Journal of Environmental Psychology 34 (2013) 45–54

Contents lists available at SciVerse ScienceDirect

Journal of Environmental Psychology

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

Neighborhood social connectedness and adolescent civic engagement: An integrative model

Michela Lenzi*, Alessio Vieno, Massimiliano Pastore, Massimo Santinello

Department of Developmental and Social Psychology, University of Padova, via Belzoni, 80-35131 Padova, Italy

ARTICLE INFO

Article history:
Available online 25 December 2012

Keywords:
Neighbourhood social connectedness
Place attachment
Adolescence
Civic engagement
Positive youth development
Path analysis

ABSTRACT

The pathways through which the neighborhood can influence civic development in adolescence are not fully understood. The present study aims to develop an integrative model linking neighborhood social connectedness (neighborhood intergenerational closure, neighborhood trust and reciprocity, social relationships with neighbors and neighborhood friends) and different components of youth civic engagement (local and global civic responsibility, civic competencies, civic behaviors), taking into account the mediating effects of attachment to the neighborhood and non-parental adults' network. Participants were 403 early- and middle-adolescents (47.9% males), randomly selected, coming from a mid-sized Italian city. The theoretical model proposed in the current study was partially validated. Neighborhood social connectedness is associated with higher levels of civic engagement in adolescence, and adolescents' network of adults and their levels of attachment to the neighborhood mediate this association. The results offer important implications for future research and prevention programs that aim to impact social systems to nurture adolescents' civic engagement.

1. Introduction

The development of civic engagement is emerging as a critical area for environmental and community psychology and within developmental science (Flanagan, 2008; Lewicka, 2005; Youniss, 2009; Zaff, Hart, Flanagan, Youniss, & Levine, 2010). Indeed, adolescent civic engagement represents a critical aspect of the identity formation process (Erikson, 1985; Smetana & Metzger, 2005) and have been found to be associated with a better psychosocial adjustment in adolescence (e.g., Fredricks & Eccles, 2006; Schmidt, Shumow, & Kackar, 2007; Vieno, Nation, Perkins, & Santinello, 2007) and to civic engagement in adulthood (Hart, Donnelly, Youniss, & Atkins, 2007; Yates & Youniss, 1998; Zaff, Malanchuk, & Eccles, 2008). Moreover, adolescents' involvement in civic activities can provide services to the local community, thus contributing to the effective functioning of society (Flanagan & Sherrod, 1998). Then, it is critical to understand which factors can promote civic development during adolescence.

Recent studies based on ecological systems theory (Bronfenbrenner, 1979) show the role of the local community for the socialization of young people to civic goals and behaviors (e.g., Duke, Skay, Pettingell, & Borowsky, 2009). For example, place attachment and neighborhood ties were often studied by environmental psychologists for their connection to civic involvement, participation, and pro-environmental attitudes (e.g., Lewicka, 2005; Scannell & Gifford, 2010). Although much has been learned about factors that lead to civic engagement (Sherrod, 2007; Watts & Flanagan, 2007; Zaff et al., 2010), the generation of theories about civic engagement have been less fruitful (Wilkenfeld, Lauckhartdt, & Torney-Purta, 2010) and there is still a lack of clarity on the mechanisms through which these factors operate (Zaff et al., 2008). For this reason, the main aim of the current study is to develop an integrative model linking neighborhood social connectedness and different components of youth civic engagement (local and global civic responsibility, civic competencies, and civic behaviors), analyzing the mediating effects of attachment to the neighborhood and non-parental adults' network.

1.1. Neighborhood social connectedness as a determinant of adolescent civic engagement

Civic engagement can be defined as the feelings of responsibility toward the common good, the actions aimed at solving community issues and improving the well-being of its members and the competencies required to participate in civic life. The local community represents a critical context where to learn how to become an active citizen; indeed, the social processes occurring within the neighborhood have been defined as a microcosm of

* Corresponding author. Tel.: +39 049 827 8494; fax: +39 049 827 8451.
E-mail address: michela.lenzi@unipd.it (M. Lenzi).

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http://dx.doi.org/10.1016/j.jenvp.2012.12.003

public life, in which adolescents have opportunities to exercise rights and assume responsibilities as members of the local community, thus learning how to contribute to the common good (Flanagan, Cumsille, Gill, & Gallay, 2007).

Various studies have been conducted with the aim of understanding which characteristics of the local community may promote or hinder civic development, thereby elucidating some of the pathways responsible for this association (Atkins & Hart, 2003; Da Silva, Sanson, Smart, & Toumbourou, 2004; Duke et al., 2009; Flanagan, Cumsille, et al., 2007; Hart, Atkins, Markey, & Youniss, 2004; Kahne & Sporte, 2008). Studies examining the association between neighborhood context and adolescents' civic engagement have mostly been focused on social processes of the local community, analyzing, in particular, the levels of social connectedness within the neighborhood. Findings of these studies show that when adolescents perceive themselves to be living in a neighborhood where people look after each other and are willing to collaborate to solve common issues, they also report a higher commitment to civic participation (Flanagan, Cumsille, et al., 2007; Kahne & Sporte, 2008). Despite the conceptualization of neighborhood connectedness (social cohesion, social capital, informal social control, community connectedness), empirical support for its role in influencing adolescent civic engagement has been found, showing that higher levels of connectedness are associated to a stronger civic engagement in adolescence (Albanesi, Cicognani, & Zani, 2007; Da Silva et al., 2004; Duke et al., 2009; Flanagan, Cumsille, et al., 2007; Kahne & Sporte, 2008). In the current study, two different components of neighborhood social connectedness will be considered: neighborhood social cohesion (operationalized as *intergenerational closure* and levels of *trust and reciprocity*); and personal connectedness in the local community (conceptualized as the adolescent *network of friends* in the neighborhood and the quality of personal *social relationships with neighbors*).

1.2. Linking neighborhood social features and adolescent civic engagement: potential pathways of influence

There is a paucity of theoretical models oriented to explain how civic attitudes, behaviors and competencies develop during adolescence in relation to neighborhood features (Wilkenfeld et al., 2010; Wood & Giles-Corti, 2008). Despite the paucity of theoretical models, the integration between community psychology and traditional developmental theories allows the identification of several processes through which neighborhood social connectedness may influence adolescent civic engagement.

More specifically, recent theoretical advances of research on neighborhood effects, starting from early models such as the social disorganization theory (Shaw & McKay, 1942), identified some processes linking neighborhood features and adolescent outcomes (Leventhal & Brooks-Gunn, 2000; Leventhal, Dupere, & Brooks-Gunn, 2009). Although the *institutional resources*, *norms and collective efficacy* and *relationships and ties* models (Leventhal & Brooks-Gunn, 2000) have been developed with a main focus on adolescent emotional and behavioral problems, the pathways identified by the authors can also be useful in the understanding of the neighborhood effects on adolescent civic development.

In particular, adapting the assumption of the norms and collective efficacy model (Leventhal & Brooks-Gunn, 2000) to the investigation of adolescent civic engagement, two potential pathways linking neighborhood social connectedness and youth civic development can be identified: 1) living in a highly cohesive neighborhood, where people help each other and work together for the community, adolescents may be socialized to civic norms and behaviors, learning how to contribute to the common good; 2) in neighborhoods with higher levels of social connectedness, where residents support each other and are willing to work on behalf of the community, adolescents may be more likely to create social networks with civically responsible adults (which, in turn, may have a positive influence on adolescent civic engagement).

The models elaborated by Leventhal and Brooks-Gunn (2000), Leventhal et al. (2009) represent general pathways linking neighborhood context and youth development. In order to elucidate some of the specific processes through which neighborhood social connectedness influences adolescent civic development, it is useful to integrate the *norms and collective efficacy* model (Leventhal & Brooks-Gunn, 2000; Leventhal et al., 2009) with developmental theories relevant for the understanding of adolescent civic engagement.

In particular, the social cognitive theory (Bandura, 1977), the theory of role taking (Selman, 1980, 2003), the psychosocial theory (Erikson, 1968) and the theory of socio-political development (Watts, Griffith, & Abdul-Adil, 1999; Watts, Williams, & Jagers, 2003) allow to identify developmental processes explaining how social contexts (such as the neighborhood and non-parental adults' networks) can influence adolescent civic development. Moreover, further mechanisms have been suggested in studies (e.g., Flanagan, Cumsille, et al., 2007) examining the association between neighborhood connectedness and adolescent civic development.

In particular, some of the processes included in these models have been selected in order to understand how some neighborhood features can promote adolescent civic engagement:

- *Observational learning* (Bandura, 1986): adolescents learn civic attitudes, skills and behaviors through interactions with other people in the neighborhood, or observations of others' behavior and the consequences associated with their actions. During social interactions adolescents have the opportunity to create and change their cognitive structures referring to societal functioning and their role in society, because they are exposed to new visions and opinions.
- *Perspective taking* (Selman, 1980, 2003): the ability to understand a generalized perspective characterizing a group of people is promoted by social interactions with people from different backgrounds (as often occurs in the neighborhood context) and it is critical to understand which values and behaviors are encouraged in one's own neighborhood.
- *Formation of civic identity* (Erikson, 1968): social relationships are fundamental in influencing the process of identity formation, during which adolescents develop a worldview and a personal set of values and ideas about their role in society.
- *Reflection on civic issues* (Watts et al., 1999, 2003): all the situations encouraging reflection on civic issues, such as social interactions with adults in the local community, have the potential to foster civic engagement, because youths can become aware of social inequalities and develop their motivation to work for changing asymmetries in society.
- *Giving back to one's own community*: people having strong social ties in the local community tend to develop a strong emotional attachment to the neighborhood (Bonaiuto, Aiello, Perugini, Bonnes, & Ercolani, 1999; Morrow, 2000; Whitlock, 2007), which represents an important precursor of the development of civic attitudes; indeed, neighborhood attachment nurtures adolescents' motivation to "give back" to the community the support that they received (Flanagan, Cumsille, et al., 2007).
- *Neighborhood attachment and participation*: place attachment refers to the deep emotional bond that individuals develop toward specific places over time via repeated positive interactions (Altman & Low, 1992). Within environmental and

community psychology, the feeling of attachment toward the local community has been linked to civic participation, pointing out that one's emotional relationship to the neighborhood can inspire civic action, because people are motivated to protect and improve places that are meaningful to them; thus, place attachment can help in understanding how neighborhood spaces can motivate residents to act collectively to preserve their community and participate in local planning (Brown, Perkins, & Brown, 2003; Da Silva et al., 2004; Guardia & Pol, 2002; Lewicka, 2005; Manzo & Perkins, 2006; Scannell & Gifford, 2010; Uzzell, Pol, & Badenas, 2002).

- *Concrete facilitation for civic actions*: having many personal ties with people in the neighborhood may foster adolescents' confidence in their abilities to actively contribute to the common good, by making it easier, for instance, to identify key people in the local community, or to get involved in civic actions.

Finally, theoretical models and empirical evidence suggest pathways through which different components of civic engagement may be related. First of all, youth may first develop a sense of civic responsibility to their local community, and then generalize civic attitudes to the wider society (Flanagan, Cumsille, et al., 2007; Greenberg, 2001; Selman, 1980, 2003). Moreover, civic attitudes (responsibility) and competencies may be precursors of civic behaviors: although participation can also reinforce attitudes and competencies, a set of beliefs supporting the importance of contributing to the common good is thought to be critical for adolescents' decision to be actively involved in civic action (Erikson, 1968; Selman, 1980, 2003; Watts et al., 1999, 2003).

The integration between these theoretical models fits in the wider theoretical framework of social capital (Putnam, 2000). Given the complexity in the construct definition and measure, and its multidisciplinary nature (e.g., Onyx & Bullen, 2000; Vieno & Santinello, 2006), the field of social capital in the present work is considered as a theoretical benchmark that will guide hypothesis development and interpretation of data. Instead of considering social capital as a neighborhood feature to be defined and measured, we will use it as a theoretical basis to understand how the social processes in the neighborhood can promote individual resources (e.g., civic engagement), generating a "cycle of resources" (Putnam, 2000) that come back to the community.

The aim of the current work is to develop and evaluate an integrative model linking neighborhood social connectedness (neighborhood intergenerational closure, neighborhood trust and reciprocity, personal relationships with neighbors and neighborhood friends) and different components of youth civic engagement (local and global civic responsibility, civic competencies, civic behaviors), developed combining the potential pathways of influence previously discussed. In particular, the model takes into account the mediating effects of attachment to the neighborhood and non-parental adults' network.

1.3. The proposed theoretical model

Consistent with the theoretical backgrounds reviewed, in the proposed model two main pathways have been proposed (in Fig. 1 a simplified version of the theoretical model is presented, while specific pathways are depicted in Fig. 2).

According to the first pathway, living in a neighborhood characterized by high levels of social cohesion, where there are cohesive relationships between adults and young people (*intergenerational closure*) and where people look out for each other (*trust and reciprocity*), adolescents may be socialized to civic values, developing

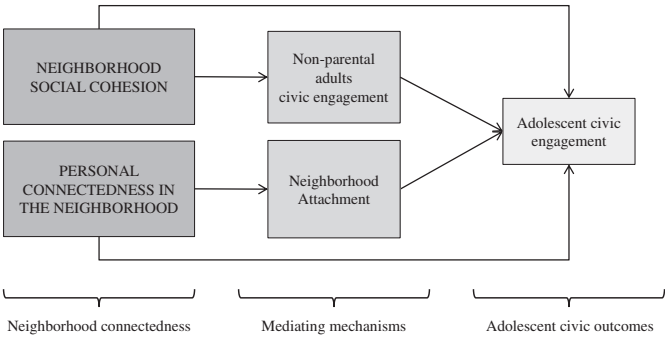

Fig. 1. Conceptual model predicting adolescent civic engagement from neighborhood social connectedness.

the belief that everyone has the responsibility to work for the local community (*local civic responsibility*) (Leventhal & Brooks-Gunn, 2000; Selman, 1980; Watts et al., 1999, 2003).

Moreover, the model posits that the influence of neighborhood connectedness is transmitted, in part, by a more proximal context: the non-parental adults' network. More specifically, in neighborhoods with higher levels of social cohesion (*intergenerational closure*, *trust* and *reciprocity*), for adolescents it is more likely to come into contact with civically engaged adults, that is, positive role models (Buchanan & Bowen, 2008; Chen, Greenberger, Farruggia, Bush, & Dong, 2003; Moore, 2003; Paxton, Valois, Huebner, & Drane, 2006) who may foster youth civic responsibility (Bandura, 1986; Erikson, 1968; Hart & Atkins, 2002; Pancer, Pratt, Hunsberger, & Alisat, 2007; Watts et al., 1999, 2003; Zaff et al., 2008).

In the second pathway proposed in the model we hypothesized that when adolescents have strong social relationships with peers in the local community (*neighborhood friends*) and with other neighbors (*social relationships with neighbors*), they also develop a strong emotional bond to the neighborhood (Morrow, 2000; Whitlock, 2007). Neighborhood attachment, in turn, is thought to foster adolescent motivation to give back to their community and to work for making it a better place (Brown et al., 2003; Flanagan, Cumsille, et al., 2007). Furthermore, according to the model, having many personal ties with people in the neighborhood may increase adolescents' confidence in their abilities to actively participate in the life of the community, by making it easier to get involved in civic actions.

Regarding the interconnections among different components of civic engagement, the proposed model posits that adolescent civic responsibility toward the local community may be an antecedent of civic responsibility related to societal issues, (*global civic responsibility*) (Flanagan, Cumsille, et al., 2007; Selman, 1980, 2003) and that civic attitudes (*local and global civic responsibility*) and competencies are precursors of civic behaviors (Erikson, 1968; Selman, 1980, 2003; Watts et al., 1999, 2003).

2. Method

2.1. Sampling and participants

In order to obtain a representative sample of adolescents residing in the Padova Municipality, participants were randomly selected from the city register office. More specifically, a random sample of 800 young people was drawn from the complete list of 11-, 13- and 15-year-olds residing in Padova, employing a stratified sampling method with proportional allocation of the strata. The sample was stratified for: neighborhood, age, gender, and

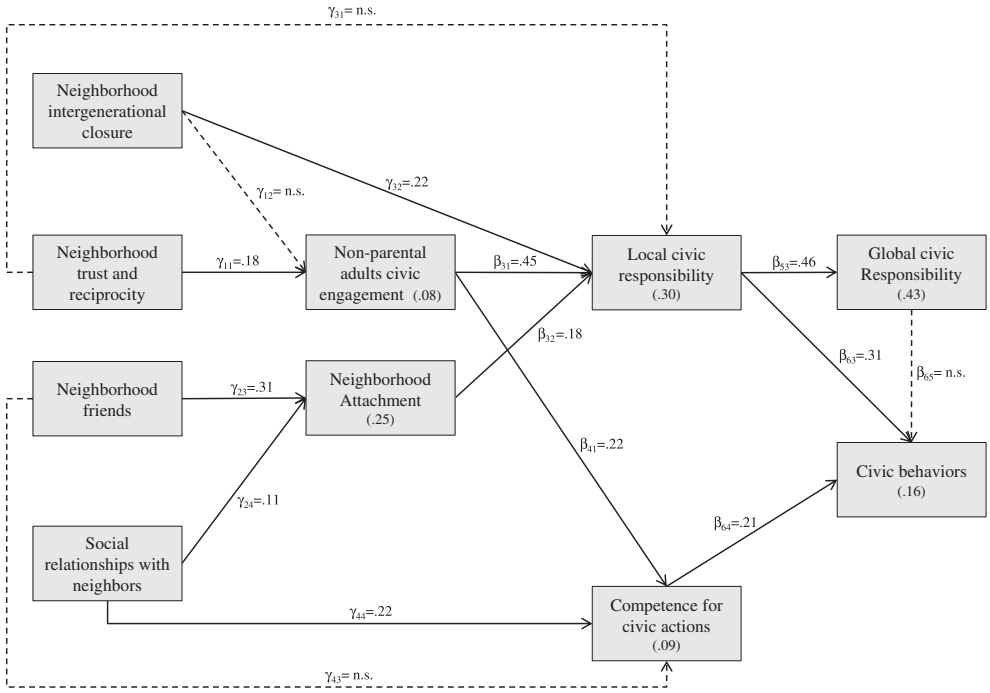

Fig. 2. Path coefficients for the proposed model predicting adolescent civic engagement from neighborhood social connectedness.

immigrant status. This sampling method allows the selection of a sample of participants analogous to the population in terms of the stratification variables.

Participants included in the study were 403 adolescents (47.9% male) from 38 different neighborhoods of a mid-sized Italian city (Padova). The response rate was 59.5%, excluding families who relocated (4.5%) or who were not found (10.9%). The participants' age ranged from 11 to 15 years old, with a mean of 13.6 years old (SD = 1.64). Probably because of potential difficulties in filling out the questionnaire, although the sample was stratified by immigrant status, almost all participants were born in Italy (95.3%), with small percentages from Eastern Europe (2.7%) and other countries (2.0%).

With regard to family structure, 89.6% of the participants came from a two-parent family (with parents married or living together). Finally, the socio-economic status of participants, as estimated by their father's level of education, was quite diverse: .8% had completed only elementary school, 17.6% had completed middle school, 8.8% had completed vocational studies, 36.3% had obtained a high school diploma and 36.5% had at least a bachelor's degree.

Since some of the adolescents had missing values in the variables of interest, the theoretical models were tested on a reduced sample; adolescents who reported not having adults other than their parents to whom ask support and advice ($N = 40$) were also excluded; thus, the model was tested on a final sample of 347 participants. The sub-sample excluded from the analysis does not differ significantly from the final sample in terms of gender distribution (χ^2 (1) = .06, n.s.) or mean age (F (1,397) = .79, n.s.).

2.2. Procedures

The present data came from a study conducted in the city of Padova (in the Northeast of Italy), and was approved by the institutional review committee at University of Padova. In order to have access to the city register office for research purposes, thus overcoming privacy issues, the approval of the Padova municipality was also requested.

The sampled families received the questionnaires at home, with a letter explaining the aims of the study and a written consent form for parents to allow their children to participate in the study. After a period ranging from three to five days, the families were contacted by a member of the research team (on the phone or directly at home) to briefly discuss the objectives of the study. Consent was requested from the family and an appointment was made to collect the completed questionnaires, which were completed at home. Participants were instructed not to complete questionnaire sections that did not seem clear but rather to wait for explanations from researchers on the day of collection.

When the telephone number was not available (in almost in the 50% of cases), families were contacted at home. When the family was not found, the researchers made from three to five attempts in different hours of the day; after these attempts, if families were not found, they were excluded from the sample.

The distribution of the questionnaires was gradual; data were collected during a 4-month period (October 2009–January 2010). Participants who took part in the study received a small reward.

2.3. Measures

The following measures were employed for measuring neighborhood social connectedness, mediating variables and adolescent civic engagement:

Neighborhood intergenerational closure. Intergenerational closure in the neighborhood was measured using Sampson, Morenoff, and Earls scale (1999), which comprises 5 items asking participants about the level of connectedness between young people and adults in the local community (e.g., "There are adults in this neighborhood that young people can look up to"; "Parents in this neighborhood know their children's friends"). Participants responded on a Likert scale ranging from (1) "completely disagree"

to (5) "completely agree". The Cronbach's alpha for the scale was .78. Averaging participants' responses composed a single measure of intergenerational closure.

Neighborhood trust and reciprocity. The "social support and emotional connection" subscale of the Sense of Community Scale for Adolescents (SoC-A; Cicognani, Albanesi, & Zani, 2006) was used to measure the level of perceived trust and reciprocity in the neighborhood. Since the sub-scale does not include item on perceived trust among residents, two item drawn from the Health Behaviors in School-aged Children study were added (Boyce, Davies, Gallupe, & Shelley, 2008). The final scale was composed of 8 items, such as: "You can trust people around here" and "Many people in this neighborhood are willing to help each other". Items are responded to on a 5-point scale ranging from (1) "completely disagree" to (5) "completely agree". The Cronbach's alpha for the scale was .86, and averaging participants' responses to the items composed a single measure of neighborhood trust and reciprocity.

Neighborhood friends. Neighborhood-based friendship was measured using the "emotional connection with peers" subscale of the SoC-A (Cicognani et al., 2006), comprising 6 items concerning the quality of adolescent relationships with peers in their local community. "Many of my real friends are young people that live in this neighborhood" and "I like to stay with other adolescents that live in this neighborhood" are sample items. Internal consistency of the scale was good (alpha = .91); responses ranged from (1) "completely disagree" to (5) "completely agree", and were averaged for the measure of neighborhood-based friendship.

Social relationships with neighbors. The level of personal knowledge and interaction with people in the neighborhood was measured using a 5-item scale obtained by combining items employed in two different studies (Widome, Sieving, Harpin, & Hearst, 2008; Ziersch, Baum, MacDougall, & Putland, 2005). "I regularly visit my neighbors" and "I know the names of a lot of people in my neighborhood" were sample items. Item responses range from (1) "completely disagree" to (5) "completely agree." The Cronbach's alpha for the scale was .82, and averaging participants' responses to the items created a single measure of adolescent social relationships with neighbors.

Non-parental adults' civic engagement. An adapted version of the Parents Civic Engagement scale (Flanagan, Syvertsen, & Stout, 2007) was used to measure the perceived level of civic engagement of the adolescent non-parental adults' network. The 6-item scale refers to the level of perceived civic responsibility and participation characterizing the adults to whom adolescents turn when they need support or advice (excluding their parents). Sample items are: "Adults that I can turn to are active in the life of the community" and "Adults that I can turn to think that everyone has a responsibility to work to make the world a better place". The Cronbach's alpha for the scale was .93; responses ranged from (1) "not at all" to (4) "a lot", and were averaged for the measure of non-parental adults' civic engagement.

Neighborhood Attachment. The Perceived Residential Environment Quality (PREQ) Neighborhood Attachment sub-scale (Bonaiuto et al., 1999; Bonaiuto, Fornara, Aiello, & Bonnes, 2002; Bonaiuto, Fornara, & Bonnes, 2003, 2006) was used to evaluate the emotional bond felt by adolescents to the neighborhood; the scale is composed of five items, such as: "It would be difficult for me to move from this place", "I feel part of this place". Considering that this scale was developed with adult populations, two additional items previously tested with adolescents were added, drawn from the "sense of belonging" subscale of the SoC-A (Cicognani et al., 2006) ("I feel like I belong to this neighborhood" and "I like to notice that when some local events are organized, many people participate and get involved"). The final scale comprises 6 items, with a Cronbach's alpha of .75. Participants responded on a Likert scale ranging from (1) "completely disagree" to (5) "completely agree", and a single measure of neighborhood attachment was created by averaging participants' responses.

Local civic responsibility. A scale to measure the adolescent level of civic responsibility was created by combining items of the Participatory Citizen and Political efficacy scales (Flanagan, Syvertsen, et al., 2007), and adding explicit reference to the neighborhood in the items. Sample items of the 6-item scale are: "I think it's important to work for improving conditions in my neighborhood" and "If there were more opportunities to participate in improving the neighborhood, I would do so". The Likert scale for responses ranges from (1) "completely disagree" to (5) "completely agree". Internal consistency of the scale was good (alpha = .88), and participants' responses were averaged for obtaining a single measure of adolescent civic responsibility toward their neighborhood (local).

Global civic responsibility. The sense of civic responsibility toward societal issues was measured by combining items from the Justice Oriented Citizen and the Participatory Citizen scale (Flanagan, Syvertsen, et al., 2007). The scale asks participants the degree to which they consider it to be important to work toward solving societal problems or improving the well-being of society as a whole (e.g., "I think it is important to protest when something in society needs changing", "There are things which people can do as individuals to help solve the world's problems"). The scale is composed of 9 items (alpha = .74), with a Likert scale for responses varying from (1) "completely disagree" to (5) "completely agree". A single measure of global civic responsibility was obtained by averaging participants' responses to the different items.

Competence for civic actions. The Competence for Civic Action scale (Flanagan, Syvertsen, et al., 2007) was used to measure adolescents' perceived skills and abilities related to the civic domain. The 5-item scale asks participants about the degree to which they feel capable of performing different actions aimed at solving community issues, such as organizing a public meeting or identifying individuals or groups who could help them with these problems. The Cronbach's alpha for the scale was .82. Participants responded on a Likert scale ranging from (1) "I definitely can't" to (5) "I definitely can", and a single measure of the perceived competence for civic action was composed by averaging participants' responses.

Civic behaviors. Considered that participants' age ranged from 11 to 15 years, items measuring relevant behaviors for the civic domain, but also appropriate for the developmental stage of participants, were drawn from the literature. In particular, items from the Media Consumption scale (Flanagan, Syvertsen, et al., 2007) and from the work of Albanesi et al. (2007) were combined in a 4-item scale. Participants were asked to report the frequency with which they performed different behaviors during the 12 months before the study, such as keeping up-to-date about events occurring locally or around the world, volunteering or working for the local community (for example, participating in the organization of a local party). The Cronbach's reliability coefficient for the scale was .63. Participants indicated on a 5-point scale the frequency (from "never" to "everyday") of each civic behavior, and a single measure was composed through the average of responses.

2.4. Plan of analysis

The pattern of relationships specified by our theoretical model was examined through path analysis, using the R (R Development Core Team, 2012) Package lavaan (Rosseel, 2012) and utilizing a single observed score for each construct tested in the model. Path coefficients were estimated using the maximum likelihood method. To evaluate the goodness of the model we considered the

R^2 of each endogenous variable and the total coefficient of determination (CD; Bollen, 1989; Jöreskog & Sörbom, 1996), defined as:

$$1 - \frac{\left|\widehat{\Psi}\right|}{\left|\widehat{\Sigma}_{yy}\right|}$$

where $|\widehat{\Psi}|$ is the determinant of the covariance matrix among the errors and $|\widehat{\Sigma}_{yy}|$ is the determinant of the covariance matrix among endogenous variables (Bollen, 1989).

Finally, we ran an analysis with bootstrap replication (Bollen & Stine, 1993), which allows the measurement of the reliability of a computed generic *T* statistic (Efron & Tibshirani, 1993). Unlike the Monte Carlo method, where data are generated based on a theoretical model, the bootstrap utilizes the sample of data, as it was the population. More specifically, the method consists in extracting from the observed data a number B of samples with repetition. In each one of the sample extracted the *T* statistics are computed. In this way it is possible to obtain a sample distribution of *T* and to compute, for example, the *T* standard error, a confidence interval and the Bias (the deviation between the *T* value obtained in the sample and the mean of the distribution obtained with the bootstrap).

The sampling has been replicated 1000 times, and for each replication the parameters and the R^2 of the endogenous variables and of the whole model (CD) have been estimated.

3. Results

3.1. Descriptive statistics

Descriptive statistics and bivariate correlations among study variables, for the total sample and separated by gender, are shown in Table 1. Boys reported a greater tendency to have friends in their neighborhood of residence, although the differences were modest.

All bivariate correlations among study variables were in the expected direction. In particular, there was a strong positive correlation among the variables measuring neighborhood social connectedness: intergenerational closure, trust and reciprocity, neighborhood friends and social relationships with neighbors (with *r* ranging from .43 to .59). Moreover, there was a positive correlation between the emotional bond that adolescents develop toward the neighborhood (neighborhood attachment) and the measures of neighborhood connectedness (with *r* ranging from .30 to .49).

A positive correlation among the variables measuring the different components of civic engagement (local civic responsibility, global civic responsibility, competence for civic action, civic behaviors) was also found. More specifically, there was a strong positive correlation between the two measures of civic attitudes (local and global civic responsibility, $r = .66$); there was also a positive association among different aspects of adolescent civic engagement (civic responsibility, competencies and behaviors), although more modest in magnitude (with *r* ranging from .29 to .37).

3.2. Testing the theoretical model

Multivariate analyses began with testing the proposed model. Fig. 2 represents the test of the model with estimated standardized parameters. The squared multiple correlations for the structural equations indicate that the model accounts for a significant portion of the variance in study variables, that is: 8% of the variance in non-parental adults' civic engagement, 25% in neighborhood attachment, 30% in local civic responsibility, 43% in global civic responsibility, 9% in competence for civic action and 16% in civic behaviors. The total coefficient of determination (CD) was .37.

In the model tested, there were three predicted coefficients that were non-significant: the link between intergenerational closure and adults' civic engagement, the link between trust and reciprocity and adolescent civic responsibility (local) and the path linking neighborhood friends to adolescent competence for civic action.

Along with the direct paths shown in Fig. 2, there are some significant indirect relationships. With respect to the exogenous variables, neighborhood trust and reciprocity has indirect effects on local civic responsibility (.08) and competence for civic action (.04) through non-parental adults' civic engagement; moreover, there are indirect effects of trust and reciprocity on global civic responsibility (.04) and civic behaviors (.04).

Intergenerational closure also has indirect effects on global civic responsibility (.12) and civic behaviors (.09), through its effect on local civic responsibility. An indirect effect was also found between neighborhood friends and local civic responsibility (through neighborhood attachment, .06), global civic responsibility (.03) and civic behaviors (.02), through neighborhood attachment and local civic responsibility. Similarly, social relationships with neighbors have indirect effects on local civic responsibility (through neighborhood attachment, .02), global civic responsibility (.01) and civic behaviors (.05).

In Table 2 the results of the bootstrap replications are presented. In the first column of the tables the estimated values are shown, in

Table 1
Means, standard deviations, and correlations among study variables and *t*-tests for adolescent gender.

	1	2	3	4	5	6	7	8	9	10	*M* (SD)
1. Intergenerational closure	–	.59***	.51***	.53***	.24***	.39***	.36***	.25***	.22***	.29***	3.29 (.72)
2. Trust and reciprocity		–	.43***	.43***	.26***	.49***	.31***	.28***	.25***	.22***	3.09 (.64)
3. Neighborhood friends			–	.50***	.21***	.44***	.28***	.15**	.19***	.28***	3.21 (.98)
4. Personal relationships with neighbors				–	.26***	.30***	.27***	.18**	.26***	.31***	3.21 (.87)
5. Non-parental adults' c.e.					–	.17**	.44***	.46***	.22***	.38***	2.56 (.62)
6. Neighborhood attachment						–	.30***	.23***	.13**	.18***	3.76 (.72)
7. Local civic responsibility							–	.66***	.30***	.37***	3.52 (.75)
8. Global civic responsibility								–	.32***	.29***	3.80 (.51)
9. Competence for c. action									–	.31***	2.89 (.85)
10. Civic behaviors										–	2.56 (.78)
Males	3.32 (.76)	3.10 (.67)	3.32 (.98)	3.21 (.89)	2.51 (.65)	3.78 (.72)	3.52 (.79)	3.76 (.54)	2.89 (.89)	2.59 (.83)	
Females	3.27 (.70)	3.07 (.62)	3.11 (.98)	3.20 (.86)	2.60 (.58)	3.75 (.72)	3.53 (.72)	3.84 (.49)	2.89 (.81)	2.54 (.73)	
t-test DF	.58 (401)	.39 (400)	2.12* (398)	.19 (400)	−1.36 (361)	.33 (400)	−.19 (395)	−1.59 (395)	.05 (390)	.72 (389)	

*$p < .05$, **$p < .01$, ***$p < .001$.

Table 2
Estimated parameters and R^2, standard errors, biases and confidence intervals based on 1000 bootstrap replications.

	Estimated	SE	Bias	CI 95%
γ_{11}	.18	.06	.000	.06–.31
γ_{12}	.10	.05	−.001	−.01 to .20
γ_{32}	.22	.06	.000	.11–.33
γ_{23}	.30	.04	.001	.23–.39
γ_{41}	.22	.07	−.001	.08–.35
γ_{24}	.11	.05	−.000	.02–.20
γ_{44}	.22	.06	−.001	.10–.32
β_{31}	.45	.05	−.001	.36–.54
β_{41}	.22	.07	−.001	.08–.35
β_{32}	.18	.06	.000	.07–.29
β_{53}	.46	.03	.000	.41–.52
β_{63}	.31	.08	.000	.17–.46
β_{64}	.21	.05	.000	.11–.30
β_{65}	.02	.11	.000	−.18 to .23
R^2_{y1}	.08	.03	.005	.03–.14
R^2_{y2}	.25	.04	.004	.18–.33
R^2_{y3}	.30	.05	.006	.21–.40
R^2_{y4}	.09	.03	.005	.03–.15
R^2_{y5}	.43	.04	.000	.35–.51
R^2_{y6}	.16	.03	.007	.10–.23
TCD	.37	.04	.010	.29–.45

the second one the standard errors, in third one the biases, computed as the deviation between the mean values obtained with bootstrap replications and the values computed in the original sample. In the fourth column, the 95% confidence intervals computed with the "simple bias-corrected" method (Campbell & Torgerson, 1999) are shown. The analyses conducted using bootstrap methodology support the goodness of the model.

4. Discussion

The theoretical model proposed in the current study, in which neighborhood social connectedness is associated with adolescent civic engagement, was partially validated. Our primary purpose was to evaluate an integrative model linking neighborhood social connectedness (neighborhood intergenerational closure, neighborhood trust and reciprocity, neighborhood friends and social relationships with neighbors) and different components of youth civic engagement (local and global civic responsibility, civic competencies, civic behaviors), evaluating the mediating effects of attachment to the neighborhood and non-parental adults' network. In developing this model, we focused on the wellness-promotive effect that neighborhood context can have in fostering youth civic engagement, trying to elucidate some of the pathways responsible for this association.

To date, the study of contexts where the structural disadvantage is not highly concentrated (such as the Italian context), and the associations between neighborhood resources and outcomes of positive development, have received little empirical attention, if compared to studies examining the detrimental effects of structural disadvantage (Dallago et al., 2009; Romano, Tremblay, Boulerice, & Swisher, 2005; Vieno, Nation, Perkins, Pastore, & Santinello, 2010). The current study aimed to expand the existing literature on neighborhood effects and adolescent civic engagement by simultaneously analyzing the role of neighborhood social cohesion (intergenerational closure; trust and reciprocity) and youth personal connectedness in the local community (neighborhood friends; social relationships with neighbors) in nurturing or hindering adolescent civic engagement.

As hypothesized in the model, in neighborhoods where there are strong ties between adults and youth (intergenerational closure), adolescents report a higher sense of civic responsibility toward their local community (local civic responsibility), and believe that each resident should contribute to the well-being of the neighborhood. This result is consistent with the assumptions of the *norms and collective efficacy* model (Leventhal & Brooks-Gunn, 2000), when applied to the development of adolescent civic engagement: when adolescents perceive that in their neighborhood there are cohesive relationships between youth and adults, who are available to support them and represent positive role models, they can develop civic attitudes through a process of collective socialization (Jencks & Mayer, 1990). The positive association between neighborhood intergenerational closure and adolescents' sense of responsibility toward their community can be explained by processes identified in traditional developmental theories: in neighborhoods where adults are available to look after youths, adolescents have the opportunities to interact with people having more experience and knowledge. Thanks to these social interactions, adolescents may have increased opportunities, for instance, to discuss issues regarding their local community (Watts et al., 1999, 2003), to develop perspective taking abilities which allow them to understand which values and behaviors are encouraged in their neighborhood (Selman, 1980, 2003) and to form a personal set of values underlining the importance of contributing to the well-being of the community (civic identity; Erikson, 1968).

Contrary to what was posited in the model, the levels of intergenerational closure in the neighborhood were not associated with the adolescents' tendency to create relationships with civically engaged adults, as hypothesized based on previous studies (Buchanan & Bowen, 2008; Chen et al., 2003; Moore, 2003; Paxton et al., 2006). It is possible that cohesive ties between youth and adults within the neighborhood are not sufficient to offer adolescents more opportunities to meet civically engaged adults; these opportunities could be promoted only by neighborhood ties based on mutual help and reciprocal relationships among neighbors. Indeed, the mediating effect of the non-parental adults' network was confirmed in relation to trust and reciprocity: the more adolescents report that in their local community people trust and care for each other, the higher is the level of civic responsibility that they perceive among their adults' networks. Consistent to the norms and collective efficacy assumptions (Leventhal & Brooks-Gunn, 2000), in neighborhoods with high levels of trust and reciprocity, adolescents could be more likely to meet civically responsible adults; this, in turn, may positively influence their civic development, because they can learn civic attitudes through interactions with or observation of civically engaged people (Bandura, 1986), reflecting on civic issues (Watts et al., 1999, 2003), and developing perspective taking and a civic identity (Erikson, 1968; Selman, 1980, 2003). Thus, according to our results, and consistently with the norms and collective efficacy model (Leventhal & Brooks-Gunn, 2000), the influence of neighborhood social connectedness on adolescent development is transmitted by a more proximal context: the non-parental adults' network. Contrary to our hypotheses, there was not a direct effect of trust and reciprocity on adolescent civic responsibility (local); its effect was fully mediated by non-parental adults' civic engagement.

Besides the pathway linking neighborhood cohesion to adolescent civic responsibility, the proposed theoretical model included a link between adolescent personal connectedness in the neighborhood and the development of civic attitudes toward their local community. Consistently with what was hypothesized, our results showed that adolescents with strong ties in the local community (with peers and with other neighbors) tend to develop a stronger emotional bond to the neighborhood (Bonaiuto et al., 1999; Low & Altman, 1992; Morrow, 2000; Whitlock, 2007). When adolescents have most of their friends in their neighborhood of residence, and

they know and interact with many people in the local community, they also develop a sense of attachment and belonging to the neighborhood. A stronger emotional bond to the neighborhood, in turn, was positively associated with a higher sense of responsibility toward their local community; this result is consistent with environmental and community psychology studies (Brown et al., 2003; Da Silva et al., 2004; Lewicka, 2005; Manzo & Perkins, 2006; Scannell & Gifford, 2010; Vaske & Kobrin, 2001), showing that place attachment predicts civic responsibility, participation, and environmentally responsible behaviors. Indeed, individuals' feelings toward the local community impact their behaviors toward such places, thus influencing whether and how they are willing to participate in improving the neighborhood (Manzo & Perkins, 2006). Moreover, adolescents' place attachment may motivate them to give back to their community the support that they received (Flanagan, Cumsille, et al., 2007). Although there is empirical evidence throwing doubt on the direct positive association between place attachment and civic participation (e.g., Bonaiuto, Carrus, Martorella, & Bonnes, 2002), our findings suggest that during adolescence, when the neighborhood context is particularly relevant, the feeling of attachment toward the neighborhood may promote the sense of responsibility toward the local community. Another path proposed in our theoretical model, that was partly confirmed, is the direct association between adolescent personal connectedness in the neighborhood (neighborhood friends, social relationships with neighbors) and perceived competence for civic action. While having friends in one's own neighborhood was not directly associated to civic competencies, a positive association was found between the level of social connectedness with neighbors and the perception of being competent in the civic domain. Indeed, having many personal ties with neighbors may nurture adolescent confidence in their abilities to actively contribute to the common good, for instance by identifying key people in the local community, or by gathering a group of people to discuss community issues. It is possible that adolescents, in order to feel competent in the civic domain, need to know many people in their neighborhood, possibly of different ages and backgrounds; on the contrary, having most of their friends living in the same neighborhood may not be enough to foster adolescent confidence in their abilities to actively contribute to the common good.

Finally, the evaluation of the proposed model confirmed the hypothesized pathways linking different components of adolescent civic engagement. First of all, a positive association between the sense of responsibility toward the local community and civic attitudes to societal issues was found. This result lends support to the statement that civic attitudes may develop gradually, first in relation to the small dimensions of the local community, which may represent a first microcosm of public life, and then be generalized to the larger society (Flanagan, Cumsille, et al., 2007; Selman, 1980, 2003). Furthermore, according to our result, local civic responsibility and perceived competence for civic action may represent precursors of civic behaviors: the more adolescents have a set of beliefs valuing civic engagement, and consider themselves capable of contributing to the common good, the more likely is their decision to actively take part in civic actions (Erikson, 1968; Selman, 1980, 2003; Watts et al., 1999, 2003).

The association between attitudes and behaviors was not confirmed for global civic responsibility. This result may be explained by referring to our operationalization of civic behaviors: since the participants were early and middle adolescents, and formal civic participation (e.g., involvement in political organizations) is not common during these developmental stages, we selected behaviors feasible for them, such as organizing a party in the neighborhood and volunteering in the community. Thus, it is plausible that the sense of civic responsibility toward societal issues, such as environment and human rights, is not associated with civic behaviors mostly circumscribed in the local community.

Overall, the theoretical model explains a significant portion of variance in adolescent civic engagement, that is: 30% of the variance in local civic responsibility, 43% in global civic responsibility, 9% in competence for civic action, and 16% in civic behaviors. This findings suggest that neighborhood social features can be critical factors to consider in understanding adolescent positive development, along with the detrimental effects of neighborhood disadvantage (e.g., Evans, 2004; Kohen, Leventhal, Dahinten, & McIntosh, 2008). In line with the study of Romano et al. (2005), who showed that variation across neighborhoods in prosocial behavior was twice as large as the variation in violent behavior, our findings suggest that future research should also investigate the wellness-promotive effects of neighborhood features, thus allowing to theorize additional pathways of influence that might encourage positive development (Lenzi et al., 2012).

5. Limitations and conclusions

The main limitation of the current study lies in the cross-sectional nature of our data, which does not allow us to interpret the direction of effects and the mediation relations in a causal sense. Although the proposed model has been developed based on theories and empirical evidence, it is possible that civically engaged adolescents actively select their networks of adult acquaintances, become more attached to the neighborhood and, in general, perceive more cohesion among neighbors and have more opportunities to form social ties within the local community. Research that follows young people over the course of early and middle adolescence is needed to determine the degree to which the influence of contextual factors have a significant impact on later civic engagement.

Another limitation of the current study consists in the use of a unique source of information, that is, an adolescent self-report questionnaire. This approach is vulnerable to same-source bias or the possibility that self-report information for both the outcomes and the neighborhood features may generate a spurious association between the two. Indeed, the measurement errors in both variables may be correlated; alternatively, the outcomes may affect the perception or report of neighborhood social connectedness (Diez-Roux, 2007). For instance, adolescents who are highly engaged in civic activities may be more likely than those who are not engaged to report cohesive relationships in the neighborhood, irrespectively of the actual characteristics of the local community.

Despite these limitations, the results of the present study hold promise for future research in the field of neighborhood research and civic development. In particular, our findings give support to the idea that some of the processes occurring within the neighborhood may be a microcosm of public life and represent the functioning of the civil society (Da Silva et al., 2004; Duke et al., 2009; Flanagan, Cumsille, et al., 2007; Kahne & Sporte, 2008; Kegler et al., 2005). In the local community, civic processes may be approachable and easy to understand for adolescents, so that they can learn how to contribute to the common good, and developing a motivation to improve it by creating social ties with peers and adults. Moreover, our findings give support to a critical assumption of Putnam's (2000) social capital theory, according to which the social capital of a community can regenerate itself through its positive effects on individuals: if the relationships of trust and reciprocity between residents within a neighborhood favor the development of civic values and behaviors in adolescents, individuals will indeed be able to contribute to the well-being of the local community and wider society. The wellness-promotive effect

of neighborhood context in terms of increased civic competencies and values in adolescents becomes a resource to be employed for the common good, thus increasing the levels of social capital within the neighborhood and the larger society. For this reason, the field of research examining the association between neighborhood characteristics and civic development in adolescence, could constitute empirical support for Putnam's idea of a "cycle of resources", which can be transmitted from the local community to individuals, and "coming" back to the community (through civic engagement) and wider society. Moreover, our findings are relevant not only for neighborhood research, but they give empirical support to some processes identified in the field of organizational psychology. In particular, civic engagement is somehow parallel to the concept of organizational citizenship behaviors (OCB; Organ, 1988), which represent all the discretionary behaviors that benefit an organization and their members by improving the social climate of the organization. Indeed, research in this field has shown that the level of social connectedness between members within an organization, especially in terms of perceived trust, promotes organizational citizenship behaviors (Singh & Srivastava, 2009). This finding underlines how civic behaviors seem to be promoted by similar characteristics and interpersonal processes (social connectedness and trust) in the local community as well as in the organizational context, thus pointing out how the study of civic engagement can be informed by theoretical models coming from different fields of psychology.

Future ecologically-based investigations, with a focus on the promotion of civic engagement, are needed, not only to reach a better understanding of the psychological mechanisms through which social contexts operate, but also to plan more effective promotion programs based on this empirical evidence (Durlak et al., 2007). In particular, ecological programs should include the neighborhood among the contexts of interventions, for instance by creating opportunities to get to know and interact with neighbors (such as local events or common spaces), and by giving young people the possibility to get more involved in community life.

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