ARTICLE IN PRESS

Journal of Adolescence xxx (2010) 1–5

Contents lists available at ScienceDirect

Journal of Adolescence

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

Capturing the peer context: Common themes and synergies

Thomas A. Kindermann [a,*], Melanie J. Zimmer-Gembeck [b], Amanda Duffy [b]

[a] *Department of Psychology, Portland State University, P.O. Box 751, Portland, OR 97207-0751, USA*
[b] *Griffith University, School of Psychology and Griffith Health Institute, Australia*

Keywords:
Peer relationships
Romantic relationships
Developmental systems
Methodology

In this Special Issue we have included a series of papers that move forward our efforts to conceptually and methodologically capture various forms of peer relationships and contexts. We hoped this would profit theory and research by allowing different streams, such as those focused on peer groups, friendships and romantic relationships, to benefit synergistically from one another. In this commentary we emphasize the similarities and differences between our research areas, as represented by the papers in this Special Issue, by addressing four major questions: "What is 'the peer context' to be captured?", "How can peer processes be captured?", "Do we need to reconsider the meanings of similarity and social influence?" and "Will we need to think more about natural windows of time?" Following this commentary, Brett Laursen (in this volume) provides a general discussion of the papers in this Special Issue and gives an overview of some of the most challenging issues we continue to face.

What is "the peer context"?

We have included several papers on classical approaches to peer contexts: assessments of friendships (in this volume represented by papers from Furrer, in this volume; Ojanen, Sijtsema, Hawley, & Little, in this volume), cliques and social networks of frequent interaction partners (covered by Kiuru, Burk, Laursen, Salmela-Aro, & Nurmi, in this volume; Rulison, Gest, Loken, & Welsh, in this volume), and romantic partnerships (represented by Furman & Winkles, in this volume; van Dulmen & Goncy, in this volume; Wargo Aikins, Simon, & Prinstein, in this volume; Zimmer-Gembeck & Ducat, in this volume). All of these contexts are built on interactions between individuals close in age (peers), but they are not the same. Friendships are characterized by mutual and intimate relationships, whereas cliques and interaction networks can consist of friends with varying degrees of closeness, but are more broadly defined by frequency of interaction and cohesive patterning. Romantic relationships exhibit all three characteristics: high relationships closeness, frequent interaction, and high cohesiveness of the subgroup (Furman, Brown, & Feiring, 1999; Furman & Collins, 2009).

There is also a difference in developmental onset. We have a natural progression of peer relationships with age, from dyadic interactions in preschool (Howes, 2009), to peer groups and friendships (Berndt & McCandless, 2009; Bukowski, Motzoi, & Meyer, 2009; Cairns, Leung, Buchanan, & Cairns, 1995) to romantic relationships (Collins, Welsh, & Furman, 2009; Furman & Collins, 2009, Zimmer-Gembeck, 1999). At least from elementary school age onwards, there is not just one peer context, but multiple contexts that co-exist and develop, change and transform over time. Thus, different peer

* Corresponding author. Tel.: +1 503 725 3970; fax: +1 503 725 3904.
E-mail address: kindermannt@pdx.edu (T.A. Kindermann).

0140-1971/$ – see front matter © 2010 The Association for Professionals in Services for Adolescents. Published by Elsevier Ltd. All rights reserved.
doi:10.1016/j.adolescence.2010.08.001

Please cite this article in press as: Kindermann, T. A., et al., Capturing the peer context: Common themes and synergies, Journal of Adolescence (2010), doi:10.1016/j.adolescence.2010.08.001

ARTICLE IN PRESS

relationships come into play at different points in development. Many of those are connected to prior relationships and can transform the existing relationships. Perhaps, models of transformation processes may be the key theoretical concepts that need to be developed (see also Furman, 1993; Zimmer-Gembeck, 2002). We hope that the papers in this Special Issue can aid in the development of conceptualizations of this increasing complexity, while also helping to progress our discipline to a developmental science of relationships (Laursen, 1995; see also Laursen, in this volume).

How can processes be captured?

In recent decades, attention has focused most on the people who make up a dyad or group, on their perceptions of relationships, as well as on the actual characteristics of partners. Before the widespread availability of applications to conduct multi-level modeling and estimations of actor-partner models, it had been almost impossible to use perception data in a way that processes emerging from within the person could be differentiated from those that have more social origins. When associations were found, it was difficult to discern whether these were due to perception, due to characteristics of the perceiver, or due to actual characteristics of the peer context.

When it comes to close relationships, individuals know best whom they prefer, emotionally value, and want to be intimate partners with. People themselves have most access to what is important to them. Thus, *self-reports* have traditionally been the primary method of identifying peer contexts and the key method of study in the area of romantic relationships (see Furman & Winkles, in this volume; Van Dulmen & Goncy, in this volume; Wargo Aikins et al., in this volume; Zimmer-Gembeck & Ducat, in this volume). However, self-reports tend to be influenced by characteristics of the reporters as much as by the phenomena that are being reported. Thus, there are questions about the extent to which self-reports capture "real" characteristics of a context, more so than personal idiosyncrasies (or biases, e.g., self-enhancement bias), social stereotypes (e.g., reputations of candidates), or perceptions that only partners in a subgroup share with one another (e.g., relationship narratives).

This affects people's descriptions of their own psychological characteristics, the descriptions of their relationships, as well as their information about others. To make sure that "real" features of relationships are captured, usually only friendships are considered on which both friends agree (reciprocal friendships); the same applies to peer groups (i.e., several people agree on a group). In studies of romantic relationships, sometimes dyads are recruited but it is rare that reciprocity is considered as a determinant of romantic involvement (Brown, 2006). Assessment of reciprocity, as used in studies of friendships, is one particular methodological strategy from which research on adolescent romantic relationships could benefit.

Some peer network researchers have further concerns: It can appear troublesome when self-reports are used to identify peer affiliations (e.g., about peer crowds whose members share similar attributes, about friends, or about peers with whom they spend most of their time) and at the same time, to also describe these peers' attributes. One alternative method for studying peer networks is Socio-Cognitive Mapping (SCM; Cairns et al., 1995). SCM makes it possible to identify people's affiliations through participant observations by others (usually classmates). The method is less concerned with whether people share intimate relationships, although it is assumed that most frequent interaction partners do. Frequency of interaction is seen as the developmentally "active" characteristic of the context. In this Special Issue, Rulison et al. (in this volume) have presented an SCM example that focused on adolescents' aggressive behavior.

When the individuals in a peer context are identified, the next question is about how the characteristics of the many context members should be aggregated. Furrer's (in this volume) paper argues convincingly for "collective" context accounts; traditional context averages are just one form of these. Aggregate context scores capture the contexts' central tendencies over and above individuals' perceptions. These may be social verdicts (i.e., the overall reputation of a child in a setting, e.g., in the contemporary sociometric literature), group labels that context members or others assign to a group (e.g., in the literature on social crowds), or averages across the individual characteristics of an identified group of people. When everybody in a setting rates everybody else (Round Robin designs; Kenny, 1994; 2008) or when actor-partner models are employed, it is possible to differentiate "actor" effects, "partner" effects, and "relationship" or "dyad" effects in people's perceptions (Card, Selig, & Little, 2009). Such models have been successfully applied to friendship dyads and groups (e.g., Burk & Laursen, 2005; Laursen, 1995; Popp, Laursen, Kerr, Stattin, & Burk, 2008; Zimmer-Gembeck, Waters, & Kindermann, 2010). In the current volume, the papers by Van Dulmen and Goncy (in this volume), and by Zimmer-Gembeck and Ducat (in this volume) demonstrate applications to romantic relationships.

A specific but important problem comes from the nestedness of peer contexts and the implications the aggregation methods have for analytic techniques. If identified peer groups or networks are more or less separated and non-overlapping (e.g., by applying factor analysis, see Rulison et al., in this volume; or graph-theoretical or clustering procedures, e.g., Kwon & Lease, 2009; Ryan, 2001), or when reciprocal friendship networks are naturally not overlapping, a sophisticated analysis strategy requires multi-level modeling that partitions within-network variation from between-network variation (Rulison et al., in this volume) or models of individual-network co-evolution (e.g., SIENA; see Kiuru et al. in this volume; Ojanen et al. in this volume). This allows researchers to incorporate estimates of cross-context differences in addition to inter-individual differences in their models. Often, however, networks are highly overlapping and have no well-defined borders. In such instances, current hierarchical modeling approaches cannot be used.

The possibility of going beyond context member averages when examining context differences was also considered in the current volume, with two papers presenting novel approaches. Rulison et al. (in this volume) presents an analysis of "typical" versus "untypical" group affiliations in which adolescents can be found over time. These authors used a context averaging procedure, but weighed averages differently depending on the extent to which a person's group score matched his or her "typical" peer environment at a given time. In the second paper, Furrer (in this volume) compared the utility of "*additive*"

Please cite this article in press as: Kindermann, T. A., et al., Capturing the peer context: Common themes and synergies, Journal of Adolescence (2010), doi:10.1016/j.adolescence.2010.08.001

ARTICLE IN PRESS

models (using the average across a person's group of friends) versus "*referent-shift*" models when forming collective context accounts. Referent-shift models take into consideration the amount of group cohesion that exists in a peer context. This can be subjective cohesion, for example in the extent to which partners in relationships agree with one another, or a more objective form of homogeneity (dispersion) among context members with respect to key variables.

Both approaches suggest that social influences from peer contexts can differ depending on context characteristics (e.g., typicality or dispersion). We think that studies on context variability should have two important consequences: First, context differences alert us to consider that reliability and stability in peer research may lead to considering three forms of reliability (see also Luedtke et al., 2008): The reliability with which individual context members are identified, the reliability of their aggregated psychological scores, and the reliability of contexts with regard to typicality over time. This would add to traditional considerations of reliability of individual scores. Second, concerns for the variability of peer contexts should allow for more advanced theorizing about the functions of these contexts. For instance, cohesive and typical contexts may be more stable over time, more capable of keeping people in line with group norms, but perhaps also less influential. Untypical and diverse contexts may, if people remain together, exert larger developmental influences. We hope that the papers in this issue suggest more than technical refinements and outline steps towards developing conceptual frameworks about inter-individual differences in peer contexts.

Do we need to reconsider the meanings of similarity and social influence?

People who share a social context and close relationships, tend to show similarities to one another. Traditionally, the similarity is explained by selection and/or socialization processes. Selection effects exist when relationship partners are chosen on the basis of interpersonal similarity ("birds of a feather"; Hamm, 2000). In this issue, papers by Kiuru et al. (in this volume), Ojanen et al. (in this volume), Rulison et al. (in this volume), and Wargo Aikins et al. (in this volume) explicitly address this issue. Although not directly addressing selection effects, Van Dulmen and Goncy (in this volume), as well as Zimmer-Gembeck and Ducat (in this volume), give attention to similarity in their dyadic analyses.

Most peer researchers assume that person-context similarity can also come about through socialization processes. By examining longitudinal change, the papers by Kiuru et al. (in this volume), Rulison et al. (in this volume), Ojanen et al. (in this volume), and Wargo Aikins et al. (in this volume) address peer, friendship, and romantic socialization processes over time. Although social influences can only be shown with longitudinal designs, peer researchers are often tempted to interpret studies on person-context similarity at one point in time as indicating social influences (e.g., when members of a group agree on social norms, or when relationship partners agree on their own characteristics or those of the relationship). It is possible that relationship norms at one point in time have come about through processes of mutual influence. In this Issue, the papers by Wargo Aikins et al. (in this volume), Furman and Winkles (in this volume), Van Dulmen and Goncy (in this volume), and Zimmer-Gembeck and Ducat (in this volume) have addressed relationship "norms" in romantic relationships.

For studies on relationships, it may be actually less important how peer norms came about (they may even have come about through partner selection), the important thing is that they can be guideposts for the partner's future development in the relationship. In peer networks, group homogeneity is sometimes depicted as a characteristic that makes them more stable over time; in romantic relationships, partner agreement is sometimes similarly seen as a sign of quality of the relationship. What seems to be most needed in both fields are studies that address synchrony (or developing asynchrony) between individual and context development over time.

Finally, an emerging strand of research on peer context formation is motivational in nature. This strand is specifically directed at the question of *why* some people become affiliated, why they stay together, and why others do not. Furrer (in this volume), as well as Ojanen et al. (in this volume) have contributed studies that may help ascertain individual differences in people's motivation to form friendship groups, to remain in their relationships, or to dissolve them. It should be possible to extend these kinds of questions to studies on romantic relationships.

Will we need to think more about natural windows of time?

Peer networks are ubiquitous in childhood and adolescence; romantic relationships are (almost) normative during emerging adulthood and then co-exist with peer relationships. Although the contexts are age-stratified, both contexts' time perspective is open-ended, and there may not be genuine time windows other than broad age ranges.

However, there are *life transitions*. Peer selection processes happen at any time, but the form of these processes may be different at the start of something new (e.g., coming to a new school, taking new classes, onset of adolescence/puberty). Assortativeness (homophily, agreement) will always be present in some form, so that people who form relationships will a-priori be more similar to one another than people who do not. However, the specific selection criteria (what people are similar on) will likely change. Moreover, the extent to which similarity (or complementarity) is important for people's future may also change. Thus, within context consensus (peer norms) may have windows of opportunity for change, especially, when the peer context changes itself (i.e., members drop out or new ones are added; romantic relationships dissolve or new ones are formed), or when the macro-environment changes (e.g., school transitions; see also Parker & Seal, 1996, for a discussion). Influence processes will be similarly time-sensitive: They may be different in different developmental periods (e.g., there may be more pressure towards convergence in pre-adolescence than later, or in early stages of relationships). Like selection processes, they may also be more powerful at times of transitions.

Please cite this article in press as: Kindermann, T. A., et al., Capturing the peer context: Common themes and synergies, Journal of Adolescence (2010), doi:10.1016/j.adolescence.2010.08.001

Nevertheless, some peer phenomena have *natural time windows*: When looking at peer influences on academic behavior in school, changes within the school year appear most important (i.e., when students remain with the same classmates; summer may make a difference because different relationships are formed). In comparison, cross-year (and cross-transition) changes allow researchers to examine the combined effects of previous and newly formed peer relationships (see Ojanen et al., in this volume).

The study of romantic relationships, because the area is newer than studies of peer groups, has not much considered natural time windows or developmental pathways. Studies across life transitions or relationship transitions are virtually unknown. However, as with peer groups, vast inter-individual differences can be expected across transitions. The papers by Furman and Winkles (in this volume), Van Dulmen and Goncy (in this volume), as well as by Zimmer-Gembeck and Ducat (in this volume) can be seen as starting points towards a developmental framework for developmental processes in relationships.

Looking ahead

Recent methodological developments show many directions how we can enhance the effectiveness of our efforts to capture peer contexts of various forms, to ascertain their interrelations, and to examine their unique and joint contributions to children's and adolescents' development. These advances are exciting and make us optimistic about the future of studies on peer contexts in general, as well as for about our particular research areas. This also comes at a time when research programs reach out to examining variations across cultures (see the Special Issue in the International Journal of Behavioural Development, Seiffge-Krenke & Connolly, 2010). Increased effectiveness of our methodological tools to capture .peer contexts should be very beneficial for intercultural comparisons.

However, methodological advancement will not easily lead to new insights if the advances outpace the development of conceptualizations and theoretical frameworks that allow us to weigh and structure what we learn with our new methodologies. For the final paper in this Special Issue, we have invited Brett Laursen to give a commentary on the implications of the field's rapid methodological development and on the challenges that are ahead.

References

Berndt, T. J., & McCandless, M. A. (2009). Methods for investigating children's relationships with friends. In K. H. Rubin, W. Bukowski, & B. Laursen (Eds.), *Peer interactions, relationships, and groups* (pp. 63–81). New York: Guilford.

Brown, B. B. (2006). A few "course corrections" to Collins and van Dulmen's "the course of true love." In A. C. Crouter, & A. Booth (Eds.), *Romance and sex in adolescence and emerging adulthood: Risks and opportunities* (pp. 113–123) Mahwah, NJ: Erlbaum.

Bukowski, W. M., Motzoi, C., & Meyer, F. (2009). Friendship as process, function, and outcome. Handbook of peer interactions, relationships, and groups. In K. H. Rubin, W. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 100–117). New York: Guilford.

Burk, W. J., & Laursen, B. (2005). Adolescent perceptions of friendship and their associations with individual adjustment. *International Journal of Behavioral Development, 29*, 156–164.

Cairns, R. B., Leung, M.-C., Buchanan, L., & Cairns, B. D. (1995). Friendships and social networks in childhood and adolescence: fluidity, reliability, and interrelations. *Child Development, 66*, 1330–1345.

Card, N. A., Selig, J. P., & Little, T. D. (2009). *Modeling dyadic and interdependent data in developmental research*. Mahwah, NJ: Erlbaum.

Collins, W. A., Welsh, D. P., & Furman, W. (2009). Adolescent romantic relationships. *Annual Review of Psychology, 60*, 631–652.

van Dulmen, M., & Goncy, E.A. Extending the Actor-Partner Interdependence Model to include cross-informant data, in this volume.

Furman, W. (1993). Theory is not a four-letter word: needed directions in the study of adolescent friendships. *New Directions in Child Development, 60*, 89–103.

Furman, W., Brown, B. B., & Feiring, C. (1999). *The development of romantic relationships in adolescence*. Cambridge, UK: Cambridge University Press.

Furman, W., & Collins, W. A. (2009). Adolescent romantic relationships and experiences. In K. H. Rubin, W. Bukowski, & B. Laursen (Eds.), *Peer interactions, relationships, and groups* (pp. 341–360). New York: Guilford.

Furman, W., & Winkles, J.K. Predicting romantic involvement, relationship cognitions, and relationship qualities from physical appearance, perceived norms, and relational styles regarding friends and parents, in this volume.

Furrer, C. Capturing the friendship context with a collective property: Friendship group engagement vs. disaffection, in this volume.

Hamm, J. V. (2000). Do birds of a feather flock together? The variable bases for African American, Asian American, and European American adolescents' selection of similar friends. *Developmental Psychology, 36*, 209–219.

Howes, C. (2009). Friendship in early childhood. In K. H. Rubin, W. Bukowski, & B. Laursen (Eds.), *Peer interactions, relationships, and groups* (pp. 180–192). New York: Guilford.

Kenny, D. A. (1994). *Interpersonal perception: A social relations analysis*. New York: Guilford Press.

Kenny, D. A. (2008). Thinking about the developmental course of relationships. In N. A. Card, J. P. Selig, & T. D. Little (Eds.), *Modeling dyadic and interdependent data in developmental research*. Mahwah, NJ: Erlbaum.

Kiuru, N., Burk, W., Laursen, B., Salmela-Aro, K., & Nurmi, J.-E. Pressure to drink but not to smoke: Disentangling selection and socialization in adolescent peer networks and peer groups, in this volume.

Kwon, K., & Lease, M. A. (2009). Examination of the contribution of clique characteristics to children's adjustment: clique type and perceived cohesion. *International Journal of Behavioral Development, 33*, 230–242.

Laursen, B. (1995). Closeness and conflict in adolescent peer relationships: interdependence with friends and romantic partners. In W. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 186–210). Cambridge, UK: Cambridge University Press.

Laursen, B. Capturing the peer context: The paradox of progress, in this volume.

Luedtke, O., Marsh, H. W., Robitzsch, A., Trautwein, U., Asparouhov, T., & Muthen, B. (2008). The multilevel latent covariate model: a new, more reliable approach to group-level effects in contextual studies. *Psychological Methods, 15*, 203–229.

Ojanen, T., Sijtsema, J.J., Hawley, P.H., & Little, T.D. Intrinsic and extrinsic motivation in early adolescents' friendship development: Friendship selection, influence, and prospective friendship quality, in this volume.

Parker, J. G., & Seal, J. (1996). Forming, losing, renewing, and replacing friendships: applying temporal parameters to the assessment of children's friendship experiences. *Child Development, 67*, 2248–2268.

Popp, D., Laursen, B., Kerr, M., Stattin, M., & Burk, W. J. (2008). Modeling homophily over time with an actor-partner interdependence model. *Developmental Psychology, 44*, 1028–1039.

Please cite this article in press as: Kindermann, T. A., et al., Capturing the peer context: Common themes and synergies, Journal of Adolescence (2010), doi:10.1016/j.adolescence.2010.08.001

ARTICLE IN PRESS

Rulison, K.L., Gest, S.D., Loken, E., & Welsh, J.A. Rejection, feeling bad, and being hurt: Using multilevel modeling to clarify the link between peer group aggression and adjustment, in this volume.

Ryan, A. M. (2001). The peer group as a context for the development of young adolescents' motivation and achievement. *Child Development, 72*, 1135–1150.

Seiffge-Krenke, I., & Connolly, J. (2010). Adolescent romantic relationships across the globe: Involvement, conflict management, and linkages to parents and peer relationships. *Introduction to the Special Issue: International Journal of Behavioral Development, 34*, 97.

Wargo Aikins, J., Simon, V.A., & Prinstein, M.J. Romantic partner selection and socialization of young adolescents' behavior problems and substance use, in this volume.

Zimmer-Gembeck, M. J. (1999). Stability, change, and individual differences in involvement with friends and romantic partners among adolescent females. *Journal of Youth and Adolescence, 28*, 419–438.

Zimmer-Gembeck, M. J. (2002). The development of romantic relationships and adaptations in the system of peer relationships. *Journal of Adolescent Health, 31*, 216–225.

Zimmer-Gembeck, M.J., & Ducat, W.A. Positive and negative romantic relationship quality: Age, familiarity, attachment and well-being as correlates of couple agreement and projection, in this volume.

Zimmer-Gembeck, M. J., Waters, A. M., & Kindermann, T. (2010). A social relations analysis of liking for and by peers: associations with gender, depression, peer perception, and worry. *Journal of Adolescence, 33*, 69–81.

Please cite this article in press as: Kindermann, T. A., et al., Capturing the peer context: Common themes and synergies, Journal of Adolescence (2010), doi:10.1016/j.adolescence.2010.08.001