study was to critically analyze the competing narratives discovered for and against the use of the cry-it-out sleep training practice. The cry-it-out (CIO) method is a controversial sleep training technique that encourages parents to let their infants cry at night by themselves for specific increments of time in order to get infants to eventually sleep through the night, on their own. Using Fisher's (1984) narrative paradigm as a theoretical framework, which argues that all types of communication are essentially stories, we revealed four pro-CIO themes and four anti-CIO themes found in online sources about the CIO method. The themes were evaluated for their narrative probability and narrative fidelity, and subsequently, for their narrative rationality, which together analyze the overall persuasiveness (yet not necessarily correctness) of a message. The analysis revealed that while there are strengths and weaknesses on both sides of this debate, the anti-CIO method narrative's closer alignment with established theory significantly enhances its persuasive appeal. It is imperative that individuals and entities of influence work together to more widely disseminate healthy alternatives to the CIO method and give parents the tools needed to determine what is best for them and their child based on their child's needs and theory. Since so many parents turn to the Internet for advice, online messaging should be a focus of these efforts.

*Keywords:* parenting, narrative, sleep training, cry-it-out, communication, infant

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## More Sleep vs. Damaged Wellbeing: An Analysis of Competing Cry-It-Out Sleep Training Narratives

The extreme sleep deprivation and overall exhaustion that parents experience during their child's first year of life (Elek et al., 2002; Gay et al., 2004; Nomaguchi & Milkie, 2020) are some of the most stressful aspects of becoming a new parent (Ramos & Youngclarke, 2006). Intensifying this stress, Germon et al. (2009) discovered that most parents in the United States believe that babies should learn how to sleep through the night, on their own, within the first year of life. Several sleep training methods have been developed (Ramos & Youngclarke, 2006; Smith, 2016) and disseminated by opinion leaders (e.g., Ferber and Weissbluth) as viable options for parents to live up to that expectation, get some rest, and lower their parenting stress. One extremely popular option is called the cry-it-out (CIO) sleep training method.

Parents' decisions about infant sleep occur within broader family processes and are shaped by stress, cultural narratives, and the interpersonal dynamics of early parenthood (Harkness & Super, 2020; Lazarus & Folkman, 1984). Family life education emphasizes the importance of supporting parents in navigating such high-stakes decisions through strength-based, prevention-oriented guidance (Duncan & Goddard, 2020). Situating this study within family science highlights how choices like sleep training reflect not only individual preferences but also developmental transitions, coparenting coordination, and the broader family system.

The current study aims to organize and evaluate several pro-CIO and anti-CIO arguments found online, as many parents use the Internet to search for help when they have a question about their child-raising experience (Radey & Randall, 2009). It is important to evaluate competing narratives that are passionately debated, especially when the stakes are high (i.e., getting more sleep or damaging infant wellbeing), in order to gain insight into the persuasive appeals that are most convincing. To better situate these narratives within the cultural logics that guide parental choices, we draw on ecocultural theory (Super & Harkness, 1986) and parental ethnotheories (Harkness & Super, 2020), which explain how culturally shared beliefs about infants, independence, and caregiving shape parents' interpretations of CIO-related messages. First, we plan to identify the most prominent narratives being used online to persuade parents to either use or avoid the CIO sleep training method. Second, we plan to critically evaluate the quality of the narratives utilized on each side of the debate using Fisher's (1984) narrative paradigm as a theoretical framework. Finally, we plan to further clarify the debate by explaining how much of the controversy surrounding this issue emerges from distorted public discourse (on the Internet and beyond) rather than from a balanced scientific debate where critiques are evidence-based.

### Review of Literature

#### The Cry-It-Out Method

The cry-it-out (CIO) method is a popular behavioral sleep training method. Despite this popularity, the benefits and effectiveness of CIO are debated by child development experts, physicians, and parents. The CIO method encourages parents to let their infants and toddlers, sometimes as young as two months of age<sup>1</sup>, cry at night for specified increments of time in order to teach them to fall asleep and

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<sup>1</sup> A large system of pediatric care offices, with 26 locations and thousands of patients in New York City, New Jersey, and Los Angeles, Tribeca Pediatrics, explicitly suggests that parents begin formal sleep training as early as two months, “[i]n 1994, when Tribeca Pediatrics first opened its doors, we recommended that parents begin sleep-training their babies at around the age of four months. However, to the universal comfort and sanity of our patients, we have discovered that sleep-training is even more effective if begun at two months.”

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stay asleep on their own (Ferber, 1985; Weissbluth, 1987). While the phrase “cry-it-out” was utilized by several physicians and parenting experts since the early 1900s, the official CIO methods discussed in this analysis were not developed and publicized until several decades after the first mention of the phrase (see Rosier & Cassels, 2021, for a historical review).

Ferber (1985) and Weissbluth (1987) are two physicians who developed influential CIO methods and published them in widely read books during the 1980s. Collectively, these books sold over two million copies and became touchstones in U.S. parenting culture. Ferber (1985) promoted a gradual extinction method—often called *Ferberization*—in which parents progressively increase the length of time before responding to an infant’s crying. Weissbluth (1987), in contrast, advocated for a full extinction approach in which parents do not return to the infant’s room at all during the night. Both authors argue that these approaches support infants’ development of self-soothing abilities and lead to consolidated nighttime sleep over time.

Since their release, CIO methods have been broadly circulated in parenting media, endorsed by pediatricians, and adopted by parents. In an analysis of 40 popular parenting books, Ramos and Youngclarke (2006) reported that 61% endorsed CIO methods. The cultural pressure to achieve infant sleep independence is notable: Germon et al. (2009) found that most U.S. parents believe infants should sleep through the night on their own within the first year of life, despite limited consensus on how to achieve this goal.

A small, yet high-profile, set of studies is frequently cited to argue that CIO is safe and effective. For example, Gradisar et al. (2016) found that graduated extinction strategies resulted in modest improvements in infant sleep and maternal mental health without observable physiological stress differences. Similarly, Weinraub et al. (2012) reported that infants who experienced patterns of nighttime consolidation—many of whom used behavioral methods—showed no differences in attachment or developmental outcomes compared with infants who continued to wake frequently. These studies are often invoked in both academic and media contexts as evidence that CIO is not harmful, and they appear in leading journals such as *Pediatrics* and *Developmental Psychology*. Consequently, supporters of CIO frequently frame the scientific debate as resolved: CIO “works,” and available evidence does not show harm.

However, other peer-reviewed studies challenge the strength or interpretation of this evidence, suggesting that the scientific landscape is more complex than CIO proponents imply. Several scholars have raised concerns about small sample sizes, short follow-up periods, and the lack of direct measures of infant emotional states in studies supporting CIO (Middlemiss et al., 2012; Rosier & Cassels, 2021). For instance, Middlemiss et al. (2012) demonstrated that while infants undergoing sleep training stopped crying externally, their cortisol levels remained elevated, suggesting physiological stress despite behavioral quietness. Such findings complicate claims that CIO is uniformly benign.

Additional research questions whether behavioral sleep interventions meaningfully improve parental well-being. Belmonte et al. (2020), for example, reported that sleep training methods—including CIO—did not produce lasting improvements in maternal depressive symptoms once infant temperament and family context were accounted for. Others have argued that cross-cultural comparisons reveal variable expectations about nighttime infant dependence, suggesting that CIO’s rationale rests more on Western norms than biological necessity (Hince et al., 2017).

## **Ecocultural Theory and Parental Ethnotheories as Context**

The debate surrounding CIO cannot be understood without acknowledging the cultural beliefs and values that shape parenting practices. Ecocultural theory and the concept of parental ethnotheories argue that parents' caregiving decisions reflect culturally grounded assumptions about infant needs, independence, co-regulation, and appropriate sleep behaviors (Harkness & Super, 2020; Super & Harkness, 1986). In Western contexts—particularly the United States—infant independence and uninterrupted nighttime sleep are often prioritized, creating a cultural landscape in which CIO is framed as both normative and necessary. In contrast, many non-Western or collectivist cultural models emphasize constant proximity, rapid responsiveness, and co-sleeping as developmentally appropriate. By integrating an ecocultural perspective, the present study situates CIO narratives within their broader cultural belief systems and clarifies why online discourse reflects not only scientific claims but deeply rooted cultural assumptions about what kind of person a baby should become and how parents should facilitate that development.

## **The Narrative Paradigm as Analysis**

Fisher's (1984) narrative paradigm offers one approach to evaluate and interpret human communication, presuming that all types of communication are essentially stories. Since we are fundamentally storytelling creatures, we are continually telling stories and, likewise, evaluating the stories of others. Thus, this approach to studying communication examines how individuals interpret stories and create meaning from them. A basic assumption underpinning this framework argues that “no matter how strictly a case is argued—scientifically, philosophically, or legally—it will always be a story, an interpretation of some aspect of the world that is historically and culturally grounded and shaped by human personality” (Fisher, 1987, p. 49). Individuals often evaluate the stories of others for their narrative rationality before making a behavior change themselves. Thus, understanding and evaluating the information that individuals consume when seeking advice is an important process that should be studied. The narrative paradigm has been used as analysis in a wide variety of research areas, including recent studies about Chinese political discourse (Xu et al., 2024), gossip (Nissler, 2022), Russian political narratives (Wagnsson & Lundström, 2023), and environmental campaigning (Primayanti & Puspita, 2022), to name a few.

The primary criticisms of the narrative paradigm emphasize the absolute argument that all communication is story and the oversimplification of complex decision-making processes. Rowland (1989) argued that some forms of communication, such as science fiction and fantasy, are indeed not narratives in that they do not involve most people's values. Furthermore, as another scholar stated, “a rhetorical narrative may ‘ring true’ in the lives of particular audience members, may resonate with their own experience and that of those whom they admire, and nevertheless be a bad story” (Warnick, 1987, p. 174).

Despite these criticisms, Fisher's (1984) narrative paradigm provides us with a solid basis for understanding the particular competing narratives of interest in the current study. Exhausted parents desperate for sleep solutions actively and frequently expose themselves to narratives about a variety of parenting choices prior to making decisions in their own lives. The information gathered is often presented in a story format intended to persuade the audience to make a decision. The narrative paradigm is not only an appropriate framework for this analysis but also a robust tool for better understanding how and why parents choose to either utilize or avoid the cry-it-out sleep training method.

## Method

The present case study analyzed messages from a variety of Internet websites that included either pro-CIO or anti-CIO method narratives. The Internet was chosen as the method of data collection for two main reasons. First, many parents use the Internet to search for help when they have a question about their child-raising experience (Radey & Randall, 2009). In fact, a 2022 survey revealed that new parents conduct over 2,000 Google searches regarding baby-related questions in a year, which averages out to about six searches a day<sup>2</sup>. Second, the discussion of this debate can be seen in all media, but the Internet offers a venue unlike other media sources. Not only does the Internet possess specific material only made for online audiences, but it also frequently contains printed information that was once only accessible in hard copy. Additionally, the dynamic nature of online content allows for real-time updates and a diverse range of perspectives that traditional media may not provide. This accessibility and breadth of information make it an invaluable resource for comprehensive research and analysis.

### Collection of Data

The Internet search engine [www.google.com](http://www.google.com) was used to source websites based on its extreme popularity and algorithm efficiency. In fact, Google owns more than 90% of the total worldwide search engine market share (Murray, 2025) and more than one billion people use Google every month (Wakabayashi, 2021). Seven separate Google searches were conducted in May 2023 using seven common CIO debate phrases: “cry-it-out method,” “CIO method,” “extinction cry-it-out,” “Ferber method,” “pro cry-it-out,” “anti cry-it-out,” and “avoid cry-it-out.” The searches yielded over 800,000 results. Although 800,000 results were found, only the first three pages of results from each search were reviewed since the large majority of people never venture past the first three pages of search results in their everyday searching. In fact, 75% of Internet users do not scroll past the first page of search results (Agrawal, 2017). Instead of only using one page of search results, the first three pages were included in this study in order to expand the data set and provide a more robust understanding of what is available. Additionally, we acknowledge that the online search results analyzed may be influenced by algorithmic bias, as search engines often prioritize content based on engagement metrics rather than representativeness (Bucher, 2018).

In order to be included in this study, each search result had to meet a set of criteria. Specifically, the search result had to (a) mention a sleep training method, (b) include a clear *opinion* about and/or *advice* regarding a CIO method (there were several sites that defined a CIO method and then either encouraged parents to make their own decisions or were only informational, like a Wikipedia entry, without providing any advice, opinions, reasonings, or suggestions), (c) provide a *primary* opinion about or advice regarding sleep training, not only an evaluation of another person’s opinion about sleep training (if a primary opinion was given in addition to the reporting of another’s opinion, the site was included in the analysis, but evaluations of others’ opinions were not analyzed). The search results yielded a variety of online media types, including newspaper and magazine articles, blog posts, ebooks, scholarly journal articles, and other website articles. Message boards (such as Reddit), however, were not used because the authenticity, reliability, and structure of the messages are often unclear. In addition to using a variety of media types, the credentials and expertise of the search result authors also varied greatly, including, but not limited to, informed parents, sleep experts, physicians, and academics. Lastly, any search results that were duplicates were only evaluated once.

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<sup>2</sup> This survey was conducted online within the United States by OnePoll on behalf of CeraVe® from March 29-April 1, 2022, among 2,000 U.S. parents of children ages 0-2.

Out of the 210 search engine results that were initially evaluated (for each of the seven phrases searched, there were 3 pages of 10 results per page, equaling 30 results total for each of the seven searched phrases), only 75 met all of the criteria outlined above. Fifty-six of these search results were placed in the pro-CIO method group (accounting for approximately 74.6% of the total online sources analyzed) and 19 of these search results were placed in the anti-CIO method group (accounting for approximately 25.3% of the total online sources analyzed).

### **Analysis of Search Results**

Once the 75 online sources were collected, all materials were analyzed for common themes using Braun and Clarke's (2006) thematic analysis approach to qualitative data analysis. By familiarizing oneself with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and then producing a report (Braun & Clarke, 2006), a summary of the main findings was created. Specifically, the purpose and message of each search result were documented. Throughout this process, direct quotes from the search results were flagged for possible use in the report. Once a clear set of findings was articulated, the search results were reviewed a final time, and passages related to the discovered themes were further collected.

### **Themes Identified**

Eight main themes emerged from our thematic analysis: four themes for each side of the debate. It is important to note that the themes identified in this study reflect the content and structure of online CIO narratives and do not directly represent parents' actual behaviors or decisions.

#### ***Four Pro CIO Themes***

**CIO Works.** The most popular theme identified in support of the CIO method claims that it works; it improves sleep and lowers stress for everyone in the family, especially mom and baby. This reasoning states that if the CIO method of choice is systematically followed (i.e., leaving a baby to cry at bedtime and/or during nighttime awakenings for certain increments of time), the baby will soon be able to fall asleep without parental assistance and will learn to sleep through the night without needing a parent to intervene. This theme was present in all 56 pro-CIO online sources used in this analysis, revealing it as the main argument in support of the CIO method.

**CIO Teaches Baby to Self-Soothe.** The second theme, present in 36 of the 56 pro-CIO sources, suggests that utilizing the CIO method will teach a baby how to self-soothe and thus increase independence. Here, the claim is two-fold; specifically, that (1) independence and self-soothing are valuable and that (2) the CIO method will teach a baby these skills. Many supporters of this argument assert that if a parent does not get their infant to sleep through the night early on in life, the baby will be dependent on the parent for sleep and continue to have interrupted sleep problems later in life, even into middle childhood or adulthood. This is argued to be extremely undesirable.

**Crying Isn't Harmful.** A third theme that emerged, which was present in 29 of the 56 pro-CIO online sources used in this analysis, states that a little crying does not hurt anyone. This theme is in response to the most common *anti*-CIO argument (described below) about the extreme negative impact of infant crying on a variety of outcomes. The explanation in this pro-CIO theme is that the amount of crying that results from the utilization of the CIO method is not at all, or is only minimally, damaging. A few academic research articles (e.g., Gradisar et al., 2016; Price et al., 2012; Weinraub et al., 2012) are repeatedly cited to accompany this argument that infant crying is not dangerous. Further, the benefits are said to greatly outweigh any minor negative consequences the baby or parents might experience.

**Babies Need Consolidated Sleep.** The final theme argues that babies need consolidated sleep and that segmented sleep is actually harmful to babies. This theme, which was found in 12 of the 56 online sources analyzed, is often accompanied by a list of negative outcomes that poor sleep quality and not enough sleep have on babies and toddlers. Some of the outcomes cited in the online sources include future bad sleep (Dubief, 2012; Holdaway, 2018; Willes, 2019), poor development (Dubief, 2012; Holdaway, 2018), poor health (Dubief, 2012; Fink, 2016; Plowman, 2017), and daytime moodiness (Dubief, 2012; Fink, 2016; Kelly, 2018). It is important to note that these citations are of the online sources used in this analysis that made these causal claims, not academic or scholarly sources. In fact, of the 12 online sources that used this argument, only one of them cited a primary, academic source as evidence for the claim.

#### ***Four Anti-CIO Themes***

Just as there are four main arguments made to support the use of the CIO method, there are also four main arguments made about why the CIO method should be avoided.

**CIO Activates Stress Response.** The most prominent theme, found in 15 of the 19 anti-CIO sources, lists a variety of negative outcomes resulting from letting a baby cry alone. This theme makes two main claims: (1) crying activates the stress response, which releases cortisol in the body and (2) if the stress response is activated too long or too often, negative outcomes can result. Some of the argued outcomes include a negative impact on the architecture of the brain (Annie, 2008; Narvaez, 2011; Orson, 2016; Winder, 2019), attachment bonds (Annie, 2008; Coste, n.d.; Narvaez, 2011; Orson, 2016; Sherizen, 2012; Winder, 2019), physical health (Annie, 2008; Coste, n.d.; Winder, 2019), and emotional/mental health (Annie, 2008; Coste, n.d.; Dewar, 2018; Narvaez, 2011)<sup>3</sup>. Of the 15 online sources that used this argument, 8 of them cited a primary, academic source as evidence for the claim.

**Crying is How Babies Communicate.** The second theme, found in 11 of the 19 anti-CIO sources, claims that crying is how infants communicate, and therefore, should not be ignored by adults. The claim is that adults, who have no way of exactly knowing what a baby is crying about, should always attend to an infant's cries. Further, this theme contends that when a baby stops communicating via crying after enduring the CIO method, they are not learning to self-soothe or how to sleep on their own. Instead, the baby is learning that protesting the situation is pointless. Infants then give up because they have lost trust that their parent will come when they cry; so they completely stop trying to communicate their nighttime needs.

**Due to Individualistic Belief Systems.** The third anti-CIO theme uses a cultural lens to persuade parents to avoid the CIO method. Specifically, this theme explains that a parent's desire to get their baby to sleep through the night is largely due to many Western cultures' strong individualistic belief system and the values we place on personal happiness and independence. Many of the articles with this argument also include claims about the newness of this modern sleep practice and compare American culture to other cultures around the world, where the CIO method is rarely, if ever, used. Less frequently, this theme was present in six of the 19 anti-CIO online sources.

**Babies Need Proximity.** The final theme that surfaced in this analysis argues that humans want to be in close proximity with other humans, which is a fundamental need we are all born possessing. Babies are the most vulnerable humans, and thus, their needs are important. This theme argues that an infant's need for close proximity to a caregiver is just as important as their needs for food, warmth, and

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<sup>3</sup> Again, these citations are of the online sources used in this analysis that made these causal claims; not academic, scholarly sources.

shelter. At its core, this argument centers around the idea that babies, like adults, get lonely and want to be with others. When infants cry during the night, they are oftentimes expressing that need. This theme was present in seven of the 19 anti-CIO online sources in this analysis. See Table 1 for a representation of the number of articles that included each theme on each side of this debate.

Editor insert Table 1 here

### Analysis

As explained, Fisher's (1984) narrative paradigm can be used to assess the narrative rationality of everyday stories people tell. Narrative rationality requires probability and fidelity, which are at the core of the evaluation of reasoning systems. Here, we assess the narrative rationality by evaluating the probability and fidelity of the pro and anti-CIO stories.

#### Narrative Probability

Narrative probability is concerned with the degree to which a story makes sense (Fisher, 1984). The believability and structural coherence of the story is under question. Specifically, individuals assess whether the story *hangs together* and whether all of the claims within the story *add up*. Stories *hang together* when people are persuaded to believe that the story is consistent, important details have not been left out, and other possible interpretations have been accounted for. Stories *add up* when the parts of the story connect well and make sense.

#### Narrative Probability of Pro CIO

The pro-CIO narrative *hangs together* in some ways, but not in others. In particular, at the foundation of this narrative is the overarching notion that the method works and that the benefits, which the whole family will experience, are life-changing. The argued benefits of improved sleep, lower depression, and lower stress are so appealing that it does not take much convincing to sway extremely tired, potentially desperate, parents. As one blogger noted:

If done correctly, Wiles says you should see about 80 to 100 percent improvement in your child's sleep after just two to three nights, and in one to two weeks you will see the same improvements in their naps (which can be trickier). (Benjamin, n.d.)

This idea is even more persuasive with the presentation of the anecdotes scattered throughout this narrative that illustrate the effectiveness of the CIO method:

Although it was rough, super rough, we did a modified Ferber method, and it was one of the best parenting decisions I've ever made. It took several nights of, yes, pure torture, but now, five years later, my boys are champion sleepers (Benjamin, n.d.)

In fact, many authors of the pro-CIO articles are parents themselves, advocating for the method with their own personal CIO success stories: "It wasn't easy, but by night two, our baby slept through the night. We were all rested and happier" (Kelly, 2018). The regularity of the effectiveness claim (theme one was present in every single pro-CIO online source), combined with the dozens of personal success stories, helps the pro-CIO narrative *hang together*.

The pro-CIO narrative does not *hang together*, however, when the large majority of online sources do not cite scholarly evidence for the various claims being made. The few online sources that do cite scholarly evidence have some important drawbacks. First, all of the pro-CIO online sources, except for two of the 56 sources analyzed, fail to mention any opposing scholarly evidence, as if it does not exist. Some of the online sources briefly explain that opponents of the CIO method believe that crying

has negative consequences (without actually citing that research), and then those online sources continue to cite research that they claim supports no dangerous outcomes. In this way, the pro-CIO narrative seems like it is either accidentally leaving out or purposefully ignoring other possible interpretations or credible sides to the story. There are a couple of pro-CIO online sources, however, that provide both sides of the scholarly evidence. Most notable is Willes (2019), who states:

So here we have one scientist that's taking data from abused kids and saying that in their cases, excessive crying (probably among other things), causes this cortisol release. And then we have a WHOLE BUNCH OF OTHER scientists telling us that lack of sleep amongst kids can cause symptoms of ADHD, obesity, and (also terrifyingly) permanent changes in brain structure. (paragraph 10)

The lack of counterargument scholarly evidence in most of the online sources damages the pro-CIO narrative's probability.

A second drawback involves the general lack of evidence provided in support of the four themes that emerged from our analysis. In particular, no scholarly evidence was given to support theme one (the CIO method works) or theme two (the CIO method teaches infants independence and self-soothing abilities) in any of the 56 pro-CIO online sources analyzed. Additionally, of the 12 online sources that argued that infants need consolidated sleep to be physically and emotionally healthy (theme four), only one of those sources cited scholarly evidence for this claim. Theme three, that infant crying and distress is not harmful, was the main theme that included citations from scholarly sources. The general lack of scholarly evidence in support of the pro-CIO claims is concerning and additionally decreases the pro-CIO narrative's probability.

A third drawback here is that the minimal presentation of scholarly sources as evidence does not include any critical evaluation of them. From a methodological perspective, the scholarly studies cited in the pro-CIO literature each have significant flaws (see Cassels & Rosier, 2021, for a critique of the main articles that purportedly support sleep training). There are four primary issues with the methodologies across pro-CIO studies:

1. The first starts with the questions being asked by the researchers; that is, are these studies actually examining the questions for which they are being given credit for answering? In some cases, yes, but in others, no. For example, Weinraub et al. (2012) is regularly cited as supporting sleep training, but the study itself was not concerned with sleep training at all. Rather, the data examined was used to try and provide some normative data on night wakings and sleep patterns between six months of age and three years of age. Although the researchers themselves made (unwarranted) extrapolations to sleep training, the fact remains that their research does not "support" CIO simply because there is no assessment of CIO in the entire study.
2. The second methodological issue is a lack of appropriate outcomes and long-term follow-ups. In many cases, there is no assessment of appropriate outcomes to even make claims, such as in the case of cognitive outcomes. For example, in looking at whether or not sleep training assists cognitive growth, there are no studies that have looked specifically at that, and those that look at consolidated sleep and cognition do not support the hypothesis that it is necessary (e.g., Hoyniak et al., 2019).
3. The third methodological issue involves competing components of an intervention. In most of the studies looking at CIO, there are multiple components to what parents experience, but the efficacy seems tied solely to the presence of sleep training. For example, in one study parents

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were offered a 27-page booklet and 23-minute DVD discussing all types of issues around sleep including normal sleep patterns, how to identify infant tired signs, individual help to create bedtime routines, access to group support sessions with other families, and suggestions of modified CIO, but the findings have regularly been cited as only supporting CIO (Hiscock et al., 2014). When there are various elements to an intervention, then it is impossible to say with clarity which elements led to the positive findings, and given that positive routines have been independently found to improve sleep (see Mindell, 1999), it may be these other factors driving the results.

4. The fourth, and perhaps most important, methodological issue is how sleep is assessed. For the majority of studies, infant sleep is parent-report and the findings of efficacy across studies is intricately tied to this method of assessment. That is, parent-report measures of sleep do report improvements with CIO (for reviews, see Mindell et al., 2006; Mindell, 1999), but when objective measures of sleep are included in the same study, there is very little overlap, with parental-report often overestimating the amount of sleep a child has and underestimating the number of wakings (Gradisar et al., 2016; Hall et al., 2015; Sadeh, 1994). Thus, what parents may be reporting on in terms of outcomes may be far removed from the reality of their infant's sleep and if the narrative is that CIO improves infant sleep, then the data needs to match that, which it does not.

On top of the methodological issues with the cited studies, it is also important to note that the authors citing these research studies often misinterpret the findings of the research. One of the most common problems is taking the authors' *interpretations* of their findings as being evidenced by the data. This is shown in the work of Weinraub and colleagues (2012), who argued their data supported the use of CIO out. Given CIO was not included in the research, the research they present actually provides no support for or against CIO, despite the authors' own view that CIO may be necessary. Similarly, Gradisar and colleagues (2016) acknowledge that their data find infant sleep does not change at all with modified CIO based on objective measures of sleep, but rather the children have stopped crying or calling out. They further suggest they *believe* this to be due to the presence of self-soothing, but have provided no assessment to this conclusion, and thus it is simply a matter of their own opinion (and is countered by a fuller examination of how self-soothing, or emotion regulation, develops). A final common misconception is that the evidence to date is sufficient to make conclusions, and this simply is not the case. Missing in the research to date are many factors that are necessary to provide a fuller picture of the case for or against CIO, including focused assessments at different ages, inclusion of temperament as a mediating or moderating factor, head-to-head comparisons of alternatives to CIO, appropriate long-term follow-ups across a variety of variables, and more. In fact, in a critical evaluation of five prominent behavioral sleep intervention studies, Cassels and Rosier (2021) reported that sleep training does not objectively improve infant sleep.

Additionally, there is a difference between having no evidence of harm (which is what has been discovered to date) and evidence of no harm (which has not been discovered). Researchers must provide evidence of no harm across a variety of populations and circumstances before this evidence can be called conclusive. Moreover, all four groups of authors who are frequently cited (e.g., Gradisar et al., 2016; Middlemiss et al., 2012; Price et al., 2012; Weinraub et al., 2012) argue for replication studies to validate the findings of their research. These concerns should be referenced when citing these four studies as evidence, yet they are not. Taken together, the lack of counterargument evidence and the lack of accurate reporting about and critical evaluation of the scholarly research used by pro-CIO method advocates seriously damages the probability of the pro-CIO narrative.

When evaluating the narrative probability of a story, it is additionally important to ask if the facts *add up* (i.e., if the story makes sense). Again, the pro-CIO narrative *adds up* in some ways and not in other ways. For instance, the narrative *adds up* when individuals are told that babies and toddlers need a certain quantity and quality of sleep to be emotionally and physically healthy. Without citing a primary, scholarly source, Fink (2016) states, “Sleep has a direct impact on mental and physical development.” Although Fink (2016) did not cite a source for this claim, this theme is still persuasive as it feels like common sense. However, as previously mentioned, only one of the pro-CIO online sources (Willes, 2019) cited actual scholarly evidence for this claim, which is unfortunate because the evidence is available.

Infants and toddlers do, in fact, need a certain amount of sleep to experience optimal health. The American Academy of Pediatrics recommends that newborns sleep an average of 16 hours per 24-hour period, that infants 1 to 6 months sleep an average of 15 hours per 24-hour period, and that infants 6 to 12 months sleep an average of 14 hours per 24-hour period.

However, the argument that consolidated sleep is the superior way to achieve this health and that segmented sleep will lead to a host of negative outcomes is not well supported. In fact, several studies have shown that consolidated sleep is not relevant to infant and toddler sleep health (e.g., Barry, 2021; Hoyniak et al., 2018; Tham et al., 2017). For example, Tham et al. (2017) reviewed the literature up to 2015 and the research supporting the link between sleep and cognition in infancy was focused predominantly on the proportion of nighttime versus daytime sleep and naptimes as sleep variables, not overnight consolidated sleep. Only two studies examined sleep efficiency (a measure of total sleep versus wake time overnight) and found a link to general cognitive development; however, it was unclear in which direction the relationship occurred. That is, does sleep efficiency improve cognition, or are the two a feature of greater development more generally? Later research from Hoyniak et al. (2018) suggests the latter is the case, as they found improved sleep did *not* improve cognitive scores in a longitudinal study, even though there were cross-sectional results suggesting greater sleep led to greater general cognition. In a systematic review of what “normal” infant sleep even entails, Barry (2021) further argues that research has failed to show if deeper sleep or more consolidated sleep in infancy is beneficial to the infant in any way at all. While common sense tells us that the theme regarding infants needing sleep is believable (increasing its narrative probability), facts tell us that interrupted sleep is just as helpful to child development as consolidated sleep. This disconnect causes the narrative probability of the pro-CIO storyline to decline.

Taken together, considering the two main components of narrative probability (i.e. whether the story *hangs together* and *adds up*), the pro-CIO narrative is strengthened by consistent anecdotal and expert claims of the method’s effectiveness, but is significantly weakened by its absence of scholarly evidence supporting the narrative’s themes, inadequate comprehension of the scholarly evidence cited in favor of the CIO method, a lack of counterarguments mentioned, and a common sense claim about children needing sleep that falls short without providing accurate, sufficient evidence to support it.

### ***Narrative Probability of Anti-CIO***

Similar to the pro-CIO narrative, the anti-CIO narrative *hangs together* in some ways, but not in others. The main strength of the anti-CIO narrative’s probability lies in the scholarly evidence cited in most of the online sources analyzed. In fact, 14 of the 19 sources analyzed cite at least one primary, scholarly source, with several of the analyzed sources citing more than one. For example, Dewer (2017) mentions that “Studies of human infants confirm that crying is physiologically stressful—increasing a

baby's blood pressure, heart rate, and cortisol levels (Levesque et al., 2000; Luddington-Hoe et al., 2002)" when offering evidence against the CIO method (para. 25).

Not only is scholarly evidence frequently cited to support anti-CIO claims, but counterargument research is also cited and critically evaluated. When assessing a research study frequently cited by pro CIO advocates (i.e. Price et al., 2012), Cassels (2012) gives an exhaustive critique and concludes, "the current study suffers from several flaws which make the conclusions drawn by the authors quite premature" (para. 3). Further, Dewer (2017) systematically critiques the extremely popular study by Gradisar et al. (2016) concluding, "this research doesn't target key questions about graduated extinction, and it's limited by small sample size and missing data" (para. 82). The surplus of sources cited to support the anti CIO narrative reveals consistency and the critical analysis of opposing arguments shows that other possible interpretations have not been omitted; significantly increasing the perceived probability of the anti CIO narrative.

Primary, scholarly research is additionally cited in an effort to support all four themes (as opposed to the pro-CIO narrative, which only consistently cites research supporting one of the four themes); further enhancing the narrative's probability. Citing Ball and Russell (2012), Winder (2019) explains, "From an evolutionary anthropological view point, human infant crying is an identical behaviour to the separation distress call displayed by infants among other primate species. Crying is the infant's only means of attracting their mother's attention once separated, in order to ensure their own survival;" (para. 40) which supports theme two (i.e., that an infant's crying is communication). Similarly, in a single online source, Narvaez (2011) cites more than a dozen primary, scholarly studies as evidence for three of the four themes. At one point, Narvaez (2011) states, "Babies don't self-comfort in isolation. If they are left to cry alone, they learn to shut down in face of extensive distress—stop growing, stop feeling, stop trusting (Henry & Wang, 1998)" (supporting themes one and four) (para. 17). Consistently providing scholarly evidence when arguing all four themes further causes the anti CIO narrative to *hang together*.

The anti-CIO narrative does not *hang together* in that there are very few solutions to poor infant and family sleep offered in the online sources analyzed. It is safe to assume that the majority of parents who are searching the Internet with the search terms used in this analysis are likely experiencing poor sleep in their homes. Thus, they are looking for answers. When reading the 19 anti-CIO articles used in this analysis, it feels as though something is missing in this regard. There are a couple of lackluster suggestions offered, but overall, the anti-CIO narrative leaves individuals hanging.

When assessing whether the anti-CIO narrative *adds up*, or makes sense, there are clear strengths and weaknesses. The anti-CIO narrative makes sense when it describes the negative consequences of prolonged crying. Most parents, regardless of their stance on CIO, would likely agree that listening to a baby cry is not an enjoyable experience. As one anti-CIO writer put it, "My heart breaks for all the babies who crave love and reassurance from their parents, only to be left crying, in the dark and alone, for prolonged periods" (Trayser, 2018). It makes sense that when infants cry without being attended to, they are experiencing sadness and can develop feelings of helplessness, which can cause them to give up on a parent responding. However, it can be a hard sell to get individuals to believe that sleep training an infant for just a couple of weeks will have life-long detrimental impacts or such serious negative outcomes like brain development damage or poor physical health. The consistent scholarly evidence provided to support these claims helps, but the causal leaps made can seem unbelievable at times. Minor negative outcomes seem plausible, but dire consequences can seem like a stretch to the average parent.

The theme about other cultures not using the CIO method also makes sense. This theme causes individuals to question why so many Westerners advocate this practice, and people in other parts of the world do not even consider it an option. Anthropological findings support this notion that infant sleep is not something that is “problematic.” In their paper synthesizing the anthropological research on infant sleep, Ball et al. (2019) discuss the normative practices that have been recorded by anthropologists for decades, and rather than being a problem, wakings and breastfeeding at night were considered “perfectly normal and not exceptionally burdensome” (p. 604). Regrettably, ethnocentric beliefs can easily cause individuals to dismiss this argument when evaluating their own behaviors. In many ways, this is fair given that support structures are limited in Western culture and families do not have the type of community or extended familial support that many mothers in other cultures benefit from. However, the problems extend further than this, as clearly evidenced in Tomori’s (2014) monograph on nighttime infant care practices. Tomori (2014) demonstrates that the Western biomedical model of infant sleep, and thus the recommendations that parents are bombarded with on a regular basis, conflict with the biological reality of infant sleep, particularly for breastfeeding mothers. When families do counter the cultural norm, they face stigmatization from both others in the community and professions (Tomori, 2014). Thus, the dominant cultural model forces families to ignore the evidence of other cultures in favor of the authoritative Western knowledge.

Another way that the anti-CIO narrative *adds up* lies in the crying is communication theme. This makes sense to anyone who has spent a significant amount of time around an infant. When babies need something, they cry: “Crying is a baby’s natural way of communicating and signaling his or her parents to inform them of a need” (Coste, 2019). It is believable that a helpless infant, one who cannot talk with words, cries to alert someone that they need something. Unfortunately, the counter belief that responding to infant cries too frequently can cause spoiling is strong. In fact, several studies suggest that between 20% and 50% of parents believe that infants younger than one year of age can be spoiled, and that, unless taught to respect authority, these infants are likely to become children who have conduct problems or other negative outcomes (Barton & Ratner, 2001; Socolar & Stein, 1995; Solomon et al., 1993). This disagreement about what messages infant crying is sending, communication of a need or manipulation, causes many parents to be indecisive about the believability of this assertion.

To summarize, the anti-CIO narrative’s probability is strengthened by the strategic use and understanding of scholarly evidence that is used to support both sides of this debate, yet it is weakened by extreme arguments made about life-long and seemingly unrealistic negative outcomes from prolonged crying, a lack of consistent solutions offered for poor sleep, and the popular disagreement over whether crying is communication or manipulation.

### **Narrative Fidelity**

Narrative fidelity assesses whether a story *rings true* with the real-life experiences of its audience. Evaluating the narrative’s fidelity is imperative when predicting whether the audience will accept or reject the values and ideas being presented by the narrative.

The main audience with whom this entire debate is aimed is parents and soon-to-be parents. Many times, the audience is comprised of extremely exhausted, sleep-deprived parents who are at their wits' end and are desperately looking for an answer to their sleepless nights. As told by Kiefer (2016), “By then, I had reached the end of my sleep deprivation rope. I was so tired I could barely string two thoughts together.” Although the overarching audience includes all distressed parents, there are also sub-audiences who typically support each side of this issue. For example, individuals who ascribe to the belief that infants cry to manipulate and can be spoiled if they are attended to too frequently might be

more likely to be persuaded by the themes in the pro-CIO narrative. However, individuals who believe that infant crying is about the communication of needs and that infants cannot be spoiled if you tend to them too frequently might be more likely to be persuaded by the anti-CIO narrative. Understanding belief systems and deep-seated values centered around parenting are therefore vital to assessing the fidelity of the pro and anti-CIO narratives.

Viewing these narratives through an ecocultural theory (Super & Harkness, 1986) lens highlights how deeply cultural values shape the CIO debate. Many of the pro-CIO narratives reflect Western ethnotheories (Harkness & Super, 2020) that emphasize infant self-regulation, individualism, and early independence. Conversely, anti-CIO narratives often draw on ethnotheories that prioritize responsiveness, co-regulation, and the belief that infants are not developmentally ready for extended distress (Harkness & Super, 2020). By situating the debate within these culturally grounded belief systems, the findings clarify that much of the public controversy emerges not from contradictory scientific evidence but from competing cultural models of infant development and parental responsibility.

Exhausted parents value sleep. In fact, all people value sleep. This is the driving value that the pro-CIO narrative uses to persuade parents to engage in a parenting behavior that they find trying: “Comforting your crying baby is a natural instinct, which often makes the crying it out method difficult for parents... Be ready for the first few nights to be especially difficult” (Kehoe, 2016). Although it is recognized as difficult, the CIO method is argued to produce quick results for a serious problem that all parents face (poor sleep). There is an additional assertion here that the benefits of consolidated household sleep outweigh the negative outcomes (if there are any) that the baby or parents might experience during or after the process: “It ain’t fun for the baby, but that shit worked. Everybody got some sleep” (Millner, 2012). The desire for consolidated household sleep *rings true* in the minds of fatigued parents; it is a strong value that all parents hold dear. If the audience has friends or family members in their real lives who also advocate the success of the CIO method, the fidelity of this narrative is further strengthened.

Exhausted parents also do not want their babies to experience negative outcomes. This is the driving value that the anti-CIO narrative uses to persuade parents to avoid the CIO method. As Millner (2012) notes:

It turns out that the [CIO method], where you ignore that your kid is screaming, crying and turning 40 shades of purple so that she can break herself out of the habit of being spoiled and cuddled to sleep, does more harm -- way more -- than good.

The anti-CIO narrative pulls at the heartstrings of the audience by detailing, often with scholarly evidence, the wide variety of problems that allowing a baby to cry alone can create. Further, the depiction of a small, helpless baby and a selfless mother devoting herself to helping her helpless baby is illustrated several times throughout the narrative as a persuasive tool. As Millner (2012) states:

It just didn’t feel right to let my child scream and holler and thrash by her little self in the dark in her crib when I knew full well that a little rocking in her glider, maybe a song and a sweet nuzzle of her cheek would send her off to dreamland. Granted, some nights that meant tons of rocking, but, to me, it was a small price to pay for feeling like I was mothering my baby and helping her feel like her mommy was there. Always there.

This analysis of values in no way means that parents who do not implement the CIO method do not value sleep or that parents who do implement the CIO method do not value the well-being of their

infants. Instead, the examination illustrates the extreme difficulty in the decision-making process that parents are faced with regarding sleep training. It is a choice between potentially hurting yourself (by experiencing negative outcomes associated with poor sleep) or potentially hurting your baby (by experiencing negative outcomes associated with an infant crying alone). This is a seemingly impossible decision, filling the minds of parents with an immense amount of dissonance.

Further complicating this decision is the fact that the purported benefits of the CIO method are immediate while the alleged consequences of the practice are delayed. It is a conundrum that has plagued a variety of health campaigns for decades. Convincing children to wear sunscreen, for example, by telling them that they could get skin cancer as adults if they do not, is often an arduous task. It is more persuasive to tell a child that their skin will burn soon after sun exposure if they do not wear sunscreen. An immediate consequence is much more alarming than a long-term hypothetical negative outcome. With the CIO debate, the only immediate change is a claim of better sleep, which is a positive outcome. The main negative outcome of damaged well-being is gradual, making it more difficult for many people to envision their future.

### **Discussion: Probability Plus Fidelity Equals Rationality**

While the probability of the pro-CIO narrative is enhanced by the consistent claim that the practice quickly enables everyone to experience better sleep, the probability of the anti-CIO narrative is enhanced by the utilization of a variety of scholarly evidence to support the narrative's themes. Complicating the evaluation, however, a lack of consistent scholarly evidence in the pro-CIO narrative and a lack of consistently cited alternative solutions in the anti-CIO narrative damage each story's probability. Overall, we argue that the anti-CIO narrative is stronger than the pro-CIO narrative in terms of probability.

The fidelity of each narrative is extremely convincing, especially when the persuasive appeals are directed at individuals whose parenting beliefs and practices are shaped by their ecocultural context and parental ethnotheories (Harkness & Super, 2020; Super & Harkness, 1986). This lens highlights that parents interpret narratives through culturally grounded assumptions about caregiving, infant needs, and family routines. For example, parents who prioritize independence in infant sleep may perceive pro-CIO narratives as aligning with their ethnotheories, whereas parents who emphasize co-regulation and responsiveness may find anti-CIO narratives more persuasive. Ecocultural theory emphasizes that these interpretations are not arbitrary but arise from the interplay of daily caregiving practices, societal norms, and family circumstances (Harkness & Super, 2020). By considering these frameworks, the analysis contextualizes why online narratives differ in appeal and why parents make divergent decisions even when exposed to the same information.

Although cry-it-out (CIO) is often portrayed as a contentious and polarized issue, much of this controversy emerges from public discourse rather than from a balanced scientific debate. In media spaces—including parenting books, blogs, social media platforms, and online forums—CIO is commonly framed as a highly emotional and morally charged decision (Ramos & Youngclarke, 2006; Rosier & Cassels, 2021). Competing narratives present the method as either a necessary step toward healthy infant sleep or a harmful practice that threatens parent-child attachment (CITE). These narratives frequently rely on personal testimonies, anecdotal experiences, or selective interpretations of research, which amplify the perception that experts are deeply divided. As a result, many parents encounter CIO not as a settled topic but as one laden with conflicting messages, cultural expectations, and heightened social pressure, all of which intersect with culturally shaped parental ethnotheories and caregiving routines (Geramo et al., 2009; Hince et al., 2017; Harkness & Super, 2020).

In contrast, the scientific landscape is considerably more nuanced and far less symmetrical than media portrayals suggest. A small number of influential studies—primarily randomized trials demonstrating short-term improvements in infant sleep—are frequently cited as evidence that CIO is both safe and effective (Gradisar et al., 2016; Weinraub et al., 2012). These studies receive substantial visibility in both academic and popular discussions, contributing to the assumption that they represent a strong scientific consensus. However, a broader but less publicized set of findings raises methodological concerns, documents potential physiological stress responses associated with extinction-based sleep training (Middlemiss et al., 2012), or questions whether behavioral sleep interventions produce long-term benefits for families (Belmonte et al., 2020; Nomaguchi & Milkie, 2020). In addition, several scholars argue that expectations for infant sleep independence reflect culturally specific parenting norms rather than universal developmental imperatives (Hince et al., 2017; Rosier & Cassels, 2021). Ecocultural theory and parental ethnotheories provide a framework for understanding why parents interpret these findings differently and how their caregiving beliefs and routines moderate the persuasive impact of narratives.

As Fisher (1987) claimed, “[n]o matter how strictly a case is argued – scientifically, philosophically, or legally – it will always be a story, an interpretation of some aspect of the world that is historically and culturally grounded and shaped by human personality” (p. 49). In this study, several cultural and individual factors could cause one of these narratives to become a better option in the minds of parents. The actual amount of sleep deprivation an individual is experiencing, the age of the infant, the number of other children in the family, the number of hours a mother and/or father spends employed each week, socioeconomic status, the quality of spousal support, and the number of hours an infant spends in childcare could all impact whether one narrative makes more sense than the other. By integrating ecocultural theory and parental ethnotheories, we emphasize that these individual differences are meaningfully structured by culturally informed beliefs and routines, which shape both the interpretation of narratives and actual parenting decisions.

While Fisher’s (1984) narrative paradigm provides a robust lens for analyzing the persuasive structure of online CIO narratives, the criticisms highlighted by Rowland (1989) and Warnick (1987) underscore important caveats. For example, the paradigm assumes that all communication can be evaluated as a narrative, but some content may not resonate universally or may oversimplify complex decision-making processes. In the context of this study, certain narratives—particularly those highly technical or medically oriented—may not function as stories in the classical sense, limiting the paradigm’s ability to fully capture their persuasive impact. Recognizing these limitations, the findings should be interpreted as an evaluation of narrative appeal rather than a definitive measure of parental reasoning or decision-making. By explicitly integrating these critiques, the study acknowledges the bounded applicability of the narrative paradigm and strengthens the rigor of the theoretical contribution.

The findings of this study align well with core principles of family science and family life education, particularly regarding how parents make decisions under conditions of stress and uncertainty. Family life education emphasizes that parents rely on a combination of personal beliefs, social norms, and perceived expertise when evaluating competing advice (Duncan & Goddard, 2020). The pro-CIO and anti-CIO narratives analyzed here illustrate how these informational environments shape parents’ cognitive appraisals of risk and benefit, consistent with stress and coping theory (Lazarus & Folkman, 1984). When parents are chronically sleep-deprived, emotionally overwhelmed, or unsure whom to trust, narrative coherence and perceived credibility may carry as much weight as empirical evidence—highlighting the need for practitioners and educators to provide clear, balanced, and accessible guidance that helps families navigate conflicting parenting messages. By situating CIO narratives within these

broader processes of parental decision-making, the study underscores how family science frameworks can explain why certain arguments resonate more strongly with different subgroups of parents and how educational interventions might more effectively support informed, values-aligned choices.

Furthermore, the findings of this study suggest several actionable strategies for family educators, counselors, and policy advocates who support parents facing conflicting sleep-training advice. Family life educators can play a crucial role in helping parents critically evaluate parenting information by teaching skills such as source appraisal, emotional regulation during decision-making, and identifying values-based choices (Duncan & Goddard, 2020). Educators may also wish to provide structured decision-making tools that guide parents through weighing empirical evidence, cultural beliefs, and family-specific needs, reducing the likelihood that exhausted caregivers rely solely on emotionally compelling but scientifically unsupported narratives. Offering workshops, handouts, or online modules that clearly distinguish between scientific consensus and media-generated controversy can help parents feel more empowered and less overwhelmed by the polarized discourse surrounding CIO.

For counselors and practitioners working directly with families, the results highlight the need to validate parents' stress while also offering balanced, evidence-informed guidance. Practitioners can help parents explore their underlying beliefs about infant distress, sleep expectations, and parental roles—dimensions that often shape reactions to CIO more strongly than the scientific evidence itself. Policy advocates may also use these findings to encourage the development of clearer public-facing guidelines on infant sleep that accurately reflect the state of the research and reduce reliance on popular-press narratives. Collectively, these practice-oriented interventions can help families navigate sleep-related decisions with greater confidence, reduced guilt, and a stronger alignment between their parenting practices and their developmental values and goals.

Individuals who can develop systematic sleep training methods and subsequently narratives about these methods that are easy to implement and can both help parents sleep while not causing any damage to infants would be most persuasive. There are many methods that families can employ, including, but not limited to, the following:

1. The most common alternative is what has recently been coined *breastsleeping* (McKenna & Gettler, 2016) and returns us to our biological roots by which mothers sleep in close proximity to their babies and breastfeed on demand. Not only is this what babies expect from a biological or evolutionary perspective (for a review, see Ball et al., 2019), but it has been found to improve mother's sleep (Kendall-Tackett et al., 2011), improve perception of infant sleep patterns (Rudzik & Ball, 2016), and is linked to greater breastfeeding behavior (Ball et al., 2016; McKenna & Gettler, 2016), something that is pushed even by the Western authority.
2. Positive bedtime routines and emotional availability is a second option. Creating a positive bedtime routine has been found to improve infant sleep (for a review, see Mindell, 1999), but perhaps more important than the actual routine is the issue of parental emotional availability. The more emotionally available parents are at nighttime, the better the sleep for infants and toddlers (e.g., Jian & Teti, 2016; Teti et al., 2010), but of course, this can be problematic for families who are stressed out and just looking for respite at the end of the day. However, knowing that children are looking for feelings of safety before sleep, parents may be able to overcome this to provide that emotional buffering to help with sleep.
3. A third alternative is to help families understand how sleep works and what features of our modern, Western society negatively impact infant sleep, so families can find ways of

overcoming this in their individual circumstances. For example, only recently have we learned how strong the impact of blue-wave light is on young children's melatonin production, which then has negative implications for sleep onset (e.g., Akacem et al., 2018), while bedtimes are often pushed to be too early given a young child's natural circadian rhythm, which results in more wakings overnight (e.g., LeBourgeois et al., 2013). Focusing on understanding the biology behind sleep, families can better understand what their children are doing and how they can best support them, but it often means changing their evening routines and possibly even forfeiting some of the "adult" time that is a staple in Western society, which can lead to resistance from the parents.

4. The fourth is what is referred to as *bedtime fading*, and it is a process by which families slowly push bedtime back based on how long it takes the child to fall asleep at night. When this is established through a quick bedtime process, parents can either leave things as they are or slowly bring bedtime forward again. This was one of the alternatives tested in Gradisar et al. (2016) and was found to be as good or better than modified CIO on the various outcome measures and is typically viewed as less stressful than CIO methods.

While these methods are available, they do not typically garner as much attention and are not generally viewed as easy to implement. In order for these options to be successful, they need to appeal to the most persuasive aspects of the narratives analyzed here while also avoiding the drawbacks of these stories.

To advance this field of study, experimental research that adjusts the competing narratives analyzed here so that the drawbacks are addressed would be quite interesting. If both arguments are strengthened, which narrative would be viewed as more persuasive and acceptable? Future research could also develop experiments that assess the effectiveness of the CIO method and of alternative methods for getting infants to sleep. While some would argue that this research already exists (e.g., Gradisar et al., 2016; Middlemiss et al., 2012; Price et al., 2012; Weinraub et al., 2012), as we explain, there are methodological issues with these studies and replication is needed before conclusive claims can be made. Thus, more research in this area would be very beneficial. In addition, future cultural analyses comparing sleep training beliefs, attitudes, and practices in a variety of countries would help others gain perspective about their own CIO beliefs. Lastly, all new research about sleep training methods needs to extend into the mainstream media, adding more evidence to the current narratives.

### Concluding Remarks

When infants and their parents struggle to experience enough quality sleep, parents often feel moderate to extreme uncertainty and stress about what actions they should take. This can cause new parents to seek out parenting information and advice (Plantin & Daneback, 2009); oftentimes, turning to the Internet for help (Radey & Randolph, 2009). Once they get there, as this analysis reveals, parents typically find a narrative for and a narrative against the use of the CIO sleep training method; each with its own set of claims, arguments, and supporting evidence. The plethora of information available online enables parents to find the advice they are seeking, but that advice also points them in many different directions. This does not help guide parents to best practices based on theory, with which the anti-CIO method narrative is more aligned. Further, individual differences and deeply held values and beliefs significantly impact a parent trying to sift through the evidence of both narratives when deciding whether or not to implement the CIO method with their infant.

The continued shift towards seeking parenting information and education online, coupled with the lack of consistent answers to questions about sleep training, creates unnecessary difficulties for

practitioners who are working closely with parents in need of support. It is imperative that individuals and entities of influence work together to more widely disseminate healthy alternatives to the CIO method, strengthen anti-CIO messaging, and give parents the tools needed to determine what is best for them and their child based on their child's needs and theory.

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