Journal of Adolescence 56 (2017) 84–90

Contents lists available at ScienceDirect

Journal of Adolescence

journal homepage: www.elsevier.com/locate/jado

The peer's point of view: Observing a peer performing an action enhances third-person perspective in adolescents

Massimiliano Conson [a, *], Sara Salzano [b], Alessandro Frolli [c], Elisabetta Mazzarella [a]

[a] Department of Psychology, Second University of Naples, Caserta, Italy
[b] Cognitive-Behavioral School of Psychotherapy "Serapide SPEE", Naples, Italy
[c] University of International Studies of Rome – UNINT, Roma, Italy

ARTICLE INFO

Article history:
Received 10 June 2016
Received in revised form 22 January 2017
Accepted 4 February 2017

Keywords:
Perspective taking
Peer influence
Motor simulation
Action observation

ABSTRACT

Adolescents are particularly prone to peer influence. Since group membership modulates the person's tendency to take someone else's viewpoint, here we decided to investigate whether adolescents are influenced by the presence of a peer when taking another person's perspective. A group of adolescents from upper secondary schools in Naples (Italy) had to observe scenes of an actor (an adolescent or an adult) gazing, grasping, gazing/grasping an object or staying still. When required to judge the spatial location of the object, the adolescent participants adopted the actor's viewpoint (third-person perspective) more frequently when the actor was an adolescent rather than when he was an adult and when the adolescent actor grasped the object. Thus, adolescents seem particularly prone to mentally simulate someone else's actions when the other person is a peer. These findings suggest that modulating motor simulation processes via social environmental factors could influence adolescents' perspective taking.

1. Introduction

Group membership is an important factor in human social interactions (Baumeister & Leary, 1995) and is a primary aspect in the life of adolescents who are particularly susceptible to peer influence (Brown, 2004; Steinberg & Monahan, 2007). Indeed, there is convergent evidence that peer influence is stronger in adolescence than in adulthood (Chassin et al., 2004; Gardner & Steinberg, 2005; Steinberg & Silverberg, 1986). For instance, Gardner and Steinberg (2005) found that exposure to peers during a risk-taking task doubled the amount of the risky behavior among middle adolescents, increased among college undergraduates, while had no impact at all among adults.

Different paradigms have been developed to investigate the influence of group membership on human behavior. In a seminal study, Tajfel, Billig, Bundy, and Flament (1971) experimentally formed groups based on an arbitrary and randomly assigned criterion implying the participants' ability to estimate the numbers of dots presented on a screen. Results demonstrated that the subjects preferentially rewarded members of their own group and punished members of the out-

* Corresponding author. Developmental Neuropsychology Clinic, Department of Psychology, Second University of Naples, Viale Ellittico 31, 81100 Caserta, Italy.
E-mail address: massimiliano.conson@unina2.it (M. Conson).

http://dx.doi.org/10.1016/j.adolescence.2017.02.001
0140-1971/

group, thus highlighting that rewarding and punishing behavior is affected by the perceived group membership of others. More recently, other authors investigated in-group/out-group membership by testing the effect of race membership on different behavioral tasks (Avenanti, Sirigu, & Aglioti, 2010; Müller et al., 2011; Sessa, Meconi, Castelli, & Dell'Acqua, 2014). For instance, Avenanti et al. (2010) assessed the excitability of sensory-motor corticospinal neurons in participants viewing videos of a hand receiving painful (needle penetration) or non-painful stimulations. Crucially, the hand could belong to an own-race member or could belong to an other-race member. The authors found a significant reduction in excitability of the corticospinal neurons (as if participants were self-experiencing painful stimuli) when they were watching the hand of own-race members being stimulated painfully; instead, this reaction was not found in participants watching the hand of other-race members. Taken together, these findings would suggest that group membership could influence the tendency to put oneself into another person's place.

No study has directly investigated the effect of group membership on the ability to take another person's viewpoint in adolescence. Here, we assessed whether group membership enhances the capacity of adolescent participants to adopt another person's perspective. Since the relevance of group membership in adolescents' life, we could hypothesise that taking another person's perspective was enhanced when the adolescent had the opportunity to take the viewpoint of a peer rather than that of an adult.

There are two levels in perspective taking (Flavell, Everett, Croft, & Flavell, 1981; Piaget & Inhelder, 1967): level-1 consists of the ability to judge what an another person can see or not see from her/his own point of view, while level-2 consists of the ability to understand how another person perceives a given object from her/his viewpoint. Examining a visual scene from one's own point of view is termed first-person perspective, whereas examining the scene from another person's point of view is called third-person perspective.

The first-person perspective seems to have priority in both in children and adults (Epley, Morewedge, & Keysar, 2004; Samson & Apperly, 2010), but there is evidence that in both level-1 (Samson, Apperly, Braithwaite, Andrews, & Bodley Scott, 2010) and level-2 (Mazzarella, Hamilton, Trojano, Mastromauro, & Conson, 2012; Mazzarella, Ramsey, Conson, & Hamilton, 2013; Tversky & Hard, 2009) perspective taking situations the onlooker can adopt another's point of view in a spontaneous way. In a level-2 perspective taking experiment, Tversky and Hard (2009) asked participants to view a photograph of two objects on a table and describe the location of one object relative to another. If the photo included an actor looking or reaching for one of the objects, one third of participants spontaneously adopted the actor's perspective, describing the locations from the other's right or left. Successive studies employing analogous paradigms underlined the influence of another person's action on the onlooker's tendency to adopt a third-person perspective (Furlanetto, Cavallo, Manera, Tversky, & Becchio, 2013; Mazzarella et al., 2012).

Recently, Mazzarella et al. (2012) required participants to judge the left/right location of a target object (a bottle or a glass) on a table with a person behind; the person grasped, gazed, grasped/gazed towards the object, or he was still. Participants could provide two types of response: a first-person or a third-person response. In the first case, for instance participants responded "left" to refer to the object positioned on the actor's "right" side, thus showing that they had coded the target location from their own (first-person) viewpoint. In the second case, for instance participants responded "left" to refer to the object positioned on the actor's "left" side, thus showing that they had coded the target location from the actor's (third-person) viewpoint. By these means, Mazzarella et al. (2012) found that typical young adults provided a higher number of third-person responses when observing the actor grasping the target. This effect has been ascribed to the activation of motor simulation processes (Mazzarella et al., 2012; Tversky & Hard, 2009). Motor simulation implies that sensorimotor information related to movement execution is also recruited by other motor-related skills such as imitation, motor imagery and action understanding (Decety & Grèzes, 2006; Grèzes &, Decety, 2001). In perspective taking tasks like that described above, motor simulation would be involved in the ability of the onlooker to identify with the actor and represent the actor's action from her/his position in space (Bråten, 1998; Conson et al., 2015b; Hobson & Hobson, 2007).

In the present study, we asked a group of adolescents to perform the level-2 perspective task devised by Mazzarella et al. (2012), but crucially here the actor interacting with the target object could be an adolescent or an adult. Our aim was twofold. First, we tested whether the influence of another person on adolescent's perspective taking was modulated by group membership. We hypothesised that, due to the priority of group membership in adolescence, the tendency to identify with another individual, taking a third-person perspective, was stronger when the actor was a participant's peer rather than when he was an adult. Second, following studies on adult perspective taking (Mazzarella et al., 2012; Tversky & Hard, 2009) we aimed at verifying whether adolescents provided a higher number of third-person responses when observing the actor performing a grasping action on the target object.

2. Methods

2.1. Participants

Sixty typical adolescents took part in the experiment (30 females; age range 15–17; mean age = 16, SD = 0.8; girls and boys did not differ significantly in age, $p > 0.05$). All participants were white Caucasian, right-handed and were recruited from secondary schools in Naples (Italy). Performance on the Raven's Progressive Matrices (Gugliotta, Bisiacchi, Cendron, Tressoldi, & Vio, 2009; Raven, 1954) was used as an indicator of general cognitive functioning (mean score = 100.1, SD = 2.3; girls and boys did not differ significantly in estimated cognitive ability, $p > 0.05$).