FOSTERING YOUNG CHILDREN'S SOCIAL-EMOTIONAL WELL-BEING: BUILDING POSITIVE RELATIONSHIPS WITH CHILDREN AND FAMILIES

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Plenary paper presented at Knox Early Childhood Conference Melbourne, 7th September, 2007

OUTLINE

- The neurobiology of interpersonal relationships
- Development of social-emotional well-being in young children
- Key features of effective relationships
- Parallel processes and the cascade of parallel processes
- Building positive relationships with families
- Challenges in working with families
- Conclusions

THE NEUROBIOLOGY OF INTERPERSONAL RELATIONSHIPS

One of the areas that we have learned an enormous amount about in recent years has been the neurobiology of interpersonal relationships (Cozolino, 2006; Goleman, 2006; Siegel, 1999) – that is, what our brains are doing when we interact with others.

First, some key facts about the brain.

The human brain is

- as big as a coconut
- the shape of a walnut
- · the colour of uncooked liver, and
- the consistency of firm jelly

It is also the most complex organic structure in existence.

The brain governs all our functioning, not just our cognitive processes. Brain development is important for all aspects of development - physical, social, emotional and cognitive. Therefore, healthy brain development is a prerequisite for our future physical and mental health, our social relationships, and our functional 'real life' skills, as well as our learning and academic achievements

What the brain does in relationships

When we are with others, we are constantly communicating emotionally, even though we may not be aware of it. Our feelings and emotions are communicated to others in conscious and unconscious ways:

- Conscious communication of feelings is done by telling others what we feel.
 Our ability to do this effectively depends upon our 'emotional intelligence', that is,
 our ability to register and articulate our feelings. Children benefit when we
 express our feelings directly, simply, and in non-threatening ways: they want to
 know not only what their parents think, but also how they feel. When we express
 our emotions, our children learn what is important to us as well as witnessing a
 model for the healthy expression of emotion
- Unconscious communication of feelings is done nonverbally through facial
 expressions, eye contact, tone of voice, gestures, posture, and the timing and
 intensity of response. We are constantly communicating our feelings in these
 unconscious ways, and constantly (albeit unconsciously) registering such
 expressions in others. Tuning to each other's internal states links us in a state of
 emotional resonance that enables each person to 'feel felt' by the other.

Neurological and neurochemical processes make this unconscious communication possible. We'll look briefly at three of these: hormonal and neurochemical reactions, the low road and the high road, and mirror neurons.

Hormonal and neurochemical reactions

- Hormonal / neurochemical reactions are involved in all aspects of brain development and functioning
- When we are babies, the positive looks and smiles we see in our parents trigger the release of pleasurable neurochemicals (opiates) that actually help the brain to grow
- Relationships can also protect young children from the damaging effect of toxic hormones and neurochemicals.
- Children whose relationships are insecure or disorganized have higher stress
 hormone levels which may alter the development of brain circuits and make them
 less capable of coping effectively with stress as they grow up

The power of a smile (Gerhardt, 2004, pp 41-43)

By toddlerhood, the human child has started to use his mother's and father's faces as an immediate guide to the behaviour in his particular environment. In infancy, these looks and smiles have an even more powerful role to play: they trigger off pleasurable biochemicals (opiates) that actually help the social brain to grow. These biochemical responses, in turn, trigger an enormous increase in glucose metabolism during the first two years of life. This glucose metabolism, in turn, facilitates the expression of genes.

The exact sequence is as follows:

- When the baby looks at the mother (or father), he/she reads their dilated pupils as indicating that their sympathetic nervous system is pleasurably aroused
- In response, the baby's own nervous system gets pleasurably aroused and his/her heart rate goes up
- These processes trigger off a biochemical response: a pleasure neuropeptide (called beta-endorphin) is released into circulation, specifically into the orbitofrontal region of the brain
- Natural opioids like beta-endorphin help neurons grow, by regulating glucose and insulin, as well as making you feel good
- At the same time, another neurotransmitter called dopamine is released from the brainstem and also makes its way to the prefrontal cortex
- This also enhances the uptake of glucose there, helping new tissue to grow

The low road and the high road (Goleman, 2006)

To understand this next bit, we need to look at the *structure of the brain*.

The brain is organised both vertically and horizontally:

- Vertically, the brain can be divided into three parts: the brain stem, the limbic system, and the neocortex.
- Horizontally, the brain is divided into right and left hemispheres

The vertical organisation of the brain comprises three major regions which have evolved over time, creating separate but interdependent systems

- *The brain stem.* This is responsible for regulating basic cardiovascular functions, level of arousal, and some reflexes.
- *The limbic system.* This is also called the emotional brain because it is the source of our urges, appetites and emotions. It is also the hub of our memory system.
- *The cortex.* This is also called the thinking brain since it is where planning, reasoning, and cognition take place.

The usual pathways for seeing flow from the eyes to the thalamus (in the limbic system), where all the senses first enter the brain, and then to the visual cortex. There is a second route that sends information straight from the thalamus to the amygdala (also in the limbic system). The amygdala then extracts emotional meaning from the nonverbal message, whether it be a scowl, a sudden change of posture, or a shift in tone of voice, even microseconds before we yet know what we are looking at.

Though the amygdala has an exquisite sensitivity for such messages, its wiring provides no direct access to the centers for speech; in this sense the amygdala is, literally, speechless. When we register a feeling, signals from our brain circuits, instead of alerting the verbal areas, where words can express what we know, mimic that emotion in our own bodies.

Thus, we 'read' the emotional aspect of whatever we perceive in others, and then process that information subliminally, beneath the reach of conscious awareness. This reflexive, unconscious awareness signals that emotion by priming the same feeling (or a reaction to it, such as fear on seeing anger) in us – in this way, we 'catch' a feeling from someone else.

These two ways of responding to others are sometimes referred to as the 'low road' and the 'high road':

- The *low road* is circuitry that operates beneath our awareness, automatically and
 effortlessly, with immense speed. Most of what we do seems to be piloted by
 massive neural networks operating via the low road particularly in our emotional
 life.
- The *high road*, in contrast, runs through neural systems that work more
 methodically and step by step, with deliberate effort. We are aware of the high
 road, and it gives us at least some control over our inner life, which the low road
 denies us.

'The low road traffics in raw feelings, the high in a considered understanding of what's going on. The low road lets us immediately feel with someone else; the high road can think about what we feel. Ordinarily they mesh seamlessly. Our social lives are governed by the interplay of these two modes.' (Goleman, 2006)

'The two roads register information at very different speeds. The low road is faster than it is accurate; the high road, while slower, can help us arrive at a more accurate view of what's going on. The low road is quick and dirty, the high slow but mindful.' (Goleman, 2006)

Mirror neurons

- **Mirror neurons** are found in various parts of the brain and function to link motor action to perception: they fire if you watch someone else doing something intentionally, and will also fire if you do the same action.
- These neurons don't merely fire in response to any action seen in another person: the behaviour must have an intention behind it.
- Mirror neurons show that the brain is able to detect the intention of another person, that is, to 'read' other people's minds
- Mirror neurons also enable us to 'read' (and share) other people's emotional states: when we perceive another's emotions and intentions, even though we do so automatically and unconsciously, that emotional state is created inside us.

DEVELOPMENT OF SOCIAL-EMOTIONAL WELL-BEING IN YOUNG CHILDREN

Children develop in the context of interpersonal relationships. Young children develop through their relationships with the important people in their lives: these relationships are the 'active ingredients' of the environment's influence on human development.

Nurturant caregiver-child relationships promote the development of emotional intelligence and empathy:

'Children who have healthy relationships with their mothers are more likely to develop insights into other people's feelings, needs, and thoughts, which form a foundation for cooperative interactions with others and an emerging conscience' (NSCDC, 2004)

As Peter Fonagy has suggested, the brain is a 'social organ'. Gerhardt (2004) describes the process thus:

'Our minds emerge and our emotions become organised through engagement with other minds, not in isolation. This means that the unseen forces that shape our emotional responses through life are not primarily our biological urges, but the patterns of emotional experience with other people, most powerfully set up in infancy. These patterns are not immutable, but, like all habits, once established, they are hard to break.' (pp.15 -16)

Early development is determined by the quality of their attachment experiences. Later development continues to be shaped through relationships – the brain can be reprogrammed through positive relationships (although it becomes increasingly difficult to do so). Children's relationships with non-family carers and professionals such as teachers can also 'reprogram' their brains.

Importance of emotional development and empathy

'There are many well-trodden pathways to misery. People may choose to eat too much or too little, drink too much alcohol, react to other people without thinking, fail to have empathy for others, fall ill, make unreasonable emotional demands, become depressed, attack others physically, and so on, largely because their capacity to manage their own feelings has been impaired by their poorly developed emotional systems.' (Gerhardt, 2004)

The development of emotional intelligence and empathy have long-term developmental implications:

- 'A growing body of scientific evidence tells us that emotional development begins early in life, that it is a critical aspect of the development of overall brain architecture and that it has enormous consequences over the course of a lifetime' (NSCDC, 2005)
- 'The foundations of social competence that are developed in the first five years are linked to emotional well-being and affect a child's later ability to functionally adapt in school and to form successful relationships throughout life' (NSCDC, 2005)

According to the National Scientific Council on the Developing Child (2005), the core features of emotional development (or 'emotional intelligence') are the ability

- to identify and understand one's own feelings,
- to accurately read and comprehend emotional states in others,

- to manage strong emotions and their expression in a constructive manner,
- to regulate one's own behaviour,
- to develop empathy for others, and
- to establish and sustain relationships

As Sue Gerhardt (2004) notes, the attitudes we learn to towards feelings are crucial:

'If they are seen as dangerous enemies, then they can only be managed through exerting social pressure and fear. Alternatively, if every impulse must be gratified, then relationships with others become only a means to your own ends. But if feelings are respected as valuable guides to the state of your own organism, as well as that of others, then a very different culture arises in which others' feelings matter, and you are motivated to respond.' (p.30)

'Emotional life is largely a matter of coordinating ourselves with others, through participating in their states of mind and thereby predicting what they will do and say. When we pay close attention to someone else, the same neurons are activated in our own brain; babies who see happy behaviour have activated left frontal brains and babies who witness sad behaviour have activated right frontal brains.' (p.31)

If children develop through relationships, what aspects of relationships are essential for healthy social and emotional development?

KEY FEATURES OF EFFECTIVE RELATIONSHIPS

There are nine key features of effective relationships (Moore, 2006). These appear in relationships of all kinds, including those between adults and children, adults and other adults, managers and staff etc.

- Attunement / engagement. The starting point for all effective relationships is tuning to the other person's world, understanding their perspective and experience, and successfully communicating that understanding to them. Two key skills needed for effective attunement and engagement are observation and listening. Observation involves paying close attention to the other person or people, noting body language and behaviour and what they say and do and what this tells you about their states of mind and body. The other key to effective attunement and engagement is listening. Listening involves hearing and understanding the messages others communicate, whether these messages are transmitted verbally or nonverbally, clearly or vaguely.
- Responsiveness. A second key feature of effective relationships is responsiveness, that is, when those involved in the relationship respond promptly and appropriately to each others' signals, communications and changing states. This can be done nonverbally (through facial expressions and body language) or through direct verbal communication.

- Clear communication. A third characteristic of effective relationships is clear communication. Effective communication skills enable us to listen effectively, monitor communication, build warm relationships, and support parents.
- Managing communication breakdowns. A fourth key feature of effective relationships is that those involved are able to acknowledge communication breakdowns and restore positive connections when these occur. When attuned communication between parent and child is disrupted, as it inevitably will be, repair of the rupture is an important part of re-establishing the connection. Repair is important in helping to teach the child that life is filled with inevitable moments of misunderstandings and missed connections that can be identified and connection created again.
- Emotional openness. A fifth characteristic of effective relationships is that those
 involved acknowledge each other's emotions, both the positive joyful ones as well
 as the negative uncomfortable ones. It is through the acknowledgment and
 sharing of these experiences that emotional intelligence / emotional literacy
 develops
- Understanding one's own feelings. A sixth characteristic of effective
 relationships, closely related to the previous one, is understanding and managing
 one's own emotions. In relationships between adults (such as teachers) and
 children, understanding and being able to manage one's feelings is also crucial. If
 caregivers do not have a comfortable relationship with their own feelings, they
 may not be able to help children become emotionally literate very effectively.
- **Empowerment and strength-building**. A seventh feature of effective relationships of different kinds is that they are characterised by an emphasis on each other's strengths and competencies, rather than on weaknesses and problems. A major reason for adopting a strength-based approach in relationships is that better outcomes are achieved.
- Moderate stress / challenges. Effective relationships are characterised by
 moderate stress and challenges. Stressful events can be harmful, tolerable, or
 beneficial, depending on how much of a bodily stress response they provoke and
 how long the response lasts. While chronic stress is damaging to development
 and health, moderate stress as a stimulus to development. Moderate stress
 results when we set boundaries on people and when we set standards for them.
- Building coherent narratives. The last feature of effective relationships to be
 considered is the building of coherent narratives, that is, telling stories that help
 people make sense of their lives. Stories are the way we make sense of the
 events and our lives, and these stories are important for young children's
 development.

PARALLEL PROCESSES AND THE CASCADE OF PARALLEL PROCESSES

The concept of *parallel process* refers to the way that the relationship between a professional and a client parallels the relationship between the client and others in their lives, and therefore has the capacity to strengthen or weaken such

relationships. Thus, there is a flow-on effect, in which relationships influence relationships (Johnston and Brinamen, 2005).

This flow-on effect can be seen in the relationships between early childhood professionals and parents of young children:

'People learn how to be with others by experiencing how others are with them. This is how one's views and feelings (internal models) of relationships are formed and how they may be modified. Therefore, how parents are with their babies (warm, sensitive, responsive, consistent, available) is as important as what they do (feed, change, soothe, protect, teach), and how [professionals] are with parents (respectful, attentive, consistent, available) is as important as what they do (inform, support, guide, refer, counsel).' (Gowen and Nebrig, 2001, p.8)

Thus, early childhood interventionists teach parents how to relate to their young children by how they (the interventionists) relate to the parents, rather than by directly modeling parenting behaviour with the child.

To convey a sense of this parallel process, Jeree Pawl (Pawl, 1994/95; Pawl and St. John, 1998) has coined a shorthand 'platinum' rule to supplement the Biblical golden rule (that you should do unto others as you would have them do unto you). Her rule is

Do unto others as you would have others do unto others.

This notion of parallel process goes beyond understanding that the relationship between professional and parent is important. What it adds is that the nature of that relationship needs to be informed by the important relationships that the other person has – the way we are with the person needs to reflect and model the way they need to be with others in their lives.

The commonalities that we found in all the different types of relationships suggest that parallel processes operate across the full spectrum of relationships, not just in the relationship between professionals and parents. They can be seen as forming a *cascade of parallel processes*:

The way that governments relate to services

parallels the way that services relate to communities

that parallels the way that managers relate to staff

that parallels the way that staff relate to parents

that parallels the way the parents relate to children

If relationships have such flow-on effects, we need to ensure that these effects are positive. How do we build positive relationships with families?

BUILDING POSITIVE RELATIONSHIPS WITH FAMILIES

Core principles of a family-centred approach to intervention (Moore and Larkin 2006)

- All families are different, and function best when their unique values and
 preferences are acknowledged and catered for. There is a huge variation in
 the values and preferences of parents and families, as well as in their abilities and
 circumstances. Service providers are most effective when they acknowledge and
 respect what particular families value and need, and when they provide support
 that based on these.
- Parents know their children and their family best, and want the best for them. Parents and professionals are both experts of a kind. Professionals are experts in children (and families) in general they know about how children usually develop and learn, and what strategies usually work to promote their development or overcome developmental problems. Parents are experts in their particular child and the family circumstances in which that child lives they know the child and family better than professionals ever can.

These two sets of expertise are complementary. Best outcomes for children and families are gained when parents and professionals acknowledge and value each other's expertise, and combine their knowledge to devise strategies to meet the child's needs.

The other key aspect of this principle is that all parents want the best for their children. This is even true of families who seem to be making a mess of the business of parenting – their difficulties in raising and caring for their children are far more likely to be the result of not knowing better strategies or of competing external pressures than of not wanting the best for their children. Therefore, professionals should take as given that the parent's underlying intentions are benign.

 All families have strengths and competencies, and are capable of developing these further. Family-centred practice involves adopting a mindset that parents and families already know how to do many things well, and professionals need to train themselves to recognise and acknowledge these strengths and competencies. Even the most poorly organised parents will be doing some things that are helping their children and family.

Family-centred practice also involves trusting the ability of parents and other family members to develop new strengths and learn new skills. How much individual families learn will vary greatly according to their attitudes, abilities and circumstances, but they are all capable of learning something. They are much more likely to do so if the professional they are dealing with believe that they can.

• The well-being and development of children depend upon the well-being of all other family members and of the family as a whole. Children do not develop in a vacuum, but are affected by (and have effects on) the family in which they live. Anything that happens to any member of the family (eg. getting sick,

losing a job, starting school) has an impact on other family members. Anything that happens to the family as a whole (eg. moving house, having a new baby) also effects everyone in the family. Therefore, although our main focus or concern may the child, we need to provide support in ways that take into account the needs of other family members and the family as a whole.

• The well-being of families depends upon the quality of their informal social supports as well as the availability of high quality formal supports. Professionals need to recognise that the level and quality of support that families get from their extended family, friends and communities has a significant effect on their general well-being and parenting ability. The level and quality of support they get from formal professional services is also important for well-being and parenting, but these service complement rather than replace the core support provided by people's personal support networks.

Rationale for key principles of family-centred practice

 When service providers and families work collaboratively to identify family goals and priorities, services are more likely to address families' most salient needs.

When professionals determine what the goals of intervention should be, the issues that are most important for families and have most impact on their lives are likely to be overlooked.

 When service providers and families work as partners to determine what action should be taken, there is a greater probability that the desired outcomes will be achieved.

When decisions about goals and actions are made by professionals, they are less likely to be realisable in the circumstances in which the family lives.

 When service providers listen to families and establish good working relationships with them, parents are more likely to listen to what the professionals have to say and to make better use of professional services.

When families feel that the professionals do not really understand their views or their circumstances, they are less likely to trust and listen to what the professionals have to offer.

 When service providers support family decision-making, families are more likely to develop the confidence, competence, and ability to make decisions about their child and family over their lifetime.

This is important because support services for families drop away significantly as the child gets older, and families need to become more self-reliant.

• When service providers and parents share and respect each other's knowledge and expertise, better solutions for the child and family are likely to be found.

When parent knowledge of the child and family is ignored, the intervention strategies are less likely to be effective.

 When child and family needs are met solely or primarily through professional sources of help, families are more likely to become dependent upon professional services.

When service providers help families identify and mobilise family and community sources of help, their dependence on scarce professional resources is reduced.

Working according to this set of principles and practices is not always easy, and challenges will inevitably arise.

CHALLENGES IN WORKING WITH FAMILIES

How to manage difficult or challenging situations

Handling such situations involves understanding our own feelings and reactions as well as those of the person who is challenging us.

First, what does being challenged make me feel? It is important to learn to recognise and manage our own bodily reactions to stress (eg. perspiring or feeling sick in the stomach). The aim is not to stop ourselves having these reactions (they occur too fast and are beyond conscious control), but to manage them so they do not control our behaviour.

Second, it is important to focus fully on the person and their concerns, seeking to understand and acknowledge their feelings and their point of view. That may be all that is needed – having been able to express their views and have them respected, the person may be happy to proceed. If not, the person may need to be given some separate time with the facilitators to work through the issues.

Third, there may be a way in which particularly negative or emotive points can be reframed in more neutral or positive terms.

 How to manage not liking or approving of someone you are working with You will not like or find it easy to develop a relationship with every family you meet.

First, learn to recognise your own reactions and the values that drive them. These may or may not be very admirable or politically correct, but they are real for you.

Second, do not try to deny or change them (they may well be too deeply embedded for that), but simply to ensure that they do not get in the way of you working effectively with the person or family.

Third, look for the strengths in every family as a way of challenging your own assumptions about such families. Every family does something well, even the most apparently 'dysfunctional' family.

Understanding 'difficult' or 'problem' families

There will be families you meet who seem dysfunctional or irresponsible, who do not keep appointments or carry out agreed plans.

First, try to view the situation from the family's perspective, what the barriers to making it might be like to

Second, accept that, in situations in which families are making poor or no use of services, it is as much the responsibility of professionals to change what they provide to meet family needs and preferences, as it is of families to

How to look after yourself and your colleagues

There will inevitably be stressful times, for you and your colleagues.

First, recognise that it is not bad or wrong to feel stressed – it only becomes a problem when the stress is not addressed or managed effectively.

Second, when you are the one feeling stressed, talk to someone you trust (and who will listen properly) about it. Make sure you have a good support network of colleagues, friends and families for such occasions.

Third, keep an eye on colleagues' stress levels and be prepared to support them when they need it. Their ability to work effectively with families is partly dependent on collegiate support that has the same qualities.

CONCLUSIONS

What can we conclude from this review of relationships of various types?

- **Brains communicate directly with other brains.** We read (and share) the moods and intentions of others at unconscious levels all the time.
- Relationships matter. Our relationships shape our development and functioning, whether they are the relationships with children, with families, with our colleagues, with our staff, or with communities.
- The relationships children experience shape their socio-emotional development. The development of emotional intelligence and empathy have long-term developmental implications.
- Relationships change brains. We are changed neurologically and neurochemically by relationships, and these changes may be for the better or for the worse.
- Relationships affect other relationships. Parallel processes operate at all levels of the chain of relationships and services, so that our capacity to relate to others is supported or undermined by the quality of our own support relationships.

- 'You need to have an experience with someone first then you can reproduce it.' (Gerhardt, 2004)
- **Relationships form a cascade of parallel processes.** Relationships form a cascade of parallel processes from governments and societies through to parents and children.
- Effective relationships at all levels share common characteristics. These include nine key characteristics: attunement / engagement, responsiveness, clear communication, managing communication breakdowns, emotional openness, understanding one's own feelings, empowerment and strength-building, moderate stress / challenges, and building coherent narratives.
- Partnerships with parents are the key to effective practice. However, there are challenges to be addressed.

REFERENCES

- Cozolino, L. (2006). The Neuroscience of Human Relationships: Attachment and the Developing Social Brain. New York: W.W. Norton.
- Gerhardt, S. (2004). Why Love Matters: How Affection Shapes a Baby's Brain. London, UK: Brunner-Routledge
- Goleman, D. (2006). **Social Intelligence: The Hidden Impact of Relationships,** New York: Random House.
- Gowen, J.W. and Nebrig, J.B. (2001). **Enhancing Early Emotional Development: Guiding Parents of Young Children.** Baltimore, Maryland: Paul H. Brookes.
- Grille, R. (2005). **Parenting for a Peaceful World.** Alexandria, NSW: Longueville Media.
- Johnston, K. and Brinamen, C. (2005). Integrating and adapting infant mental health principles in the training of consultants to childcare. **Infants and Young Children, 18** (4), 269-281.
- Landy, S. (2002). Pathways to Competence: Encouraging Healthy Social and Emotional Development in Young Children. Baltimore, Maryland: Paul H. Brookes.
- Landy, S. and Thompson, E. (2006). **Pathways to Competence: A Parenting Program.** Baltimore, Maryland: Paul H. Brookes.
- Moore, T.G. (2006). Parallel processes: Common features of effective parenting, human services, management and government. Invited address to 7th National Conference of Early Childhood Intervention Australia, Adelaide, 5th-7th March.

http://www.eciavic.org.au/publications/ECIAVC_Conference2006.html#parallel process

- Moore, T.G. with Larkin, H. (2006). 'More Than My Child's Disability': A Comprehensive Review of Family-Centred Practice and Family Experiences of Early Childhood Intervention Services. Melbourne, Victoria: Scope (Vic) Inc.
- National Scientific Council on the Developing Child (2004). **Young Children Develop** in an Environment of Relationships. NSCDC Working Paper. Waltham, Massachusetts: National Scientific Council on the Developing Child, Brandeis University. http://www.developingchild.net/papers/paper_1.pdf
- National Scientific Council on the Developing Child (2005). **Children's Emotional Development is Built into the Architecture of their Brains.** NSCDC

 Working Paper. Waltham, Massachusetts: National Scientific Council on the Developing Child, Brandeis University.

 http://www.developingchild.net/papers/workingpaperII.pdf
- Pawl, J.H. (1994-95). On supervision. **Zero to Three, 15** (3), 3-5.
- Pawl, J.H. and St. John, M. (1998). **How You Are Is As Important As What You Do.** Washington, DC: Zero to Three Press.
- Siegel, D.J. (1999). **The Developing Mind: Toward a Neurobiology of Interpersonal Experience.** New York: The Guilford Press.

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