

## CHAPTER 32

# Reflections on the Mirror

## On Video Feedback to Promote Positive Parenting and Infant Mental Health

Marian J. Bakermans-Kranenburg  
Femmie Juffer  
Marinus H. van IJzendoorn

In this chapter we present and discuss an intervention that we have developed and thoroughly tested over the course of the past two decades: the Video-Feedback Intervention to Promote Positive Parenting and Sensitive Discipline (VIPP-SD). The VIPP-SD intervention is based on two theoretical perspectives that have not been combined previously, namely, attachment theory and social learning theory. For this reason, we start with an overview of these two theoretical perspectives, and how each of them has inspired intervention research. Despite differences, they share an emphasis on the importance of close observation of the moment-by-moment interactions between parents and children, and the appropriateness of parents' responses to children's signals and behaviors.

An effective way to take a closer look at child signals and behaviors, as well as caregivers' responses, is to make use of video. Video clips serve as powerful mirrors and stimulate deep reflections on the mirrored images of more and less synchronous parent-child interactions. We describe the role of video feedback in early childhood interventions, and provide an overview of the method, the themes, the modalities, and the feasibility of the VIPP-SD program. Next, we review the effects on caregiver sensitivity and infant mental health as evident from randomized controlled trials of VIPP-SD, with noted effects on positive parenting, attachment,

and decreased problem behavior. We conclude with a look into the future of early intervention.

### **Sensitivity and Sensitive Discipline as Predictors of Positive Child Development**

#### ***Attachment Theory***

An important dimension of parenting during infancy and the early childhood years is sensitive responsiveness or, in brief, sensitivity. "Parental sensitivity" has been defined as the parent's ability to notice child signals, interpret these signals correctly, and respond to these signals promptly and appropriately (Ainsworth, Bell, & Stayton, 1974). Sensitivity has been linked to secure infant-parent attachment (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003), and securely attached children tend to show lower levels of both internalizing and externalizing problem behaviors, and to be more socially competent (Groh, Fearon, van IJzendoorn, Bakermans-Kranenburg, & Roisman, 2017). These associations do not wane, but become stronger over time, demonstrating the significance of early security for children's social-emotional adaptation over the course of development from infancy to early adolescence.

One of the linking mechanisms responsible for such long-term influences may be children's internal working models of attachment

relationships (Bowlby, 1969/1982; Bretherton & Munholland, 2016). Children form scripts of interactions with their caregivers, and repeated secure-base interactions are represented in the form of a secure-base script, shaping expectations about new interactions and new interaction partners. In the case of a secure internal working model, these expectations are positive, paving the way for smooth social–emotional adjustment. Moreover, sensitive parents help their children regulate their emotions, which promotes more optimal self-regulation in securely attached children, which in turn enhances child social–emotional development and dealing with others’ emotions. Long-term effects on neurobiological systems involved in stress regulation have also been documented (Fearon, Groh, Bakermans-Kranenburg, van IJzendoorn, & Roisman, 2016).

In addition to the impact of parental sensitivity on children’s development via attachment, direct influences of sensitivity have been documented on a broad range of outcomes, varying from the level of brain structure and function (Kok et al., 2015) to cognitive development and prosocial behavior (Shaver, Mikulincer, Gross, Stern, & Cassidy, 2016): Caregivers who provide sensitive and effective care create an environment scaffolding cognitive growth through exploration, and they also present an empathic model to follow when meeting others who are in need of support (Sroufe, Egeland, Carlson, & Collins, 2011). On the other hand, negative social expectations, a lack of motivation to internalize rules, and poor self-regulation skills have been proposed as mechanisms underlying the association between insensitive parental care and the development of behavior problems (DeKlyen & Speltz, 2001; Greenberg, 1999).

The best predictor of later psychopathology, especially in the context of other risk factors, is “disorganized attachment” (DeKlyen & Greenberg, 2016), which is the breakdown of an organized strategy of emotion regulation in the presence of the caregiver. In normal, middle-class families, about 15% of the infants develop disorganized attachment behavior, but in disadvantaged social contexts and in clinical groups this percentage may become two or even three times higher. Among the precursors of disorganized attachment are maltreatment and “anomalous” (e.g., frightened or frightening and dissociative) parenting behaviors (Madigan et al., 2006). These parenting behaviors may lead to emotional dysregulation in the child because

the parent is at the same time both the source of fright and the only potential haven of safety. In the face of this paradoxical situation, the infant’s organized strategy to deal with stress falls apart (Main & Hesse, 1990).

### *Social Learning Theory*

Another well-studied dimension of parenting that plays a role in the prediction of later adaptation is parental limit setting, or discipline. Discipline becomes increasingly important when sweet babies turn into terrible toddlers. Beyond infancy, parents should not only respond sensitively to their children’s needs but also teach their children rules and limits in an effective way. Negative control and harsh discipline, as well as laxness and a lack of monitoring, are associated with more child behavior problems than gentle but firm discipline and an authoritative parenting style (Baumrind, 1978; Kochanska, Aksan, Prisco, & Adams, 2008).

From a social learning perspective, ineffective parental discipline behaviors resulting in coercive cycles provide fertile ground for the development of behavior problems (Patterson, 1976, 1982; Snyder, 1995). Based on longitudinal studies from early childhood through adolescence, Patterson and Reid (1984) developed microsocial coding systems for behavior as it unfolds in real time in home environments. These formed the basis for coercion theory, which identifies specific parenting practices, such as low rates of positive reinforcement and high rates of harsh and inconsistent limit setting that are associated with later disruptive and antisocial child behavior. Coercive cycles in families are characterized by noncompliant child behavior, followed by ineffective parental discipline, culminating in escalating conflicts with the parent ultimately giving in to the child (to stop the child’s increasing protest and resistance). Patterson (1982) observed that in such cases, the child “trains” the parent to give in, and the scenario of the child challenging the rules and the parent’s inability to maintain the rules will occur with increased frequency in the future: The child’s aversive behaviors are reinforced (i.e., rewarded by termination of the undesirable stimulus). Related processes include inconsistent parental discipline and lack of positive reinforcement for compliant and prosocial child behaviors. Negative reinforcement processes have been related to the development of externalizing

problems in school-age children (e.g., Patterson, 1982; Prinzie et al., 2003).

### **Implications for Intervention Programs**

An ideal intervention program whose aim is to support positive parenting behavior as the proximal goal and promote positive child development as the more distal goal should take these two approaches and the accompanying empirical evidence into account. A focus on sensitivity is not sufficient, especially for parents with children between ages 2 and 5 years: Discipline is an essential aspect of parental care. In addition, but not unrelated, anomalous parenting and maltreatment should be targeted in parenting interventions—parental harsh discipline or maltreatment may stem from parents' lack of adequate discipline strategies. And, despite their differences, attachment theory and coercion theory are in agreement when they emphasize the importance of nonaversive interactions in the socialization process, and assume a transactional developmental process, with a focus on the appropriateness of parents' responses to children's signals and behaviors (see Stevens & N'zi, Chapter 33, this volume).

### **Promoting Sensitivity and Sensitive Discipline through Intervention**

Can caregiver sensitivity and attachment security or the use of sensitive discipline strategies be promoted through intervention? Over the years, a broad range of interventions have been developed. Some of these start even before the birth of the baby with a preventive aim; others are meant to correct maladaptive parenting and are used in samples with substantiated maltreatment.

### **Effectiveness of Sensitivity Interventions**

To examine what works for whom, we meta-analyzed the effectiveness of attachment-based interventions whose aim is to improve parental sensitivity and infant attachment (Bakermans-Kranenburg et al., 2003). We traced 70 studies with effect sizes for sensitivity and/or attachment. We distinguished three types of approaches: interventions aimed at enhancing parental sensitivity (e.g., information on infant development, or modeling of touch and massage, or video feedback), efforts to affect the

parents' mental representation (e.g., examination of the internal working model of the parent in relation to the infant, or reexperiencing of the past), and the provision of social support (e.g., facilitating access to appropriate community services providing clothes, food supply). Any combination of these approaches is possible as well.

Three important conclusions emerged from the meta-analytic results. First, nonrandomized studies show inflated effect sizes. Randomized interventions appeared rather effective in changing insensitive parenting ( $d = 0.33$ ), but in nonrandomized studies the combined effect size increased to  $d = 0.61$ . Although the rigor of a randomized controlled study is seldom attractive to those who want to help families do better and argue for sooner rather than later implementation, the difference in effect size for randomized and nonrandomized studies shows that the flaws and biases of nonrandomized studies prevent sound conclusions about intervention effectiveness (Evans, 2003). For (indirect) intervention effects on infant attachment security the combined effect size of the randomized studies was  $d = 0.20$ .

The second conclusion is that the most effective interventions in enhancing parental sensitivity were also effective in promoting infant attachment security. This is no trivial finding because it demonstrates the causal role of caregiver sensitivity in shaping attachment. Numerous studies had shown the correlational link between caregiver sensitivity and attachment security (see De Wolff & van IJzendoorn, 1997), but only experimental evidence demonstrating that increased sensitivity leads to more attachment security warrants conclusions about the causal direction of the effect (Bakermans-Kranenburg et al., 2003).

The third conclusion was that the most effective interventions had a moderate number of sessions and a clear-cut interactional focus. Interventions that offered only support or therapies that focused on the caregiver's mental representation of attachment were not successful in improving caregiver sensitivity or the quality of the infant's attachment relationship. Interaction-focused interventions may not cure parental depression or unresolved past experiences, but they do improve parental sensitivity and the infant-parent attachment relationship.

A recent update of the 2003 meta-analysis traced only four more randomized controlled trials with children under 36 months of age,

with reported effects on maternal sensitivity and/or infant–mother attachment security published between 2002 and 2015 (Mountain, Cahill, & Thorpe, 2017). The authors concluded that these four studies would not change the pattern of results or the conclusions of the previous meta-analysis, which were summarized in the title of Bakermans-Kranenburg and colleagues' 2003 article: "Less is More."

### *Preventing Disorganized Attachment*

With regard to the prevention of disorganized attachment, the overall combined effect size in this set of intervention studies was not significant, but interventions with a interactional focus on sensitivity were most effective ( $d = 0.24$ ), and significantly more effective in reducing attachment disorganization than interventions that (also) focused on support and parent's mental representations (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2005). Moreover, interventions were more effective in studies with higher percentages of disorganized attachment in the control groups. Although none of the interventions was specifically designed to target parental frightened/frightening behavior, a documented precursor of attachment disorganization, disorganized attachments may diminish both as a direct and as an indirect effect of sensitivity-focused interventions. Sensitivity-focused interventions may address and change anomalous parenting (a direct intervention effect), while for a sensitive caregiver the infant may also be a more salient focus of attention, preventing the intrusion of thoughts related to unresolved issues that trigger frightening or frightened behavior (an indirect intervention effect) (Schuengel, Bakermans-Kranenburg, & van IJzendoorn, 1999). Indeed, intervention based on the video-feedback approach, promoting caregiver sensitivity, has been found successful in the reduction of disorganized attachment in a maltreatment sample (Moss et al., 2011, 2017).

In recent years Mary Dozier and colleagues developed the Attachment and Biobehavioral Catch-Up (ABC) intervention (see Dozier & Bernard, Chapter 31, this volume), which—in line with the meta-analytic findings—focuses on sensitive parenting behaviors. One of the 10 home-based intervention sessions explicitly targets frightening parenting behaviors such as yelling, grabbing roughly, and intruding in the child's space, in order to reduce disorganized attachment (Dozier & Bernard, 2017). After the

ABC intervention, children showed significantly lower rates of disorganized attachment (32%) and higher rates of secure attachment (52%) relative to the control condition (57% and 33%, respectively).

In a recent update of the meta-analysis of intervention effects on disorganized attachment, Facompre, Bernard, and Waters (2018) found seven new studies with 708 participants that had been published after 2005. Results showed that, overall, interventions had become effective in decreasing rates of disorganized attachment: The combined effect size was now significant ( $d = 0.35$ ). The increase in combined effect size compared to the earlier meta-analytic effect size ( $d = 0.05$ ) may result from recent interventions targeting parenting behaviors that are related to disorganized attachment (e.g., the ABC intervention), or because recent studies have included more severe at-risk samples: Moderator analyses showed greater intervention effectiveness among studies targeting disorganized attachment behaviors in maltreated samples than in samples without maltreatment (Facompre et al. 2018), which converges with the earlier meta-analytic finding of larger effect sizes in studies with higher rates of disorganized attachment in the control groups (Bakermans-Kranenburg et al., 2005).

### *Effectiveness of Discipline Interventions*

Social learning theory and coercion theory have also inspired a range of parenting intervention programs, in particular with a focus on parents' management of difficult, externalizing child behavior. Among these programs are the Parent Management Training—Oregon Model, an individual and group-based parenting program for families with children and adolescents (Forgatch, Rains, & Knutson, 2002); Parent–child interaction therapy, with *in vivo* coaching strategies for parents and young children (Eyberg et al., 2001); Treatment Foster Care Oregon, a family-based intervention for preschoolers through adolescents with severe behavior problems in child welfare and youth justice settings (Fisher & Chamberlain, 2000); and the Incredible Years, a parenting- and school-based intervention for preschoolers (Webster-Stratton, 2015).

Social learning theory-based parenting programs have been tested thoroughly over the years; the first randomized controlled trials were conducted in the 1970s, and there may be over 200 randomized trials by now (see Furlong

et al., 2012). What the intervention programs have in common is that they apply modeling and reinforcement to family relationships, and use strategies that promote building warm relationships with children and managing parental stress (Gardner & Leijten, 2017). Most of these interventions are group-based: Parents are invited to weekly sessions in groups of 10–14 parents, with trained group leaders. Methods used in the group context include problem solving, discussion of videos illustrating various parenting strategies, and role playing. Effect studies have shown that improvement of the parenting behaviors on which the intervention programs focus (parental positive reinforcement, limit setting, monitoring) do indeed predict better child and adolescent development (Fisher & Skowron, 2017; Hakman, Chaffin, Funderburk, & Silovsky, 2009).

### ***Implications for an Intervention Aiming at Sensitivity and Sensitive Discipline***

At first sight, attachment theory and social learning theory seem to be quite different theoretical perspectives. Nevertheless, they share a focus on the importance of consistent, predictable, and responsive parenting, and both use and give much weight to close observation of the moment-by-moment interactions between parents and children. Whereas the issue of sensitive responsiveness is addressed in attachment theory, the importance of effective discipline strategies is central to social learning theory and coercion theory. Therefore, the combined perspective may be useful for parenting intervention programs that extend beyond infancy, with attachment being relevant from the cradle to the grave, and sensitive parental discipline needed when sweet babies turn into terrible 2's and 3's and 13's. The significance of moment-by-moment parent-child interaction that is stressed in both theories lays a clear foundation for the use of video feedback in intervention.

### **The Added Value of Video in Parenting Interventions**

In early childhood interventions, parents are often supported with parenting advice during group-based treatments or during individual sessions at a clinic or in home visits. In many cases, this advice is based on conversations about the problems the parents face with their child on a daily basis. However, these conversa-

tions may be colored by the parents' own past experiences, their expectations, and possibly selective observations. A closer, detailed look at the child's actual behavior may offer fruitful openings to more optimal parenting strategies and the reduction of interactional problems. Offering feedback with "on-the-spot" or "in-the-moment" comments (Dozier & Bernard, 2017) is one way to focus on concrete, observable child behaviors. In this case, parents have access to immediate feedback on how they parent their child, and this may support their use of more optimal parenting behaviors. Another way to focus on the child's actual behavior is to use video in early childhood interventions.

### ***The Use of Video in the Intervention***

There are several reasons why video is an effective and widely used method in attachment-based and interaction-focused interventions (Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2017a, 2017b; Juffer & Steele, 2014). Video enables very precise observations of even subtle behaviors of children and parents, while interveners can use "speaking for the child" by providing "subtitles" to the child's behavior, emotions, and expressions shown on the video (Carter, Osofsky, & Hann, 1991). Parents are thus stimulated to see their child's perspective; consequently, their observational skills may improve. Accurate observation of children's behavior is one of the crucial elements of Mary Ainsworth and colleagues' (1974) construct of parental sensitivity. Moreover, the intervener can show and reinforce positive moments of parent-child interaction, thus empowering the parent to respond to the child in a prompt and adequate way—the other essential element of Ainsworth and colleagues' sensitivity construct. Finally, through reviewing videos of daily interactions with their child, parents may be stimulated to reflect on their parenting behavior, including the emergence of "coercive cycles" (Patterson, 1982), requiring limit setting, with the video recordings serving as a mirror to reflect the interactions.

Today video is widely used in a large variety of interventions and home-visiting programs. When we started our intervention research in the 1980s, Lambermon and van IJzendoorn (1989) found that providing parents with a videotaped role model—that is, showing videos of an unknown mother interacting in a sensitive way with her child—did not change the target mother's behavior. Apparently, parents

have problems identifying with a parent or child model as portrayed on the video and consequently may not feel encouraged to integrate the modeled parenting behavior into their own daily life. At the same time, we started to use video feedback with parents, and we discovered that these identification problems did not occur. With video feedback, parents are recorded interacting with their own child, and they are shown these videos soon afterwards. Video feedback may serve as a mirror to see and reflect on one's own parenting behavior (Juffer & Steele, 2014), supported by an intervener who is providing feedback to the parent on relevant aspects of the parent's own parent-child interactions.

In contrast to feedback in the moment (Dozier & Bernard, 2017), video feedback can be prepared in advance, enabling the intervener to reflect on the needs of the dyad and prepare the most optimal advice. The largest advantage, however, is that with video feedback, concrete child and parent behaviors can be shown and repeated several times (even behaviors the parent was not aware of), and the video can also be paused at positive moments—for example, when the parent and child share excitement or joy. In VIPP-SD, video feedback is seen as not only an effective method to work with parents but also an essential ingredient of the program.

### The VIPP-SD Program

One of the key features of VIPP-SD (Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2008, 2017a, 2017b) is the use of video feedback. Another essential element in the intervention is building a “working alliance” (Stolk et al., 2008)—a trusting and empathic relationship—between the parent and intervener (see also Bowlby, 1988). Other crucial aspects of the VIPP-SD program are that parents are recognized as the experts on their children and their own behavior is the basis of—and the model for—change. Parents are thus empowered with (more) positive parenting experiences on which they can rely during (future) daily interactions with their child. Interveners work with video feedback to initiate and consolidate these processes because video feedback provides unique opportunities to promote parents' accurate observation and understanding of their child, and also enables the reinforcement of positive moments in parent-child interactions.

### Intervention Method

The VIPP-SD program is standardized and individualized, which means that interveners work from a standard protocol but attune the guidelines from the protocol to the specific parent-child dyad, resulting in individualized video feedback. The duration of each intervention home visit is approximately 1½ hours. Each intervention visit starts with filming parent-child interaction and continues with video feedback based on the recordings of the previous visit. Parent and child are videotaped during daily situations at their home—for example, playing together, reading a children's book—during relatively brief episodes of usually about 10 minutes. Parents are encouraged to react to their children the way they normally do.

Between the home visit and the next intervention session (typically 2 weeks later), the intervener reviews the video recordings on her own and prepares feedback on the parent-child interaction as shown on the video. First, the intervener evaluates the interaction profile of the parent by acknowledging positive but also less optimal interaction skills (e.g., when the parent reacts negatively to child signals such as crying or protesting). The intervener then writes down comments for the feedback, inspired by the profile needs and directed by the guidelines of the protocol. The recordings are screened for suitable moments to connect the information in the guidelines to the video. The resulting script is connected to the time codes on the video and serves as a guide for the video feedback in the intervention session. The whole range of minutes of recorded video is covered in the script. For a second opinion or advice, the script can be reviewed in a session with peer interveners or supervisors before the actual intervention takes place. To deliver the intervention as prepared, the intervener has her script available during the video feedback in the intervention session.

### Themes

Based on attachment theory (Ainsworth et al., 1974; Bowlby, 1969/1982), themes for parental sensitivity were formulated, while themes for sensitive discipline were derived from social learning/coercion theory (Patterson, 1982). In all intervention sessions, specific themes for sensitive parenting, as well as specific themes for sensitive discipline (see Table 32.1), are highlighted with video feedback. In the final

two booster sessions, all themes are repeated. In these booster sessions, newly acquired parenting behaviors can be reinforced and possible changes consolidated, while there is room to address possible (new) concerns or questions from the parent.

For *sensitive parenting*, the VIPP-SD program closely follows the two main components of Ainsworth and colleagues' (1974) construct of sensitivity: (1) accurate perception and interpretation of the child's signals and behavior and (2) prompt and adequate reactions to these signals. In the first and second intervention sessions, parents are encouraged to accurately observe and interpret their child's behavior on the recorded video fragments. To enable this, the intervener uses the "speaking for the child" technique (mentioned previously) and kindly invites the parent to join this process. During the third and fourth sessions, parents are supported to respond to their child's behavior and expressions in an adequate, sensitive way by showing positive interaction moments. For *sensitive discipline*, relevant themes to enable firm and sensitive limit setting are highlighted during the intervention sessions. For example, in the first session, parents are encouraged to use inductive discipline by explaining to the child the reason for their commands and limits, thus helping the child to internalize parental rules and develop empathy with other people's interests. In the second intervention session, parents are asked to use positive reinforcement, such as giving compliments, more often to actively support child compliance to parental rules and limits.

### **Modalities and Implementation**

The VIPP-SD program is home-based and short term: The interventions are implemented in the home or child care setting in a modest number of visits, usually six sessions (see Table 32.1). The intervention program can be used with-

out the Sensitive Discipline component (VIPP; often used with parents up to the infant's first birthday) or with this component (VIPP-SD) when families with terrible 2's and older children up to 6 years of age are targeted. VIPP-SD can be implemented in a broad range of clinical and nonclinical families and in child care settings. Adaptations in terms of observation settings and feedback have been made for optimal fit with parents or children at risk (e.g., children at high risk of autism; Green et al., 2015, 2017), specific families (e.g., minority families; Yagmur, Mesman, Malda, Bakermans-Kranenburg, & Ekmekci, 2014), and home-based or center day care (e.g., Groeneveld, Vermeer, van IJzendoorn, & Linting, 2011).

Of course, the VIPP-SD program, with its modest number of sessions, is not and cannot be a panacea for all parental or family problems. VIPP-SD has been developed not to cure parents' social-emotional problems but to enhance the quality of parent-child interactions, even though the parent may be suffering from social or psychological issues. Therefore, dependent on the population being served, a useful framework is to combine VIPP-SD with other treatment modalities. For example, in a study on mothers with eating disorders, the mothers received not only VIPP to support parent-child interactions during mealtime but also a guided cognitive-behavioral self-help manual to address their eating problems (Stein et al., 2006). VIPP-SD can therefore be implemented not only as a stand-alone intervention to support vulnerable families or to enhance professional skills in child care, but also as a "building block" by combining the intervention with other or longer treatment.

### **Feasibility, Program Attendance, and Fidelity**

VIPP-SD is implemented in the home or in a child care setting because the intervention focuses on recording and reinforcing naturally

**TABLE 32.1. Themes in the VIPP-SD Program**

Session	Sensitive parenting	Sensitive discipline
1	Exploration versus attachment behavior	Inductive discipline and distraction
2	"Speaking for the child"	Positive reinforcement
3	Sensitivity chain	Sensitive time-out
4	Sharing emotions	Empathy for the child
5 and 6	Booster sessions	Booster sessions

occurring parent–child interactions in daily situations. Also, parents may find it easier to integrate new behaviors into their daily life when these behaviors have been practiced in the home, and the home setting usually is a safe place to receive personal feedback (see also Juffer, Struis, Werner, & Bakermans-Kranenburg, 2017). In addition, parents with preschool-age children may find it difficult to travel to health services or clinics, and they may be more likely to cancel visits for these reasons. In studies testing VIPP-SD, it appeared to be feasible to implement the program in a wide range of clinical and non-clinical families, including hard-to-reach families with maltreating parents (Moss et al., 2011) or highly deprived, high-risk parents (Negrao, Pereira, Soares, & Mesman, 2014).

By offering VIPP-SD at home, we increase the chance that parents will complete the entire program. In studies testing VIPP-SD, we found that program attendance is usually high. For instance, in a sample including parents of toddlers with high levels of externalizing problem behaviors, all 120 families in the intervention group received all six home visits (Van Zeijl et al., 2006), although lower attendance rates may be expected in high-risk or impoverished samples (e.g., Negrao et al., 2014).

Treatment fidelity checks to control competence of the interveners and adherence to the protocol can be performed during the intervention process by watching the video recordings and reading the script for the personal video feedback of a specific session (acknowledging the themes and guidelines that should be addressed during that particular intervention session). In a study testing VIPP-SD, fidelity checks performed in each of the six intervention sessions in approximately 10% of the participating families showed that in all cases, the intervention had been delivered as intended (Van Zeijl et al., 2006). Furthermore, fidelity can be supported by completing a standardized logbook after each intervention session (see, e.g., Hodes, Meppelder, Schuengel, & Kef, 2014) and by regular peer review and supervision meetings during the intervention process.

### **Training**

Interveners work with a manualized protocol, after formal training and supervised practice. To become a VIPP-SD intervener, training opportunities are offered on a regular basis at various places in the world, including the United King-

dom, Italy, and the United States (for an actual overview, see [www.vippleiden.com](http://www.vippleiden.com)). During a 4-day workshop, participants are taught the basic principles of the VIPP-SD program (Juffer et al., 2008) and start working with the protocol (manual VIPP-SD version 3.0; Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2015). The manual and training workshop are available in several languages (English, Spanish, Italian, and Dutch). Training in the VIPP-SD program is open to individuals with a relatively broad range of educational and vocational backgrounds, including (child) psychologists, therapists, social workers, family coaches, child care workers, and mental health professionals. After the training workshop, participants start with a practice case, supervised by a VIPP-SD supervisor. After having completed this practice case successfully, participants receive the certificate of VIPP-SD intervener. When they start working with the program, new interveners are advised to join a VIPP-SD review group, where peers learn from each other's experiences.

### **Effectiveness of the VIPP-SD Program**

The effectiveness of VIPP-SD has so far been examined in a number of studies, including 12 randomized controlled trials. Some of these included children at risk (e.g., high levels of externalizing behavior, adopted children, children with autism spectrum disorders), parents at risk (e.g., poverty, maltreating parents, parents with eating disorders), and two studies focused on child care settings. With infants under 1 year of age, the sensitive discipline component was dropped; studies with children after their first birthday always included the focus on sensitive discipline. A narrative review of each of these studies may be found in Juffer and colleagues (2017b). Positive parenting increased as a result of the intervention in all studies, and several indices of child behavior were positively affected as well (Juffer et al., 2017a). The two child care studies showed that the VIPP program adapted for child care has the potential to increase the quality of the caregiving environment in child care.

### **Meta-Analytic Effects on Sensitivity and Infant Mental Health**

We meta-analyzed the results of the 12 randomized controlled trials (including 1,116 parents and caregivers) testing the effectiveness

of VIPP-SD on sensitive parenting. The studies showed a combined effect size of  $d = 0.47$ . This implies that sensitivity increased about half a standard deviation as a result of participation in the VIPP-SD program. Six studies involved samples with parents at risk, and the combined effect size for these six studies was  $d = 0.54$ . The four studies including children at risk showed a combined effect size of  $d = 0.41$ . The difference between these two combined effect sizes is not significant, implying that the VIPP-SD program is as effective in samples with children at risk for problematic development as it is with parents at risk for insensitive parenting.

Is the intervention also effective in improving child outcomes? Because the VIPP-SD intervention aims at promoting positive parenting, the caregivers are the recipients of the intervention. Any effect on improved child outcomes is an indirect effect through effects on caregiver behavior because children are not directly targeted in the intervention. As with other interventions targeting sensitivity, child outcomes are anticipated to be somewhat weaker than effects on caregiver sensitivity and sensitive discipline. Nevertheless, these child effects may be stronger for some children than for others (dependent on variation in their susceptibility to environmental influences, see below). The meta-analytic combination of the randomized controlled trials testing the VIPP-SD revealed a combined effect size for improved child outcomes of  $d = 0.37$ . In four studies, effects on attachment were measured; the combined effect size for increased attachment security or decreased attachment disorganization was  $d = 0.36$ . The seven studies that assessed child problem behavior showed a combined effect size of  $d = 0.26$  for reduced child problem behavior. Moreover, the effects of similar strength remained over time: Follow-up studies ranging from 1 year up to 6 years after the intervention revealed a combined effect size of  $d = 0.25$ . VIPP-SD thus promoted long-term improvement in child outcomes that are probably related to the effects on positive parenting.

### **Mediation: Effects “under the Skin”**

If the intervention is related to long-term improvement of child problem behavior, a crucial question is how the VIPP-SD effects are embodied in parents and children. Neurobiological ef-

fects may mediate effects on behavior, and such neurobiological effects may even be necessary to achieve intervention effects in not only the short term but also the long term. Research illuminating such effects is not yet abundant. We found positive changes in cortisol production in toddlers participating in VIPP-SD even 2 years after the intervention (Bakermans-Kranenburg, van IJzendoorn, Mesman, Alink, & Juffer, 2008). These hormonal changes are likely connected to a cascade of neurobiological changes as a consequence of improved parental sensitivity and sensitive discipline.

Using event-related potentials (ERP), we are currently testing the effects of the VIPP-SD interventions on mothers' neural reactions to pictures of child faces with various emotional expressions (Kolijn et al., 2017). We expect that after the intervention, mothers will show stronger ERP responses to emotional child faces compared to neutral faces, when they have learned during the intervention to pay more attention to their children's (sometimes subtle) signals as part of the infant-parent communication (see also Bernard, Simons, & Dozier, 2015). To trace other links in this cascade, from epigenetic changes influencing the expression of genes to changes in neural connectivity in the brain in both caregivers and children, is a major challenge for future research into the mechanisms of interventions effects.

### **Moderation: Differential Efficacy**

Another important question is whether VIPP-SD is equally effective for all children and parents. There is accumulating evidence for differential susceptibility, also in the context of interventions (Bakermans-Kranenburg & van IJzendoorn, 2015). Some children and adults may be more susceptible to environmental influences, both for the worse (in untoward environments) and for the better (in good environments, or when positive changes appear). This points to the hidden efficacy of interventions, which are experimental manipulations of the environment for the better. In specific subgroups the intervention may be more effective than the overall effect size suggests.

For VIPP-SD, particularly strong effects have been found in children with difficult temperaments and children with a specific variant of the dopamine D4 receptor gene (*DRD4*). These children were most susceptible to changes in

their caregiving environment: Temperamentally difficult children showed more secure attachment behavior after a change for the better in their mothers' sensitivity (Klein Velderman, Bakermans-Kranenburg, Juffer, & van IJzendoorn, 2006), and children with the *DRD4* 7-repeat allele showed the strongest decrease in externalizing behavior and daily cortisol production after participation of their mothers in the VIPP-SD program (Bakermans-Kranenburg, van IJzendoorn, Mesman, et al., 2008; Bakermans-Kranenburg, van IJzendoorn, Pijlman, Mesman, & Juffer, 2008). Their mothers' increased use of sensitive discipline mediated this effect. In the future, intervention efforts may be adapted in a way that provides optimal susceptibility fit with the recipients of the VIPP-SD program.

### Future Directions

VIPP-SD has been applied to families with a wide variety of mild to severe issues in the parent-child relationship, such as risk for child externalizing problems, autistic symptoms, and eating problems, as well as for parental depression, family violence, and poverty. What lies ahead? Our aim is to adapt the intervention for prenatal use. We are testing its feasibility as a diagnostic intervention instrument, and exploring the possibilities of bringing VIPP-SD to a scale that makes a social difference.

### *New Modalities: VIPP before Birth*

The video feedback intervention has not yet been used before the child is born, for the simple reason that feedback on videotaped parent-child interaction can only be provided when the child is present. Nevertheless, it might be useful from a preventive perspective to focus on improving parenting skills before the child is born, or even conceived.

Currently, pilot studies have been started to explore the feasibility of a VIPP-like intervention, using an infant simulator to assess sensitive responsiveness. The life-like baby doll can be programmed to be more or less demanding (in terms of crying, feeding, diapering) and has been shown to trigger parental sensitivity that is highly correlated with parental sensitivity to one's own infant (Leiden Infant Simulator Sensitivity Assessment [LISSA]: Bakermans-Kranenburg, Alink, Biro, Voorthuis, & van

IJzendoorn, 2015; Voorthuis et al., 2013). It might be possible to prepare prospective parents already in an early stage, before conception (or before adoptive/foster care placement), for the demands of parenthood by having them experience the infant simulator across several days and nights (Voorthuis et al., 2013) and providing feedback on ways in which they try to console the distressed baby doll. Although the communicative repertoire of the infant simulator is restricted, it may be possible for the intervener to speak for the baby, to reinforce happy instances of effective interactions with the baby doll, and to show several ways in which parents might prevent crying from becoming persistent.

After conception, but before the child is born, already quite a lot of interactions between parents—both prospective mothers *and* fathers—and the fetus may be going on, for example, when the fetus moves and parents-to-be touch the woman's abdomen. Ultrasound recordings of the fetus may have a major impact on the pregnant female and her partner as they, for the first time, see the rapid growth and variety of movements and responses of the fetus to external noise (music, voices) and touches. Ultrasound recordings may yield excellent stimuli for reflection of the parents on the basic needs of the infant for exploration, as well as for proximity and stress regulation through sensitive interactions. It might be exceptionally rewarding to observe immediate fetal responses to specific parental actions, such as talking, singing, or touching. We are currently testing this prenatal VIPP program with prospective first-time fathers. The idea of infants as communicative individuals from the very beginning of their existence might emerge or be strengthened in video feedback sessions in which videotaped parental interactions during ultrasound recordings are discussed and reflected upon. It might make prospective parents aware that already at an early stage, their child develops and prospers through interactions with protective and responsive parents.

### *Dynamic Diagnostics with VIPP: Parental Capacity to Change*

Diagnoses of emerging and developing behavior problems and psychopathology in children and the role of their parents in provoking these problematic behaviors and atypical developmental trajectories are usually static, in at least

three ways. First, in many cases, diagnostic approaches are thought to be finalized when the parent and/or the child receives a categorical diagnosis, for example, based on DSM or ICD criteria. Second, conventional diagnostic methods do not assess the capacity of parents to change their interactions with the child and to enhance the quality of their sensitive responsiveness through participation in supportive interventions. Third, traditional diagnostic tools are not equipped to examine whether the children involved are more or less susceptible to changes in their environment, for better or for worse (Bakermans-Kranenburg & van IJzendoorn, 2015). Static diagnoses often do not point at effective interventions or therapies, and the connection between diagnosis and therapy remains rather loose. Dynamic assessment of the parental capacity to change, and of the child's susceptibility to that change, might close this gap.

As an example, decisions about out-of-home placement of children at risk for maltreatment or who are already victims of family violence often are based on the static diagnosis of the maltreatment event and the availability of alternative (foster) care arrangements (Budd, 2001; Platt & Riches, 2016). The American Psychological Association's (1998) *Guidelines for Psychological Evaluations in Child Protection Matters* requires evaluating parental capacity to meet the needs of their child. But in clinical practice, the guidelines often seem to be met when social workers and clinicians observe parent-child interactions in the laboratory or at home, whereas the only demonstration of *potential* functional abilities and proof for a recommendation of an effective treatment would be the implementation of a supportive intervention to enhance the quality of parental interactions.

Harnett (2007) has proposed four steps in the assessment of parents' capacity to change: (1) conducting a pretest assessment of the parents' current functioning, (2) specifying operationally defined targets for change, (3) implementing an evidence-based intervention aimed at the identified targets for change, and, last but not least, (4) observation of progress toward the goals over time, including evaluation of the parents' motivation to engage in the intervention. Basically, this is a dynamic diagnosis of the parent's capacity to improve his or her interactions with the child when parenting support is provided. In addition to observations of parenting as an outcome of the diagnostic intervention, the child's development toward

more adaptive functioning and less behavioral or psychological problems should be examined as well. Careful description of process and outcome of the supportive intervention is a crucial part of the assessment, leading to a grounded diagnosis and recommendations about the family involved.

Because VIPP-SD is evidence-based for a wide range of parenting issues and child problems, and also is relatively short term and protocol-based, it might be a suitable and feasible diagnostic intervention instrument for a variety of clinical problems and child protective services cases (CPS; see also Cyr & Alink, 2017; Lindauer, Bakermans-Kranenburg, van IJzendoorn, & Schuengel, 2010; van IJzendoorn & Bakermans-Kranenburg, 2010). In particular, the efficacy of video feedback intervention to decrease the level of disorganized attachment behaviors is crucial (Juffer, Bakermans-Kranenburg & van IJzendoorn, 2005). VIPP-SD as a diagnostic tool includes pretest assessments of current parental functioning and behavior that needs to be supported, and posttest observations to examine whether these targeted behaviors have improved in a relatively short period of time. In addition, detailed descriptions of the intervention process and the parents' growing motivation and enthusiasm for the intervention may complete the picture as outlined in Harnett's four steps of assessing parents' capacity to change.

In Canada, Chantal Cyr, Ellen Moss, and their team have pioneered this intervention approach to the diagnostic process in cooperation with CPS in Montreal. They included a short-term, attachment-based video feedback intervention—not unlike the VIPP-SD—in a protocol to assess CPS maltreatment cases, and to predict their ability to improve parenting and to be susceptible to parenting support (Cyr, Paquette, Dubois-Comtois, & Lopez, 2015). The pilot study showed the feasibility of this new approach, and it presented some convincing illustrations of the efficacy of the intervention as part of the diagnostic process. Compared to the control groups with psychoeducational intervention or receiving standard services with no intervention, the experimental group of parents improved their caregiving style, had lower levels of attachment disorganization, and showed less recurrence of child maltreatment in the year following the diagnosis. Evaluators of child abuse cases observed more improvement in families receiving the intervention, and the intervention

was found to be helpful in shaping clinicians' difficult decisions about the child and its family. Preliminary data showed that faster rate of improvement predicted placement decisions with more adequate long-term outcome. Replication and extension of this work is ongoing in the Netherlands, where VIPP-SD is used in residential care settings for families with a history of child maltreatment (mostly neglect).

### ***Sustainable and Cost-Effective Implementation of VIPP-SD***

Implementation of an evidence-based parenting intervention such as VIPP-SD on a county, state, or even national scale is a complicated process with its own challenges and requirements (Fisher & Skowron, 2017). *Implementation Science* is a scientific journal devoted to issues around scaling up interventions that have been proven to be effective in experimental settings. These settings differ in important ways from the natural setting in which the intervention should be implemented. For example, monitoring and control of fidelity might be more difficult, and interveners might be less well trained and less enthusiastic than interveners in the academic setting of a randomized controlled trial. The Stages of Implementation Completion (SIC; Chamberlain, Brown, & Saldana, 2011) is an observational assessment of progress in eight stages of the implementation strategy: from engagement of stakeholders and considerations of feasibility and readiness planning to staff hiring and training, to setting monitoring in place, to starting services, to consultation and fidelity monitoring and feedback, to assessment and certification of acquired competences. The time needed to finish the various stages and the proportion of activities completed are recorded, so that bottlenecks and stumbling blocks can be traced and addressed.

The VIPP-SD program can be rolled out rather effectively for several reasons. First, the intervention is relatively short; thus, interveners need to be kept motivated for one family only for a restricted period of time. Long-term interventions spanning more than a year have been found to be exhausting for the interveners working with difficult populations and to create staff turnover at a high rate, making high-fidelity implementation more complicated (Spieker, Nelson, DeKlyen, & Staerkel, 2005). Second, VIPP-SD is focused on a limited set of parental competences and interactive behaviors, and the

intervention is described in detail in the protocol. Protocol-based interventions make training more efficient and fidelity easier to attain and monitor. Video recordings lend themselves uniquely to peer review and to checking correct implementation of the various intervention steps. Third, VIPP-SD can be easily added to care as usual, as was the case in a randomized controlled trial with eating-disordered mothers receiving VIPP on top of cognitive-behavioral therapy (Stein et al., 2006) or the extensive clinical care as usual for parents of children with autism in the VIPP-AUTI trial (Poslawsky et al., 2015).

Bringing VIPP-SD to a scale that makes a social difference introduces some inconvenient dilemmas. Architect Mies van der Rohe's phrase "less is more" (Blaser, 1986), in our case indicating the efficacy of shorter and more interaction-focused parenting interventions (Bakermans-Kranenburg et al., 2003) is turned around into "bigger is better": better in the sense that more parents might be reached at less cost in a shorter period of time. Parents and children have, however, been shown to be differentially susceptible to the influence of parenting interventions such as VIPP-SD (Bakermans-Kranenburg & van IJzendoorn, 2015). But differential susceptibility theory does not imply simply focusing our intervention efforts on susceptible individuals. It requires a combination of ethical and scientific considerations to solve some thorny issues of equity and efficiency (Ellis, Boyce, Belsky, Bakermans-Kranenburg, & van IJzendoorn, 2011).

From a policy perspective, the crucial question is how to allocate scarce resources most efficiently. Should parents and children be screened for susceptibility markers, so that with less investment more susceptible families can profit optimally from VIPP-SD? Or should access to intervention services such as VIPP-SD be open to all (prospective) parents and their children to avoid stereotyping individuals as susceptible or not, with potentially damaging self-fulfilling prophecy consequences? From a scientific perspective, this dilemma can be easily solved, at least in the short run. First, screening instruments for susceptibility markers with sufficient specificity and sensitivity to minimize the number of false negatives and false positives are not (yet) available. Second, differential susceptibility may well be a dimensional instead of categorical characteristic, and families with less susceptible parents or children might therefore

require more intensive or completely different treatments to reach the same goals as the more susceptible families. More research is needed to examine the dimensionality of differential susceptibility, to develop valid screening instruments, and to address the question, “What works for whom?” Last, a critical issue is documentation of persistent, long-term change in parents and children on the neurobiological level, such as changes in brain structure and function, and hormonal changes in atypical or clinical populations and at-risk families (for some promising examples, see Bakermans-Kranenburg, van IJzendoorn, Mesman, et al., 2008; Bernard et al., 2015; Nelson, Fox, & Zeanah, 2014). In the meantime, and based on the overall positive outcomes on sensitive parenting and infant mental health, VIPP-SD might be implemented in all families struggling with parenting or infant mental health issues, regardless of their susceptibility to parenting interventions.

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