



Virtual Group Dynamics and Social Networks

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Interactivity



Definitions (etymology, use and misuse) of interactivity

Interactivity has been defined in various fields from different perspectives.

Among the more popular conceptualizations of interactivity we find **synchronicity** (Van Dijk 1999; Kiousis 1999; Liu and Shrum 2002; Mundorf and Bryant 2002), **control** (Neuman 1991; Rogers 1995; Jensen 1998; Lieb 1998; Shin 1998; Steuer 1992; Lombard and Snyder-Dutch 2001; Coyle and Thorson 2001; Stromer-Galley and Foot 2002), **rapidity and speed** (Lombard and Ditton 1997; Zeltzer 1992; Novak et al. 2000), **participation** (Dyson 1993), **choice variety** (Ha and James 1998; Liu 2003), **directionality** (Markus 1990; Van Dijk 1999; Downes and McMillan 2000), **hypertextuality** (Sundar et al. 2003; Amichai-Hamburger et al. 2004) **connectedness** (Ha and James 1998), **experience** (Burgoon et al. 2000; Wu 2000; Bucy 2004, a) **responsiveness** (Rafaeli 1988; Heeter 2000; Miles 1992; Alba et al. 1997; Rafaeli and Sudweeks 1997; Wu 1999; Stewart and Pavlov 2002; Sundar et al. 2003).

Reference: Joinson, A. (2007). *Oxford handbook of internet psychology*. Oxford University Press.

Interactivity



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Interactivity has been defined in various fields from different perspectives.

Rogers defines interactivity as:

- **users' control:** 'the degree to which participants in a communication process can exchange roles and have control over their mutual discourse' (Rogers 1995: 314).
- Shin (1998) suggests the **users' ability to control the flow of information** is the one that determines the degree of interactivity.
- Williams et al. (1988) defined interactivity as '**the degree to which participants in a communication possess control and exchange roles in mutual discourse**'.
- Ha and James (1998) use a combined definition. They consider interactivity as consisting of **playfulness, choice, connectedness, information collection and reciprocal communication**.
- Liu and Shrum (2002), who defined interactivity as '**the degree to which two or more communication parties can act on each other, on the communication medium and on the messages and the degree to which such influences are synchronized**'.

The above discussion reveals the complexity of establishing a clear definition for interactivity.

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Interactivity

Table 6.2 Examples of scales and measures of interactivity

| Measures/scale of interactivity | Unit of measurement | References |
|---|---------------------|--|
| The degree to which a person actively engages in message (advertising) processing by interacting with (advertising) messages and advertisers using 7-item facet scales, 5-point Likert-type scales | The user | Cho and Leckenby 1999 |
| Websites designed to have different degrees of interactive features and opportunities for interactive exchanges | Websites' feature | McMillan and Hwang 2002; Teo <i>et al.</i> 2003 |
| The presence or absence of features (onsite poll, a 'contact us' email link etc.) enabling or facilitating user contact with a political candidate and/or campaign. | Websites' feature | Warnick, Xenos, Endres and Gastil (2005) |
| Perceived interactivity scale contained five items from respondents answers about the responsiveness of website and the easy of navigation in it | The user | Wu 1999 |
| Number of choices in a website and whether there was a clickable image | Websites' feature | Coyle and Thorson 2001 |
| Interactive websites that includes internal links relating to a software and a flat websites without links | Websites' feature | Amichai-Hamburger <i>et al.</i> 2004 |

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Interactivity as a Multidimensional Construct

Interactivity as a characteristic of the medium

- Some **scholars regard interactivity as the functional features of the medium** (Durlak 1987; Heeter 2000; Sundar et al. 1998; Massey and Levy 1999; Ahern and Stromer-Galley 2000).
- For those scholars, **functional features of the Internet include hyperlinks, chats, downloads and the like.**
- For example, Massey and Levy (1999) operationalized websites' interactivity by examining functional features such as email links, feedback forms and chat rooms.
- Similarly, McMillan (1998) examined bulletin boards, search engines, registration forms and online ordering.

Heeter (2000) suggested six dimensions to assess the measure of interactivity for a medium:

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Heeter (2000) suggested six dimensions to assess the measure of interactivity for a medium:

- 1. Complexity of choice available**
- 2. Amount of effort users must exert to access information**
- 3. Responsiveness of the medium**
- 4. Monitoring information use**
- 5. Ease of adding information and**
- 6. Facilitation of interpersonal communication.**

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Interactivity as a Multidimensional Construct

Interactivity as a characteristic of the medium

- **Advertising effectiveness** is associated with **interactivity** (Cho 1999; Leckenby and Li 2000, Macias 2000; Lombard and Snyder-Duch 2001)
- and **examination of marketing communication interactivity places consumers at the centre of the study** (Stewart and Pavlou 2002).
- Ghose and Dou (1998) suggest that interactivity **improves businesses website quality and attract customers:** (1998: 30). By ‘interactive functions’, they refer to features such as feedback, site surveys, key word search, software downloading, multimedia shows etc.
- Liu and Shrum (2002) examined online marketing web features **alongside three dimensions of interactivity – active control, synchronicity and two-way communication.**

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Interactivity as a Multidimensional Construct

Interactivity as a characteristic of the medium

- While most of the studies find relatively positive effects of interactivity on **consumers' attitude and response toward websites' ads** (Cho and Leckenby 1999; Yoo and Stout 2001),
- **Several studies find no effects or actual negative effects of interactivity** (Sundar et al. 1998; Coyle and Thorson 2001).

Technological developments of new media may improve users' ability to perform exchanges of messages and engage in a communication process.

Features that help improve the synchronicity, speed, presence and control can create a better environment that enables interactivity. Nevertheless, these features cannot be considered as the single determinant of interactivity.

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Interactivity as a Multidimensional Construct

Correlates of Interactivity

Correlates of interactivity have been studied from a variety of perspectives.
Table 6.1

- Amichai-Hamburger, Fine and Goldstein (2004) concentrate on the concept of Need for Closure (NFC). Using Webster and Kruglanski's (1994) scale they examined the correlations between users with high vs. low NFC and the level of websites' interactivity. They found that ***low NFC users prefer a higher level of interactivity*** than high NFC users.
- Sohn and Leckenby (2002) examined the correlations between users' internal vs. external 'locus of control' and perceived interactivity relative to Web surfing. They found ***internally controlled users more likely to perceive a higher level of interactivity*** than those oriented to external 'locus of control'.
- Downes and McMillan (2000) found that ***the direction of communication and control over the communication process*** influences the dimensions of the perceptions of interactivity.
- Stromer-Galley's (2000) study highlights the effect of interactivity as ***a way to facilitate the citizen political involvement.***

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Correlates of Interactivity

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Table 6.1

- Ha and James (1998) and Sundar and Kim (2004) address *users' involvement as an effect of interactivity in the marketing field*.
- Many others (e.g, Hackman and Walker 1990; Liaw and Huang 2000) investigated several effects of interactivity in distance learning environments and find that *higher interactivity leads learners to increase and refine their evaluation of the learning process*.
- Possible negative or problematic consequences include for example the contribution of interactivity to *communication processing loads* (Jones et al. 2004).
- Bucy (2004b) described the '*interactivity paradox*' as another possible problematic consequence of interactivity: 'subjects evidently enjoyed news site interactivity and the active involvement it entailed more than reading electronic text, but this form of *online participation produced a certain amount of disorientation, exacting a cognitive and emotional cost*'.

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Interactivity

Table 6.1 Correlates of interactivity

| Correlates of interactivity | References |
|--|---|
| Time flexibility | Lombard and Ditton 1997; Downes and McMillan 2000 |
| Telepresence | Steuer 1992 |
| Mimic interpersonal communication | Leary 1990 |
| Social presence, transparency, user friendliness | Durlak 1987 |
| User awareness of mediated environments | Murray 1997 |
| Need for closure | Amichai-Hamburger, Fine and Goldstein 2004 |
| Involvement | Rafaeli and Sudweeks 1997; Cho and Leckenby 1999 |
| Sense of fun, cognition, learning, frankness, openness and sociability | Rafaeli 1988 |
| Locus of control | Sohn and Leckenby (2002) |
| Need for cognition | Sohn, Leckenby and Jee 2003; Jee and Lee 2002 |

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Interactivity as a Multidimensional Construct

Correlates of Interactivity

- Dozier (2004) examined the relationships of interactivity, social constructivism and satisfaction with distance learning. Findings **support the use of highly interactive social constructivist instructional approaches** in computer-mediated and other learning environments.
- MacLean (2004) also explores the role of interactivity in the learning environment. He found **correlations between the motivation** students had to post messages **and the levels of interactivity** displayed by the messages.
- Sukpanich (2004) used the results of an online survey to test two dimensions of interactivity – machine interactivity and person interactivity – in order to predict consumers' intentions to purchase online. Results indicate **machine interactivity is positively associated with online purchase intentions**.
- **Person interactivity was positively associated with online purchase intentions** through its influence on social telepresence, subjective norms, perceived behavioural control and trust.

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Interactivity as a Multidimensional Construct

Correlates of Interactivity

- Users–agents interactivity is in the center of Huang’s (2003) exploration. Findings indicate ***interactive media users felt higher levels of mutual awareness*** with the animated characters presented.
- Several studies (Johnson 2002; Yin 2002; Yu 2004) focused on the relations of ***interactivity and marketing/consumer behaviour***.
- Yin (2002) examined interactivity and its effect on some key consumer variables. Yu (2004) surveyed video games’ players to examine their perceived interactivity. The results showed ***respondents’ buying behaviour was significantly influenced by the characteristics of interactivity and vividness***.

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Interactivity as a Multidimensional Construct

Correlates of Interactivity

But interactivity effects are still enigmatic.

- Wang (2000) followed the effects of interactivity of web campaigns in Taiwan's 2000 presidential election. Contrary to the theory-based hypothesis, moderate interactivity seemed to produce the most positive online communication effects. ***Moderate interactivity yielded more effects than either high or low interactivity***, suggesting a curvilinear relationship reminiscent of other communication variables.
- In the same manner, Hong (2003) studied the impacts of the levels of interactivity role, among other variables, in creating an experience of telepresence and the intention to revisit a website. Although interactivity had a strong effect on telepresence, ***it did not show the same significant effect on website revisiting intentions.***

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Interactivity

Table 6.3 Consequences of interactivity

| Effects of interactivity | Study |
|---|----------------------------------|
| Increased interactivity leads to increased citizen participation in political process | Stromer-Galley 2000 |
| Interactivity plays a role in creating the attraction of networks and in generating their growth | Rafaeli and Sudweeks 1997 |
| Interactivity fosters engagement and relationship building between a company and its customers | Ha and James 1998 |
| Interactive advertising has a positive influence on consumers' perceptions of brands and advertising | Macias 2003 |
| The level of website interactivity influenced participants' perceptions of the political candidate as well as their levels of agreement with his policy positions | Sundar <i>et al.</i> 2003 |
| Commercial advertising interactivity enhances user involvement with product by providing more product information hence leads to more positive evaluations | Sundar and Kim 2004 |
| Interactivity provides an opportunity for organizations to build relationships with publics, through two-way symmetrical interactive applications | Samsup and Yungwook 2003 |
| Higher degrees of interactivity yield better advertising effects (favourable attitude toward the target ad, favourable attitude toward the brand and high purchase intention) | Cho and Leckenby 1999 |
| Interactivity led to a heightened sense of telepresence | Coyle and Thorson 2001 |
| Interactivity leads to the social construction of meaning as students share knowledge and participate in collaborative and cooperative activities in the online environment | Maddux <i>et al.</i> 1997 |
| Higher web site interactivity leads to a higher level of trust that brings about a positive effect on customers intention to purchase | Sukpanich and Chen 2000 |
| Increased levels of interaction result in increased positive attitudes toward learning | Hackman and Walker 1990 |
| Higher interactivity correlates with higher communication-processing load | Jones <i>et al.</i> 2004 |
| Interactivity enhances student satisfaction | Liaw and Huang 2000 |
| Increased interactivity on a website has positive effects on users' perceived satisfaction, effectiveness, efficiency, value and overall attitude towards a website | Teo <i>et al.</i> 2003 |

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Interactivity as a Multidimensional Construct

Expected, actual and perceived interactivity



Now turn to consider interactivity as an experiential phenomenon

Several scholars consider interactivity as an experience and define it as perceived interactivity (Lee 2000; McMillan and Downes 2000; Newhagen et al. 1996; Kiousis 1999).

The paradox is that even when research defines interactivity in a particular setting as high or low, users can subjectively have different feelings, experiences, or perceptions of interactivity of different levels or intensity. Therefore, subjective and objective interactivity might diverge and could confound study.

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The paradox is that even when research defines interactivity in a particular setting as high or low, users can subjectively have different feelings, experiences, or perceptions of interactivity of different levels or intensity. Therefore, subjective and objective interactivity might diverge and could confound study.

- Sohn and Leckenby (2002) defined ***expected interactivity*** as ‘the extent of interactivity that a person expects to experience during a prospective interaction with the medium’. The expected interactivity of any individual would be based on their unique personal characteristics, different psychological variances and mostly based on subjective experience with interactivity.
- Newhagen (2004) argues that interactivity ***is an information-based process***, embedding meaning in symbols, that takes place within the individual.

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Social psychology of Interactivity in Human-Web sites interaction

Interactivity is arguably the single most important feature that distinguishes mass communication via the Web from traditional mass media. Unlike newspapers and television, the Web offers unlimited potential for interacting with information instead of simply transmitting it.

- ***Users are active participants rather than passive recipients of communication.*** The flow of information is decidedly two-way, in stark contrast to the unidirectional transmission epitomized by traditional mass media. As a result, psychologically speaking, the computer is no longer seen as a mere medium of communication but as a source of interaction (Sundar and Nass 2000).

That is, users orient toward computers as autonomous beings instead of as conduits for delivery of pre-programmed content. This explains the somewhat curious finding across many studies that:

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Social psychology of Interactivity in Human-Web sites interaction

That is, users orient toward computers as autonomous beings instead of as conduits for delivery of pre-programmed content. This explains the somewhat curious finding across many studies that:

- Computer users mindlessly ***apply rules of human–human communication to their interactions with computers*** (Nass and Moon 2000).
- They indeed ***are polite to computers, apply gender stereotypes and generally behave socially in front of the computer*** (Reeves and Nass 1996).
- Furthermore, they ***tend to form long-term affiliations with particular computer terminals***, showing anthropomorphic loyalty toward specific terminals (Sundar 2004a).
- Nass and colleagues have always maintained that the ***heightened level of interactivity afforded by computers is among the primary reasons for this ‘media equation’ of users exhibiting social tendencies toward such communication technologies*** (Nass and Steuer 1993; Nass and Moon 2000).

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