

Quality of parent-child interaction is one of the major predictors of emotional and social development of children in the first two years of life. Since the consequences of maladaptive parental responsiveness can be so profound, parent-child interaction is an important focus of child development research. This leaflet will show you how The Observer® XT facilitates the study of parent-child interaction.

An often used method to investigate parent-child interaction is Ainsworth's Strange Situation Test. This psychological test, in which the child interacts with a stranger and with a parent, is used to investigate the bond between parent and child. The responses of the child and the parent in the different episodes give insight in the type of attachment between parent and child. Different types of attachment (that is, secure, avoidant, ambivalent, and disorganized/disoriented) can help explain behavioral and emotional disorders. This test and other experiments can be performed in a Noldus observation lab.

COLLECT DATA

With current technology, parent-child interaction can be recorded on video for detailed analysis. In the Ainsworth test, four cameras can be used: one to film the whole room and three to individually record the actions of child, parent, and stranger. All four videos can be played synchronous in The Observer XT, the software tool for data collection, analysis, and presentation of observational data. Moreover, behavior can be scored live and recorded to video files simultaneously to enable detailed logging at a later stage. Using The Observer XT you can manage all data in one project. For example, integrate your logged events with data obtained with data-acquisition systems, such as EEG/ECG equipment.

Set up your experiment

Before you start collecting data, set up the video cameras and other equipment. The video cameras don't have to be connected to the computer that runs The Observer XT, because you can synchronize your data later by timestamp or manually by adjusting the start and stop time

of your observations. When your equipment is connected to the computer, a synchronization signal sent out to your other data acquisition systems will automatically synchronize your data sets.

Design a coding scheme

With The Observer XT, you can specify all subjects (e.g. mother, child, stranger), behaviors (e.g. approach, withdraw, cry), and modifiers in a coding scheme before or during observing. Modifiers describe additional features of behavior, such as 'approaching the parent' vs. 'approaching the stranger'. In The Observer XT you can use both time sampling and continuous sampling. You can combine them in one project. For example, code behaviors of the child continuously, while coding the behaviors of the parent at set intervals.



Screenshot The Observer XT.

Code behaviors

You can even code your observations by means of key-strokes or mouse clicks, which are automatically assigned to a timestamp. You can also log comments to qualitatively classify your results later. If you prefer to be mobile and need to follow your subject around, you can rely on our handheld observation system Pocket Observer. With this solution you can code behavior live on a handheld computer, PDA, or smart phone and analyze your data afterwards with The Observer XT.

Video

The Observer XT facilitates coding video. You can play two or more video streams simultaneously backward or forward and at multiple speeds. Suppose you take gaze direction as an indicator of attention direction and

intensity. Ability of attention direction in children may affect regulation of interaction in social contexts [1], and is as such important in child development. You can capture gaze direction on video and analyze it afterwards. Multiple speed video control is especially useful when coding a video of these eye movements since they can be hard to follow unless viewed in slow-motion.

Observe behavior

Before observing, the parent and child settle down in a waiting room to ensure that they are comfortable and alert. Next, they participate in the test. In consecutive episodes, the child is introduced to a stranger entering the test room and the child is separated from and reunited again with the parent. During the experiment an observer codes the behavior of the child, parent, and stranger. When you work with The Observer XT, you can code behaviors during the observation, but also afterwards.

SELECT AND ANALYZE DATA

After coding your observations and importing external data, you can start to investigate your results and the relationship between codes and external data.

Visualize data

The Observer XT provides detailed visualizations which help you to explore the data. Customized charts and statistics are accessible in a few mouse clicks and ample selection options give access to the video images you require.

Select data

Specify the relevant parts for analysis by filtering or nesting the appropriate independent variables, subjects, behaviors, and modifiers. For example, types of attachment can be related to certain amounts of withdrawal or approach.

Pattern detection

More complex patterns in behavior can be detected by exporting your data to Theme™ for structural analysis. Theme detects complex patterns of events in raw behavioral data, and quantifies the complexity of the behavior as a whole. Where patterns in time-based data are difficult if not impossible to find with standard statistical methods, Theme can discover them [2].



A lab scene: multiple cameras record father and child.

Export and present your data

For additional calculations and analysis, The Observer XT contains the possibility to export data to the spreadsheet or statistics program of your choice or to CD and DVD for backup. A wide range of presentation options is offered as well, to facilitate communicating your results to others. You can select important video fragments and create your own highlights video clip to illustrate your outcomes.

Feel free to contact us or one of our local representatives for more references, clients lists, or more detailed information about The Observer XT, Pocket Observer, and Theme.

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RESEARCH ARTICLES ILLUSTRATING THE USE OF THE OBSERVER FOR THE STUDY OF PARENT-CHILD INTERACTION

- Reissland, N.; Stephenson, T. (1999). Turn-taking in early vocal interaction: a comparison of premature and term infants' vocal interaction with their mothers. *Child: Care, Health and Development*, **25**, 447-456.
- Romo, L.F.; Nadeem, E.; Au, T.K.; Sigman, M. (2004). Mexican-American adolescents' responsiveness to their mothers' questions about dating and sexuality. *Applied Developmental Psychology*, **25**, 501-522.
- Weerth, C. de; Geert, P. van. (2000). Dynamics of emotion-related behavior in infants. In: *M.D. Lewis & I. Granic (Eds.). Emotion, Development and Self-Organization*. New York: Cambridge University Press.

[1] Abelkop, B.S.; Frick, J.E. (2003). Cross-task stability in infant attention: New perspectives using the still-face procedure. *Infancy*, **4**, 567-588.

[2] See also: How to use Theme in psychological research: Autistic behavior. *Noldus Information Technology*.