

SPOTLIGHT ON METHOD/ANALYSIS

The Idiodynamic Method: A Closer Look at the Dynamics of Communication Traits

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The idiodynamic method is a new approach to studying the affective or cognitive states that accompany human communication. The method involves video recording a sample of communication from a research participant. Using software written for the purpose, participants provide self-reported ratings on one or more variables of interest to the researcher (such as, for example, willingness to communicate, perceived competence, or communication apprehension). The ratings can be taken at a rate of approximately one per second and provide a continuous graph of changes in the variable under study. Respondents are interviewed to provide their explanation for fluctuations in their reactions. Other persons can be asked to provide ratings and explanations from an external observer's perspective. The method allows for examination of the interplay of various dynamic systems on the individual in real time.

Keywords: Communication Traits; Dynamic Systems; Mixed Methods; N-of-1 Methods; Research Methods

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In communication trait research we have become too satisfied with our variables, we need to put a microscope on them.

—Mark Hickson (2012)

If we put a microscope on the ways in which communication traits work, it is astonishing to consider how quickly characteristics of the individual converge with features of the situation to create communication behavior. The affective and cognitive context that envelopes communication is simultaneously created and recreated on-the-fly, as it is being enacted, moving relentlessly forward in time. If we look closely, we see that anxieties rise and fall in advance of public speaking, the willingness to continue speaking fluctuates as a conversation with a stranger unfolds, and we see perceptions of a speaker's competence wax and wane during the course of a formal presentation. From a research perspective, considering the ebb and flow of communication from a dynamic perspective means describing and accounting for fluctuations in affect from one moment to the next (Fogel, 2006). With a research focus on the nitty-gritty dynamics of change, we are faced with a methodological problem. Affect is a moving target—how do we track it, and how do we understand the interacting features of the person and the situation that are influencing the target variable? This article describes an idiodynamic method, a novel approach with a focus on the affective dimensions of communication as they unfold in real time, putting a metaphorical microscope on the variable(s) under study.

A Summary of the Idiodynamic Method

The term idiodynamic, adapted from Rosenzweig's (1986) work on personality, refers here to the dynamic changes within an individual as an event unfolds. In contrasting idiodynamics with Allport's "idiographic" approach to personality, Rosenzweig and Fisher (1997) stress that idiodynamics focuses on "... events derived from forces within the individual in their intimate relationship with the environment" (p. 407). The phenomenological approach of idiodynamics can be contrasted with Allport's more familiar structural approach to traits. Idiodynamics takes an individual acting during an event as the basis for analysis, as opposed to an approach based on identifying group-level traits (nomothetic) or individual-level traits (idiographic). In this application, the idiodynamic method records a communication episode, such as an oral interview, a public presentation, or conversation that lasts a relatively short period of time (measured in minutes and seconds). The method takes an individual-formative approach looking at the process of communication, rather than a summative approach examining the culmination of many communicative experiences. When employing the method, participating individuals watch a video recording of a communication event as soon as possible following its completion. Using software created for these studies, respondents rate themselves or another person on an affective or cognitive variable that is relevant to the research. A graph of each respondent's ratings is printed immediately and is used as a tool with which to interview the respondent.

Using a stimulated recall protocol (Gass & Mackey, 2000), the respondent is interviewed immediately after the ratings are produced, providing a running commentary

on the thoughts and feelings that underlie the ratings. The interview also is recorded for later analysis. At any point during the interview, the researcher or the respondent can pause the playback for a more detailed discussion, for example when a peak or valley appears on the ratings graph. The respondent's interpretation of the reasons for change in her or his affective state is recorded. The video also can be rated at a later time by external observers such as peers, teachers, or a group. In addition, features of the communication context can be manipulated and studied in an experimental setting. In our research, we have varied the purpose, style, and formality of the situation by asking participants for a public speech, an interview, or to engage in a casual conversation. We have examined the role of the sex of the interlocutors, the language of communication, the cultures of the partners, and other contextual variables on the communication process as it unfolds in real time. The theoretical underpinning of this approach, dynamic systems theory (DST), views communication as the culmination of a group of interacting, ever-changing systems.

Dynamic Systems Theory

The idiodynamic method takes advantage of insights gained from theory and research in dynamic systems theory of human development (see for example, Howe & Lewis, 2005; Thelan & Smith, 1994; van Geert, 2011). Space does not permit a comprehensive review of the dynamic systems approach, but some key items in the conceptual toolbox can be highlighted. deBot, Lowie, and Verspoor (2007) identify four key properties of dynamic systems, all of which are relevant to the present discussion. First, dynamic systems treat each state as a function of the previous state plus the effect of some influence on that state (see Howe & Lewis, 2005, especially pp. 248–249). This property explicitly recognizes that communication is a process. Each moment in time emerges from a preceding moment in a chain that cannot be broken, no matter how quickly the situation changes. Second, dynamic systems are completely interconnected. That is, the variables in the system are linked together and influence each other, much as the various systems in the human body (muscular, skeletal, endocrine, nervous, digestive, etc.) are identifiable as different systems but are integrated with each other. Third, dynamic systems are self-organizing into preferred states where the system tends to settle (attractor states) and other states are unsettled (repeller states) or in transition (phase shifts). As time moves forward, even preferred states will undergo change. Fourth, dynamic systems possess nonlinearity or threshold effects (sometimes called “the butterfly effect” or a “tipping point”), whereby small changes in one part of the system have large effects in the overall system. It is also possible that large disturbances might ultimately produce only small overall effects.

Communication affect, cognition, and behavior can be studied from a DST perspective. Examples of the interconnected systems influencing communication include the following:

- Core physiology, such as the physical process of audition and vocalization
- Affective states, such as anxiety and self-confidence
- Cognitive events, such as message assembly and interpretation of meaning

- The local social system, such as arguing with a coworker or offering condolences to a neighbor
- The global pattern of intergroup relations (e.g., negotiating international relationships)

This list is illustrative and not exhaustive, as systems can be grouped and regrouped in different ways.

We enter and exit communicative events all day long, with carry-over effects from one to situation another, as when a bad day at work leads to an argument at home. The term “attractor state” is used when the system is in a comfortable, settled state (deBot et al., 2007). For example, when people feel willing to communicate, they also tend to have low anxiety. The frequency with which these states are connected leads to the patterns identified in communication trait research; anxiety and willingness to communicate have been shown to correlate negatively (McCroskey & Richmond, 1991). However, traditional approaches to trait research have a more difficult time explaining unexpected or incongruous states that are “soft assembled” (Parladé & Iverson, 2011; Thelen & Smith, 1994) or temporarily put together, such as high anxiety and high willingness to communicate. Using the idiodynamic method, these soft assembled states can be studied to better understand the inner workings of the processes that create exceptions to the general rule. DST uses a developmental perspective with a particular sensitivity to the initial conditions (deBot et al., 2007). Changing initial conditions can reverberate throughout the rest of the system, making communication processes notoriously difficult to predict in advance, even when the component parts are fairly well known. For example, it is difficult to predict with precision which comment will be the last straw in an argument or when one might say the words that lead to falling in love.

Comparison of Idiodynamics and Other Approaches to Research

Although the application of dynamic systems theory is in its infancy, even in studies of human development (Spencer, Perone, & Buss, 2011), it is important to respect the diversity of approaches to research. Every method creates a perspective from which certain types of questions are studied and others are out of bounds (MacIntyre, Noels, & Moore, 2010). The idiodynamic research method is complementary to other approaches widely used in communication research.

Idiodynamics addresses questions about the patterns of change within an individual that cannot be addressed with cross-sectional, longitudinal, or qualitative-retrospective research designs. Cross-sectional studies look at individual differences within a sample. Statistical tools, such as ANOVA and correlation, treat the variability within groups or off the regression line (respectively) as error. But variability is the prime focus of the idiodynamic method, addressing research questions that are not appropriate for analysis with traditional correlation or ANOVA. In longitudinal studies that employ a test-retest approach, the intervening process is not studied directly as it unfolds; therefore the key drivers of change can be difficult to identify. Qualitative-retrospective studies can better address the drivers of change, but as the time span between events and the recalling of them increases, memory becomes more prone to a variety of biases. A long list of basic cognitive biases have been described that can affect

qualitative-retrospective accounts, including forgetting information, absentmindedness, blocking specific memories, misattribution, suggestibility, retrospective biases, and persistence of intrusive thoughts (Schacter, 1999; see also Hilbert, 2012). In terms of accurately capturing an event, a short video beats a long memory almost every time.

Every method has its strengths and limitations. The idiodynamic method was born as a mixed-methods approach, generating streams of quantitative data that can be linked with qualitative interpretations in real time. Each participant generates a considerable amount of data that can be examined holistically or in segments. The method can be used for observation or experiment, depending on the research question. A strong focus on understanding the dynamic systems within the individual changes the way researchers examine communication traits and behavior.

Current Research Examples Using the Idiodynamic Method

In our lab, my students and I have been conducting research using this approach; colleagues at other universities are starting to utilize this methodology as well. The first study using this method has been published. MacIntyre and Legatto (2011) examined Willingness to Communicate (WTC) from a dynamic systems perspective. Data were gathered from six female students who were studying French as a second language and asked to complete an oral interview of eight specific tasks in French (MacIntyre, Babin, & Clément, 1999). Some questions were relatively easy (Question 1: Describe what you are wearing today) and others were more difficult (Question 2: Describe the role of parliament in the Canadian system of governance). Substantial diversity in the patterns of change in WTC was found both within the person over time and across the different interview questions. In Figure 1, data are presented for two participants, Gertrude and Mary. Gertrude showed both high trait-WTC and strong French-language skills. Her nonverbal behavior included maintaining eye contact, a relaxed posture, and a steady speaking pace. Gertrude showed some nonverbal signs of anxiety,

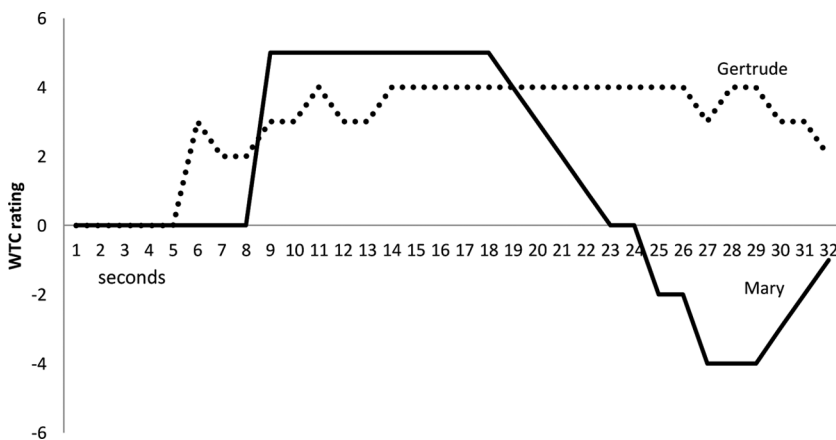


Figure 1 An approximately 30-second sample of the data produced by the idiodynamic method. Complete data for Gertrude and Mary are reported by MacIntyre and Legatto (2011).

such as when she was offering a tangential response or struggled to correct a verbal mistake, but she maintained positive levels of WTC throughout the study. Mary, a low-WTC participant who was taking a conversational French class, was described as starting strongly with good French vocabulary use, but she refused to even attempt to answer the second question (the difficult government-related question). Figure 1 shows that Mary's WTC dropped precipitously, and that is the moment at which she switched to her native language and said she would not answer the interview question. Mary's WTC recovered on subsequent, easier questions.

MacIntyre and Legatto (2011) described the occasional soft-assembly of high-anxiety and high-WTC states that occurred on difficult tasks, but only after the respondent had initiated a response. Respondents whose WTC dropped quickly when asked a difficult question tended to refuse to initiate a reply, as predicted by the original WTC theory (McCroskey & Richmond, 1991) and shown in Figure 1 with Mary's data. MacIntyre and Legatto (2011) concluded that WTC shows the properties of a dynamic system, including changes over time that are partially dependent on the previous state; interconnectedness of the linguistic, social, cognitive, and emotional systems underlying WTC; attractor and repeller states; and evidence of a threshold effect that differed between beginning and continuing to speak. They integrated a description of the participants' verbal and nonverbal behavior with dynamic changes in WTC.

Additional research is underway, showing the flexibility of the method and its adaptability to a variety of research questions. In our lab, we currently have three studies under way. We are investigating (a) fluctuations in perceived competence as the action assembly process unfolds (see Greene, 1997), (b) dynamic changes in anxiety and heart rate during a three-minute impromptu speech, and (c) differences between English–English and English–Chinese dyads in conversations. Research also is beginning in other labs. Sarah Mercer (University of Graz, Austria) has used the idiodynamic method to examine the interrelations of students' self-perceptions when doing pair-work in a second language. In a more complex study, Tammy Gregersen (University of Northern Iowa) is examining ratings of anxiety taken at five-second intervals during a 20-minute classroom presentation. The channel of communication is being manipulated during playback for observers, by playing only the audio, the video without sound, or the combination of both audio and video. Ratings are made by the respondents, an expert, and a peer. Finally, heart rate data are collected as the participants speak. This study examines the number and duration of peaks and valleys in the graphs, instances of concordance and discordance between raters along with the raters' rationale for their ratings, the dimensions and triggers of anxiety, and the impact of audio and video channels at the individual level.

Conclusion

The idiodynamic method represents an innovative approach to studying the rapid fluctuations in the dynamic systems that underlie the communication process. It provides a sort of microscope with which to examine familiar traits, such as competence, anxiety, and WTC from a different angle, using a timescale that has not typically been investigated.

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