

Development of Desire-based and Belief-based Emotions in Indian Context

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The study investigated attribution of desire based (happy, sad) and belief based (surprise and curiosity) emotions among children from urban settings. A large sample of children (n=240) drawn from 3-6 years of age group evenly distributed across gender participated in the study. All the children completed emotion story tasks in which short events involving story character's emotion were narrated. Relevant desire based and belief based questions were asked. Results revealed significant developmental differences in attribution of desire based and belief based emotions. However no significant difference between girls and boys were noted.

Keywords: Attribution, Belief-Desire, Emotion, Theory of mind.

The last three decades have witnessed varied and intensive efforts towards the study of children's development of a theory of mind (TOM). The essential endeavour in theory of mind is one of characterizing and charting our everyday understanding of people: how to understand each other's actions, thoughts and lives? According to TOM our ordinary psychology is mentalistic. People are construed in terms of internal mental states such as their beliefs, desires, intentions and emotions. Moreover, one's everyday understanding of people in these terms has a notable coherence. Because an actor has certain beliefs and desires, he or she engages in certain intentional actions, the success or failure of which result in certain emotional reactions. So according to this approach, theory of mind is a proper shorthand for referring to our everyday psychology.

In the past decade there has been a great expansion of research (e.g. Astington, Harris & Olson, 1988; Frye & Moore, 1991) in the area of children's development of theory of mind. What do children of different

ages understand about the mind? What counts as evidence? One is not looking for explicit understanding of mind of the kind possessed by psychologists or philosophers, but for implicit understanding such as can be inferred from what children say or do. This is the sort of understanding that is shown in our everyday interaction with each other, for example, in the ways we explain why we did something and in the ways in which we predict what other people will do. In other words, it is common sense or folk psychology. Philosophers have often called this belief-desire psychology. It provides explanations of behavior and makes predictions about people's actions by appealing to their beliefs and desires, to what people think, know, expect, want, intend, hope and so on.

Children's understanding of emotional consequences of beliefs and desires: Mind and emotion can be seen as related topics within everyday or common-sense psychology – our ordinary understanding of people. Understanding the nature and causes of emotions is part and parcel of acquiring a theory of mind and understanding

internal states of mind is part and parcel of acquiring an understanding of mind and emotion.

To set the context for understanding children's understanding of emotional consequences of beliefs and desires, it is by now known that mentalistic constructs i.e. namely beliefs and desires cause human actions and actions lead to outcomes and these outcomes lead to two basic sorts of emotional reactions : reactions dependent on desires (desire based emotions) and reactions dependent on beliefs (belief based emotions). For example, the outcome of an action can satisfy or fail to satisfy the actors desires, leading to happiness and sadness (desire based emotions) respectively. Similarly the outcome of an action can match or fail to match an actors belief or to be lacking in knowledge or belief about an outcome leading to surprise and curiosity (belief based emotions) respectively. This brief sketch does not do justice to our theory of mind, but is sufficient to begin to consider when children understand beliefs, desires, and their impact on various emotional reactions.

Recently, researchers have begun to systematically study young children's understanding of belief-desire psychology using a variety of methods (Gopnik & Astington, 1988; Perner, Leckam & Wimmer, 1987; Shatz, Wellman & Silber, 1983, Wellman & Bartsch, 1988). However, within the literature, emotions are often discussed as a homogeneous group with the results gleaned from the examination of children's understanding of desire based emotions, (e.g. happy and sad), then extended to children's understanding of all emotions. In order to fully understand the relationship between children's knowledge of other's emotions and others minds, children's emotion knowledge must be considered in terms of desire and belief understanding (Nelson, Widen & Russell, 2009). Many (e.g. Flavell, 1988,

Harris, 1989, Perner, 1988) now agree that 3-4 year olds do understand much of the belief-desire-action triad, that is they construe people as possessing mental states of both belief and desire, and understand that such mental states cause external actions. Children's understanding of emotions can be differentiated in the same way into those based on an understanding of others desires e.g. happy, sad, angry and those based on an understanding of others beliefs e.g. scared, surprised (Rieffe, Tarwogt & Cowan, 2005; Ruffman & Keenan, 1996). Controversy surrounds younger children's understanding of beliefs. Some researcher's contend that 3 year olds understand beliefs and hence participate in the naïve belief-desire psychology (e.g. Chandler, Fritz & Hala, 1989, Wellman & Bartsch, 1988); others maintain that such understanding is not evident until age 4 or so. (Ferguson & Gopnik, 1988, Perner, 1988). Children's TOM development is often differentiated into two developmental stages: an earlier understanding of desires and a later understanding of beliefs.

Over the last 10 years, researchers have been intensively studying children's understanding of emotion. With few exceptions, the research on children's understanding of emotion has proceeded without concern for everyday belief-desire psychology. But this has begun to change (Harris, 1989). One important point of overlap concerns children understands of the causes of various emotional states, for example, children's appreciation of the actors goals, or their desires, as an important causal influence on emotion. Thus Yuill (1984) studied children's judgements of story characters satisfaction as based on the character's desire. Children as young as 3 ½ years judged satisfaction as dependent on whether the outcome was desired or not. More systematically, Stein and Levine (1987, 1989) have looked at children's understanding of the causal organization of

emotional events. They suggest that emotional experiences centre around a person's goals and plans – happiness arises when a desired state is maintained or an undesired state is avoided and sadness/anger results when one fails to attain a desired state or fails to escape an undesired state.

Much less research has focused on what we construe as belief-dependent emotions. Research on this area by Wellman and Banerjee (1981) show that while 3 year olds understand the desire dependent emotion happiness, the data failed to show any understanding of surprise as a belief – dependent emotional reaction. Thus, the data fail to extend Wellman and Bartsch's (1988) findings on surprise to younger children, and instead replicate Hadwin and Perner's (1991) finding that 3 year olds fail to understand surprise appropriately. Further studies by Wellman and Banerjee on the same area reveal three things. First, they show once again that young children understand emotional reactions such as happiness and sadness are dependent on the character's prior desires. The data also indicates that children understand emotional reactions such as surprise and curiosity to be dependent on the character's belief states, although this understanding is also masked by young children's tendency to think that such emotions are intimately dependent on desires as well. Thirdly, these findings show considerable development in young children's understanding : 3 years olds evidence significant understanding but in years from 3 to 5, children become increasingly accurate and consistent. Studies conducted by Wellman and Woolley (1990) and Shatz, Wellman and Silber (1983) extend such work by showing that before young children understand belief – desire reasoning they are not simply ignorant but utilize a simpler naïve psychology. When such young children fail belief reasoning task they nonetheless pass comparable desire

reasoning tasks. Thus the current data confirm a developmental sequence from understanding desire to understanding belief as well. In spontaneous language use, very young 2 year olds already use such desire words as want and related emotion words such as happy before they use mental terms such as think, know and surprise (Bretherton & Beghly, 1982). 2 years old who base their attribution of mental states solely on desire are incapable of passing false-belief tasks. At a slightly younger age, children begin to spontaneously use desire terms such as want and like, but generally do not employ belief terms until later (Wellman, Phillips & Rodriguez, 2000). These findings on a developmental transition from desire to belief-desire psychology are consistent with the hypothesis that not only does belief-desire psychology succeed desire psychology but that it develops out of it.

Socio cultural factors and understanding of emotions : During the last three decades there has been an increasing emphasis on the study of situated cognition which takes a contextualist stance and plays special attention to the social environment. Cognition is inextricably linked to the context within which it emerges. The interdependence is dynamic in nature and provides a uniqueness to the cultural/ social environment which is mainly responsible for shaping the thought process. Keeping in view these cultural/ contextual factors an attempt was made to examine certain cognitive and motivational correlates of child rearing in Indian context. This focus on rearing practices does not deny the importance of cultural aspects of an individual's development but simply suggests that interaction with parents is the most pervasive and significant influence in shaping early life experiences besides extending unique cultural context to the developing child.

During the past two decades, while developmental psychologists have evinced an interest in studying children's

understanding of intentions, desires and emotions, the cultural psychologists have advocated different theories that attempt to explain cultural construction of mind. Social experiences during early childhood with adults encourage the child to learn the linkage between action (behavior), intention, emotion and desires (mind). Cross-cultural differences in understanding of emotions results from varied socio-cultural factors, cultural meaning system, parental ethno theories, parenting, verbalization of emotional experiences and disciplinary practices (Misra Personal communication).

The study analyzed the attribution of emotions (belief based and desire based) in the children in urban setting. The urban setting is relatively formal, impersonal with greater variety in available role model and media experience. It also demands elaborated linguistic code for communication and the parents have more clear expectation from children and greater demand for development of skills in social emotional and cognitive domains etc.

With this back drop the present study examined children's attribution of belief based and desire based emotions to others in urban settings. It was expected that there will be a significant developmental change in urban children in attribution of different emotions across 3 to 6 years of age.

Method

Participants:

Children's attribution of emotions was studied by following a 4 (age) x 2 (gender) factorial design. A group of 240 children with 30 in each of the 8 cells participated in the study. Children from 3 - 6 years of age, evenly divided across both genders from the urban setting participated in the study.

Tool:

The mothers of these children were interviewed on the basis of a questionnaire

measure to explore their beliefs, opinions and child rearing practices.

Results and Discussion

Desire based Emotions: To assess the ability to attribute happiness and sadness each child was told a theme, which described the character's emotion and the child was asked the following 3 questions.

1. Emotion question – why was 'X' happy/sad.
2. Desire question – what did 'X' want ?
3. Belief question – what did 'X' think ?

The following are some of the example responses given by children to these questions in case of happiness and sadness.

Happiness

1. Because his father bought him a new dress.
2. He wanted to wear a new dress.
3. He thought of wearing a new dress and going out.

Sadness

1. Because he could not play outside.
2. He wanted to play outside with his friends
3. He thought if rain would stop he would play outside.

A significant developmental change in children's responses to the three test questions in happiness and sadness was noted. See Table 1. In case of 'happiness' ANOVA revealed a significant effect of age in understanding of emotion (Q.1) ($F=160.50$, $p<.01$), in understanding desire (Q.2) ($F=189.67$, $P<.01$) and in understanding belief (Q.3) ($F=181.38$, $p<.01$). In case of 'sadness' a significant effect of age was also noted in understanding emotion (Q.1) ($F=181.57$, $P<.05$); desire (Q.2) ($F=200.40$, $p<.05$) and belief (Q.3) ($F=206.47$, $P<.05$). Unlike the emotion and desire components of happiness and sadness, understanding of the belief component is comparatively poor in urban children at the younger age level

Table-1 Mean for Attributions of Four Emotions by Age (N = 180 in each Cell)

AGE	Happy			Sad			Surprise			Curiosity		
	E	D	B	E	D	B	E	D	B	E	D	B
	Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3
3+	0.64	0.23	0	0.37	0.27	0.01	0.18	-	0.01	0.03	-	0.01
4+	1.02	0.4	0.1	0.99	0.5	0.14	0.53	0.09	0.16	0.29	0.11	0.2
5+	1.57	1.32	0.58	1.51	1.23	0.65	1.4	0.56	0.67	1.08	0.59	0.83
6+	1.82	1.52	1.01	1.8	1.61	0.91	0.78	1.1	1.32	1.58	1.11	1.27

Note : E – Emotion Question (Q1), D – Desire Question (Q2), B – Belief Question (Q3)

(i.e. 3 & 4 years). It has a significant implication for research in the area of development of a theory of mind.

Belief based Emotions: Similar to desire based emotions here children were also told a theme and asked the 3 test questions. Examples of their responses are given below. In case of curiosity children gave the following responses to questions 1, 2 and 3 respectively.

1. He was curious because he wanted to know what is in the bag.

2. He wanted to see what is in the bag.

3. He thought probably his father has bought something for him or he was thinking what his father has bought from the market.

In case of surprise children gave the following responses. Because he saw a tiger, he was thinking that, and he thought the tiger would kill him. A significant development change across the 4 age groups was noted in both surprise and curiosity in case of attribution of emotion (Q.1) ($F=165.47, p<.05$; $F=324.84, p<.05$), understanding of desire component (Q.3) ($F=210.98, p<.05$; $F=309.75, p<.05$) and understanding of belief component (Q.2) ($F=257.17, p<.05$; $F=226.54, p<.05$) respectively. It can be concluded that by 5 years of age urban children could develop an understanding of desire component and understanding of the mental state or belief component of other person's emotion.

Desire based emotions: Urban children's attribution of emotion and desire explanation started from 3 years of age. This indicated an early onset of such an understanding in urban children. Interestingly, the belief explanation of desire based emotion is noted at higher age levels i.e. 5 years onwards. It may be noted here that even at younger age levels children give more desire explanation for happiness and sadness than belief based explanations.

Belief based emotion: At 4 years of age urban children begin to show an understanding of belief based emotions. Significant improvement in performance of urban children was noted around 5 to 6 years of age. It may be noted from the mean scores that probably the occurrence of desire based explanations are as much as that of belief based explanation in surprise and curiosity suggesting a strong desire loading in belief based emotion.

It is clear that desire explanation in desire based emotions were evident at younger age levels whereas differences in making belief based explanation in belief based emotion were evident at higher age levels. This finding supports the finding of Wellman and Wooley (1990) regarding sequence of development of beliefs and desires. At the same time it also supports Hadwin and Perner (1991) that understanding of surprise and curiosity as belief based emotion occur after 5 years of age. Intensity of parent-child interaction was judged from (1) time spent with children, (2)

keeping promises given to them, (3) giving surprise gifts, (4) sharing daily experiences, (5) story telling, (6) taking part in family conversation, etc. 75% urban mothers encourage the above activities. The early understanding of emotion, at least for desire based emotion could be explained by this parent child interaction and other contextual factors.

Conclusion

The aim of this study was to investigate development of children's attribution of desired based and belief based emotion such as happiness, sadness and surprise and curiosity respectively. In regard to attribution of emotions such as : happy, sad, surprise and curiosity is concerned, significant development was noted during 3 to 6 years of age. Such change is remarkably different for desire based and belief based emotions, which is in conformity with earlier research in the area of TOM. The urban children were observed to be developing an understanding of desire based emotions (happy & sad) in others at an earlier age than belief based emotion. Urban children's development is delayed in belief component of emotion compared to the desire component in happiness, sadness, surprise and curiosity. The occurrence of family talk is significantly high among the urban children which could be considered as an important determining variable for children's development of attribution of emotions probably confirming the finding of Dunn (1991). Culture seems to play an important role in children's development of attribution of emotions of others. Children's understanding of emotions at this early age i.e. 3 years atleast in case of desire based emotions is probably tied to socialization practices. However, future research with indigenous tasks and observations would further our understanding of emotions in children.

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