DEVELOPMENT OF A CODING SYSTEM FOR TOUCH: AN ANALYSIS OF EARLY MOTHER-CHILD INTERACTION

by

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CERTIFICATE

This is to certify that the thesis entitled, "**Development of a Coding System for Touch: An Analysis of Early Mother-Child Interaction**", being submitted by Ms Priyanka Agrawal for the award of the degree of **Doctor of Philosophy**, to the **Indian Institute of Technology, Delhi** is a record of original bona-fide research carried out by her under my guidance and supervision. I am satisfied that the thesis presented by Ms Priyanka Agrawal is worthy of consideration for the degree of Doctor of Philosophy.

The results of this thesis have not been submitted to any other University or Institute for award of degree or diploma.

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ABSTRACT

Touch is the largest sense organ and fully developed at birth unlike other sense organs. The aim of the current research was to trace the developmental trajectory of touch behaviour in mother-child dyadic interactions from infancy to toddlerhood. However, an extensive review of literature indicated that touch does not develop in isolation. Therefore, the development of co-occurring nonverbal behaviours such as facial direction, facial expression also had to be taken into account. Since the existing coding systems couldn't fulfil the current research goals, a new coding system - 'touch and co-occurring behaviour coding system' (TCBC) - was developed that enables simultaneous measurement of touch behaviour and co-occurring behaviours. The system was then used to code and analyze a data-set consisting of interactions of 20 mother-child dyads which were videotaped when the children were three months old and then when they were nineteen months old.

The methodology for developing the present coding system included reviewing literature on existing methodologies for developing a coding system, existing coding systems, observing videotaped data-set of mother-child interactions and using an English dictionary to reach a final list of behavioural categories. The system was then standardized by testing for its validity and reliability. For testing validity - face, content, and performance criterion validity were measured. For reliability, inter-coder, expert-coder, and intra-coder reliability were measured. The coders for reliability and validity consisted of faculty and students from fields of psychology and child development. The new coding system includes touch behaviour characteristics such as type, interactant, lateralization; nonverbal behaviours such as facial expression, posture, and interpersonal distance; and verbal behaviours such as

interactant sounds. The limitations of the current research have also been identified and directions for future research have been suggested.

The original videotaped data was coded using the newly developed coding system and then analysed using statistical techniques such as mixed ANOVAs, repeated measure ANOVAs, paired t-tests, and independent t-tests. The data-set was collected as part of a project spanning universities of Delhi and Osnabrueck (Keller Borke, Chaudhary, Lamm, & Kleis, 2010; Kaertner et al., 2008). Touch characteristics such as type and interactant; child characteristics such as age, gender, and birth order; maternal characteristics such as age, education, and occupation; and nonverbal behaviours such as facial expression, facial direction, and interpersonal distance, were then studied for their impact on frequency of touch using the data-set. The results of this analysis indicate that child age, maternal education, touch interactant, and touch type affect touch frequency in mother-child dyadic interactions studied. However, child birth order, child gender, maternal age, and maternal occupation do not influence touch frequency. Based on the analysis, different touch types can also be profiled based on their linkages with child, maternal, and other touch behaviour characteristics. Further, nonverbal behaviours such as facial direction and facial expression indicate an effect on touch frequency while interpersonal distance does not affect touch frequency in mother-child interactions. These findings thus also establish the association between touch and nonverbal behaviours.

The current research offers a reliable and valid instrument for simultaneous measurement of touch behaviour and co-occurring behaviours. Not undermining the child's active role in the dyadic interactions, the new coding system also takes the child's perspective into account. In addition, a new system of labelling touch behaviour has been presented in this research which can be tested empirically in

future. The coding system is extendable to the study of other dyadic interactions such as stranger interactions, same gender interactions, romantic interactions etc. which can also be compared cross-culturally. The literature suggests that the current research is a first-time study of the development of touch behaviour and its association with other nonverbal behaviours using a longitudinal design that also includes a child sample older than infants or from the non-western world, hence contributing towards filling the gap in literature relating to the post-infancy development of touch. Child development researchers, child psychologists, and paediatricians can also use this research to understand the development of touch behaviour during the early years of life behaviour, to facilitate the optimal development of touch in the child.

Keywords: child development, coding system, nonverbal behaviour, touch behaviour.

TABLE OF CONTENTS