Virtual Group Dynamics and Social Networks

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Dr. Andrea Guazzini
Department of Education and Psychology
and Centre for the Study of Complex Dynamics (CSDC)
University of Florence

Contacts
e-mail: andrea.guazzini@unifi.it - andrea.guazzini@gmail.com
website: http://virthulab.complexworld.net/

Understanding our online behaviour

Internet prosocial behaviour

Every day hundreds of thousand of people voluntarily help strangers on the net with no expectation of direct reciprocity or reward.

Prosocial behaviour

Voluntary intentional behaviour that results in benefits for another (Eisenberg & Miller, 1987)

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People voluntarily help strangers in many ways on the net, including

- Donating funds to worthy causes through online charitable organizations

- Donating idle computing power from their personal computers (PCs) to help scientists analyze large data files

- Working on projects that create freely-available information products like open source software and encyclopedia articles

- Working on projects organized for socially-worthwhile causes, such as electronically mentoring disadvantaged students or making public domain literature freely available on the web

- Offering support to one another in discussion forums

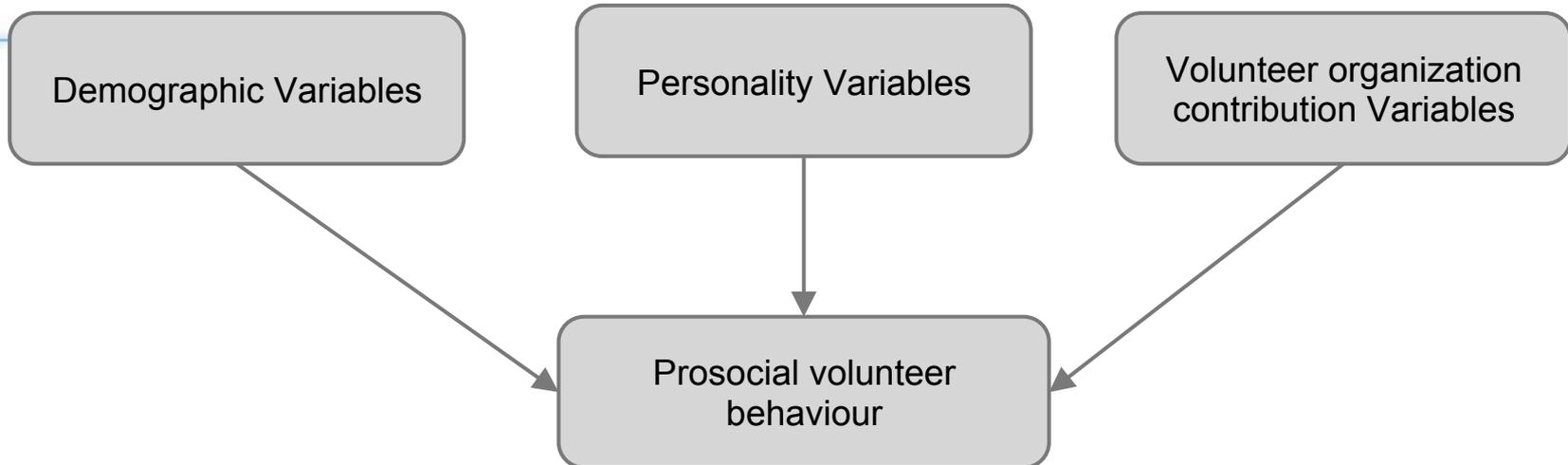Amichai-Hamburger, Y. (2013). *The social net*. Oxford University Press.

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Offline Behaviour

In the offline world prosocial behaviour can be characterized along two dimensions: one is the strength of the social relationship among participants, the other is the degree and type of the context's structural organization.

Demographic Variables	Personality Variables	Volunteer organization contribution Variables

Prosocial volunteer behaviour

(Penner, 2002)

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Attributes of the online context

Technical and social components interact to form the context that support prosocial behavior on the net. Technical components include: hardware, software, data and file structures, and communication systems; social components include: goals, roles, rules and norms.

Four main categories of prosocial contexts are;

1. Support group discussion forums

2. Service projects

3. Open collaborative work projects

4. Citizen science projects

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Despite differences among them all of these contexts share attributes that affect the online prosocial experience (Amichai-Hamburger, 2008)

- Transaction costs are substantially lower than they would be in an offline context

- People can participate at any hour of the day or night from any place with technology and net access

- They can fit their contributions into their own time schedule Volunteers note that convenience and schedule flexibility are two common reasons for choosing to volunteer online (Mukherjee, 2010)

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Internet prosocial behaviour:

Attributes of people and Interaction Processes

Visible status characteristics and attribution

Those who need help:

- In the offline world, **physically attractive people are more likely to be helped than are unattractive people** (Athanasiou & Green, 1973; Byrne, Baskett, & Hodges, 1971; Chaiken, 1979; Dommeyer & Ruggiero, 1996; Harrell, 1978; Mims, Hartnett, & Nay, 1975; Piliavin & Piliavin, 1975; Scott, 1969; West & Brown, 1975; Wilson, 1978)

- **Social similarity affects helping in the offline world** (Eagly & Crwoley, 1986; Emswiller, Deaux & Willits, 1971; Simon, Stürmer, & Steffens, 2000; Simon et. al, 1998; Wellman & Wortley, 1990)

- In the offline world, one of **the impediments to asking for help is the perceived threat to one's public self-image** (Karabenick & Knapp, 1988)

- **Physical invisibility may reduce that perceived threat in the online world**; so, too, may the use of **pseudonyms, screen names, or anonymous postings**.

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Internet prosocial behaviour:

Attributes of people and Interaction Processes

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Those who give help:

- In the offline world, **bystander helping is influenced by the number of other people available to provide help** (Latané & Darley, 1970). The motivation is reduced whenever people see that others are available to give help.

- In the Online world is hard to know how many potential helpers are available. The combination of visible needs for help and unknown numbers of potential helpers may make the felt need to offer help more salient.

- Physical invisibility also reduces the barriers to offering help for people whose age, gender, race, or other visible attributes lead people to discount their contributions in the offline world, regardless of their actual usefulness.

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Attributes of people and Interaction Processes

Decision to make an initial contribution

Some research has investigated what influences people to ask for help online (Davison, Pennebaker, & Dickerson, 2000; Tanis, 2008; Ybarra & Suman, 2006), but there is no research on how people decide to make their first helpful contribution.

- In the offline world, an initial helpful act may serve as a "foot in the door" that will generate subsequente burdensome demands on one's time or emotional energy (Burger, 1999), while **in the online world an initial volunteer contribution may generate less foot-in-the-door pressure**, owing in part to the fact that contributors may not be easily identified and contacted for further assistance.

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Internet prosocial behaviour:

Attributes of people and Interaction Processes

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Some research has investigated what influences people to ask for help online (Davison, Pennebaker, & Dickerson, 2000; Tanis, 2008; Ybarra & Suman, 2006), but there is no research on how people decide to make their first helpful contribution.

- Some contexts allow for anonymous contributions (Kane, 2011), the higly skewed distribution of contributions in many of the online prosocial contexts examined above suggests that **many contributors make one-time only contributions** to a particular context (Kane, 2011; Moon & Sproull, 2008).

- Kane (2011) found that 69% of contributors to a Wikipedia article contributed once or at most twice to a given article.

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Attributes of people and Interaction

Processes

Decision to make an initial contribution

- In the offline world, "volunteer social pressure", or "**a potential volunteer's subjective perceptions of how significant others feel about him/her becoming a volunteer and his/her motivation to comply with theese feelings**" is an important determinant of the initial volunteering decision (Penner, 2002)

- **Social pressure is lower in online volunteering than in offline volunteering** because online volunteering is tipically done in the privacy of one's own computing environment rather than in the physical presence of others.

- **Crowdfunding**, a relatively new type of contribution platform, **provides a contribution context in which social pressure may becoome salient**.

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Attributes of people and Interaction Processes

Motivation to Help

- **Prosocial behavior may be motivated by altruism or egoism** and often by a combination of both (Batson, 1991: Batson & Powell, 2003; Nelson, 1999; Piliavin & Charng, 1990)

- **Altruistic prosocial behavior** is motivate purely by the desire to increase another person's welfare; **egoistic prosocial behavior** is motivate purely by the desire to increase one's own welfare or that of one's group or cause through helping others (Batson, 1998; MacIntyre, 1967)

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Internet prosocial behaviour:

Attributes of people and Interaction Processes

Motivation to Help

- In a number of studies, online help providers have attested to the altruistic motives of **empathy, community interest, and generalized reciprocity**, and egoistic motives of **self-development, reputation enhancement, and fun** (Butler, Sproull, Kiesler, & Kraut, 2007; Lakhani & Von Hippel, 2003; Nov, 2007; Oreg & Nov, 2008; Pope, 2001; Schroer & Hertel, 2009; Wasko & Faraj, 2000)

- In a comparative study of personality attributes across different types of contribution context, reserchers found that **egoistic motives and values were stronger in volunteer software project contributors** and **altruistic motives and values were stronger in Wikipedia contributors**, but volunteers in both contexts reported both types of motives (Oreg & Nov, 2008).

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Attributes of people and Interaction Processes

Motivation to Help

- In electronic contexts **a majority of the help is often provided by a minority of the members** who incur substantial costs of their own time. Eighty percent of English language Wikipedia context is written by 10% of Wikipedians (Priedhorsky et al., 2007)

- Within the online discussion forums for technical support, **11-15% of forum participants provided almost half the answer** within a given time period (Moon & Sproull, 2008)

- About **88% of the code in the Apache server software project was contributed by 15 core developers** (Mockus, Fielding & Herbsleb, 2002)

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Attributes of people and Interaction Processes

Motivation to Help

- **Occasional ad hoc positive feedback as well as intrinsic benefit is probably sufficient to offset the cost of infrequent helper** (Yang & Lai, 2010)

- **The greater the cost of the helping behaviour, the greater the need for personal rewards if the helping is to be sustained** (Field & Johnson, 1993; Omoto & Snyder, 1995)

- In the elctronic context, **participants who report being motivated by community or group interest often provide the most valuable contributions** (Bateman, Gray & Butler, 2011; Blanchard & Markus, 2004; Butler et al., 2007; Constant et al., 1996; Meyer et al., 2002)

- **Team affiliation is positively related to a person's contribution level** even though the contribution is merely idel PC cycles (Nov, Anderson & Arazy, 2010)

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Internet prosocial behaviour:

Attributes of people and Interaction Processes

Social Learning Theory

Social Learning theory suggests that prosocial behaviour is learned (Bandura, 1977; Batson, 1998). In general rewards reinforce helping behaviour, punishments reduce unhelpful or hutful behaviour.

- Within a group context, **social recognition,** not just private reward, **increases prosocial behaviour** (Fisher & Ackerman, 1998)

- **Observational modeling processes with reinforcement will result in learning** over time (Compeau & Higgins, 1995)

  Some contexts use software that records and displays recognition points!!

- **The combination of visible contributions with both ad hoc and systematic feedback** suggests that the minimum criteria for learning how to **engage in prosocial behaviour in the electronic context** are met **(Moon & Sproull, 2008)**

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Attributes of people and Interaction

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Social learning theory also suggest that low cost trials are more effective than high cost ones in the initial stages of learning

- Studies on internet discussion group have reported **a mean message length ranging from 8 to 30 lines** of new text **(Galegher, Sproull & Kiesler, 1995; Wasko & Faraj, 2000)**

- They have also reported **a mean participation time of 10-20 minutes per session** (Boberg et al., 1995; Lakhani & Von Hippel, 2003)

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Internet prosocial behaviour:

Attributes of people and Interaction

Processes

Social Identity Theory

Social Identity Theory and Self-Categorization Theory (Tajfel & Turner, 1986; Turner, Hogg, Oakes, Reicher & Wetherell, 1987) are helpful in understanding why some people exhibit sustained prosocial behaviour.

- **Identification leads to selective social comparisons that emphasizes intergoup difference along dimensions that favor the ingrup** and confer positive distinctiveness on the ingroup when compared to the salient outgroup (Hogg & Abrams, 1988)

- **Categorizing the self and others in terms of groups emphasizes group members' fit with the relevant group prototype** or "cognitive representation of features that describe and prescribe attributes of the group" (Hogg & Terry, 2000)

- **People legitimated their requests for help in their messages by describing their membership** in the group and by appealing to the group's shared history (Galegher et al., 1998).

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Internet prosocial behaviour:

Attributes of people and Interaction Processes

Social Identity Theory

- **Requests that did not reference the group were much less likely to receive a reply/help**.

- **People in cohesive groups exhibited greater linguistic norm conformity** than people in ad hoc groups (Sassenberg, 2002)

- **Group prototypes are negotiated and redefined through member interactions** (McKenna & Green, 2002; Postmes, Spears & Lea, 2000)

In other words, participants in electronic contexts collectively define who is an admired member and what is a high-quality contribution through comments and feedback provided in response to member contributions.

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Attributes of people and Interaction

Processes

Social Identity Theory

In both offline and online contexts, frequent participants are likely to form relational bonds with one another (Lawler, Thye & Yoon, 2000), especially if they expect the group to persist over the long term (Chidambaram, 1996; Walther, 2002).

In electronic prosocial contexts, as people participate over time they become aware of other members who repeatedly provide valuable help.

- **Active members will form a sense of community with other core members** and become committed to this core subgroup of the larger group (Moon, 2004)

- **These higly identified volunteers will help other members**, not only as a service to those needing help and as a matter of self-interest, but also **in order to demonstrate their identification with and commitment to the core group** of volunteers who sustain the group as a whole (Hertel, Niedner and Herrmann, 2003)

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Internet prosocial behaviour:

Attributes of people and Interaction
Processes

Social Identity Theory

In electronic prosocial contexts, as people participate over time they become aware of other members who repeatedly provide valuable help.

- **Subgroup identification, but not identification with the group as a whole, increased contributions rate** (Rashid et al., 2006)

- **The more the participants believes that other members correctly perceive their salient identities,** the more likely they are t**o make a contribution** and **the more satisfied** they are with their community experiences (Ma & Agarwal, 2007)

- **Volunteers who joined Wikipedia subgroups exhibited more prosocial behaviours** than volunteers who did not join subgroups (Kittur, Pendleton & Kraut, 2009)

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Internet prosocial behaviour:

Attributes of people and Interaction Processes

Social Identity Theory

Volunteerism studies in the offline world have generally found that participation in voluntary association management can foster commitment (Simon et al., 1998; Wilson, 2000)

- **Group identification increases cooperative behaviours related to group maintenance and survival** (Ashforth & Mael, 1989; Mael & Ashforth, 1995; Tyler, 1999)

- **Volunteer who maintains a list, often called a list of "owner", spends substantially more time** than other members in **infrastructure maintenance, social control, and external promotion** (Butler et al., 2007)

- **Leaders** in open collaborative work projects have been shown to **model desirable behaviours, unblock bottlenecks, and establish productive subgroup structures** (Kittur et al., 2009; Moon & Sproull, 2008; Vibbur, 2009)

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Internet prosocial behaviour:

Attributes of people and Interaction Processes

Social learning processes and social identification processes help explain how prosocial behaviours can be learned and sustained on the net. Social identification processes are intrumental in the group's collective definition of what constitutes helpful, as opposed to harmful, behaviour in the context of online groups.

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Internet prosocial behaviour:

The Value of Online Prosocial Behaviour

Value to People who receive or give help

Many studies across a variety of online contexts report that participation is beneficial to participants.

- **Protégés in online mentoring report positive attitudinal and behavioural outcomes** (Bennet, Tsikalas, Hupert, Meade & Honey, 1998; Muller & Barsion, 2003; Watson, 2006)

- Medical and Psychological support groups derive health benefits from their participation in addition to information and social benefits: health status include: **Shorter hospital stays** (Gray et al., 2000), **decrease in pain and disability** (Lorig et al., 2002), **decrease in social isolation** (Galegher et al., 1998), **decrease in depression** (Glasgow, Boles, McKay, Feil & Barrera, 2003), increase in quality life (Shaw, Hawkins, McTavish, Pingree & Gustafson, 2006), **increase in social support** (Glasgow et. al, 2003; Han et al., 2011), **decrease in health intervention progra, attrition** (Richardson et al., 2010), i**ncrease in self efficacy and psychological well being** (Cummings et al., 2002; Mckenna & Bargh, 1998; Rains & Young, 2009).

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Many studies across a variety of online contexts report that participation is beneficial to participants.

- **Active members** of online discussion groups and **volunteer collaborative work groups report that information benefits are important to them** (Baym, 1999; Lakhani & Von Hippel, 2003; Lakhani & Wolf, 2005; Panciera, Masli & Terveen, 2011; Wasko & Faraj, 2000).

- Some members also **derive the social benefits** that can come from interacting with other people: g**etting to know them, building relationship, making friends, having fun** (Baym, 1999; Butler et al., 2007; Chiu, Hsu & Wang, 2006; Ellison, Steinfield & Lampe, 2007; Nov et al., 2011)

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Understanding our online behaviour

Internet prosocial behaviour:

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Value to People who receive or give help

A few studies have focused specifically on benefits to those who help others. As predicted by social learning theory, people who devote substantial time and attention to helping others report receiving both egoistic and altruistic benefits, but relatively greater altruistic benefits than those who are less involved.

- Group owners (who spent more time helping the group) reported receiving different levels and types of benefits compared to other members: **Lower levels of information benefits, higher levels of prosocial benefits,** such a as the satisfaction of helping other people and supporting the real world community associated with the group's topic (Butler et al., 2007)

- The **in-role volunteer activity**, which is behavior specified by a person's role as a volunteer, **encourages an altruistic self-image and commitment to the community** (Callero, Howard & Piliavin, 1987; Piliavin & Callero, 1991)

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Understanding our online behaviour

Internet prosocial behaviour:

The Value of Online Prosocial Behaviour

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- **Members of professional online communities report increased self-esteem, enhanced reputations, knowledge, self efficacy and enjoyment in helping others** (Chiu et al., 2006; Wasko & Faraj, 2005)

- **People who contributed help derived learning benefits, reputational benefits, and benefits related to advancing the group** (Lakhani & Von Hippel, 2003)

- **People who donated code were more likely to report identification with the software development group**, whereas people who only used the code were more likely to report only egoistic benefits from participation (Hertel et. al, 2003)

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Internet prosocial behaviour:

The Value of Online Prosocial Behaviour

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- People **who contributed to a wiki system reported a sense of having benefited** to the wiki community, whereas **people who merely consumed wiki information reported only personal information benefits** (Panciera et al., 2011)

- **Mentors reported they derive satisfaction from "helping the next generation move ahead" and insight into their own career experiences** (Muller & Barsion, 2003)

- **Those who mentor derive both altruistic and egoistic benefits** from so doing (Higgins & Kram, 2001)

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Internet prosocial behaviour:

The Value of Online Prosocial Behaviour

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- Because the internet encourages users to share more intimate information about themselves, **close and personal relationships may develop among users much faster than in offline relationships** (Amichai-Hamburger, 2008)

- **Internet technologies in general enable volunteers to explore, develop, and redefine their identities due to fewer physical constraints and increased control over the type of information shared** in the online environment (Amichai-Hamburger, 2008; Williamson, Wright, Schauder & Bow, 2001)

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