

Mediated Person-to-Person Communication: A Social Psychological Perspective

Paul D. Guild
Adjunct Emeritus Professor
Department of Management Sciences
Faculty of Engineering
University of Waterloo, Canada

Abstract

This review paper summarizes a substantial investigation of mediated person-to-person communication, comprising 13 empirical studies, most undertaken in the Department of Experimental Psychology at the University of Oxford between 1975 and 1978. It was submitted as the author's doctoral thesis, and although the thesis was successfully defended in 1978, all but two experiments have not been previously published.

During current extraordinary period of communication adjustments made necessary by the COVID-19 pandemic, there may be useful relevance toward such new practices as: professionals consulting via teleconferences; students learning via distance education; industry teams collaborating online to advance shared projects; and family members sharing private time during separation necessitated by quarantine against viral transmission.

Generally, the review as reported here reflects the original mid-70s state-of-knowledge in the literature review and research methods. Further it depicts participant viewpoints prior to contemporary experience with such teleconferencing applications as Zoom, Skype, and FaceTime. Our gradual learning and adaptation over recent decades make it difficult today – if not impossible – to probe without a bias under similar conditions and expectations.

With an aim of conveying “lessons learned” during times of COVID-19, this investigation review summarizes several enduring phenomena arising from mediated communication and alerts user expectations to include:

(a) Social cues that help to facilitate familiar social dynamics like “leadership emergence” can be communicated effectively (although often with less salience) during high quality mediated communication.

(b) Teleconferencing applications can enable efficient, effective, and even enjoyable interactions, such as by creating “paradoxical closeness” while overcoming physical separation and social distancing.

(c) Today's computer users in jurisdictions with sophisticated Internet infrastructure may have had some experience with teleconferencing applications. While other users may find themselves plunged into teleconference usage, either by their institutions or by government mandates. Doubtless, these are measures of adjustment for the control viral spread.

Background. Investigation of person-to-person mediated communication was the central aim of this doctoral thesis. Particular attention was given to interactions which involve audio-video links, often called "teleconferences", and their effect on interpersonal communication processes. Social psychological theories and methodologies were employed to investigate specific communication phenomenon. The following topics were considered when assessing mediated interactions, often with empirical contrast to the familiar condition of face-to-face: (a) alterations to small group dynamics, (b) intersubjectivity or achievement of a state of shared impressions from conceptual and methodological perspectives, (c) possible communication medium factors affected by the attenuation of social cues, (d) content analyses of mediated communication studies, and (e) impact and consequences of self-focused attention which might arise during mediated interaction. The conclusion recapitulates the findings as they pertain to methodology, application and theory. Future contributions of social psychology to research in the field of mediated communication were considered.

Part I. At the outset, the stage was set with background introductions and outlines of possible contributions of the thesis to telecommunications research. With four main themes, the *first objective* was to demonstrate that theoretical contributions of social psychology might be applicable to questions of mediated interaction. Previous research in social psychology, for the most part conducted in a face-to-face condition, might generalize to the new research and if it did not, this too might be of interest. Familiar research findings related to such phenomena as leadership role emergence, intimacy management, and effects of self-focused attention were among the theoretical concepts employed in the reported investigations. A *second objective* was to develop research methods for use in communication studies. A standardized test for assessing person perception in the video medium was developed. Further, a method for assessing communality of impressions, also termed intersubjectivity, was created for use in communication studies. The *third objective* was to attempt to find answers to problems posed by some telecommunications designers and evaluators. For example, even before the mid-70s, systems engineers had long pondered the issue of how much information is necessary for successful audio-video interaction. Perhaps a more basic question, namely, whether or not nonverbal cues could be communicated effectively through this medium, was given careful consideration. Finally, the *fourth objective* of the thesis was to identify some useful dependent variables for application in experimental communication studies. What follows is a brief summary review of the studies and links to where additional information on them can be located.

Teleconferencing and leadership emergence (Study A in Table One). An attempt was made to assess the role of medium of communication on leadership differentiation in discussion groups. Groups of undergraduates met on five different occasions to solve human relations problems, either in face-to-face discussion situations, or over audio/video conferencing networks. In face-to-face conditions, development of leadership took almost a classic form, with sociometric measures systematically related to behavioural indexes; in the audio/video (teleconference) conditions, role differentiation tendencies were sharply curtailed, and the relationship of sociometric indexes with indexes of verbal output were greatly diminished. Speculation about how mediated communication may affect differentiation processes were offered; further, it is expected that similar influences will be experienced into the foreseeable future. A link to the full published paper (Strickland, Guild, Barefoot & Patterson, 1978) is provided in the Selected Bibliography.

Distance, gaze and the intimacy equilibrium model in audio/video-mediated and face-to-face dyads (Study B in Table One). This experiment focused on the Argyle-Dean Intimacy Equilibrium Model, gaze and social distance in face-to-face and audio/video-mediated dyads. It was found that, during audio/video-mediated interaction, communicators did not experience the anticipated degree of interpersonal remoteness or separation. What was expected to act as a technological barrier appeared to affect social influence but not interpersonal or informational communication. Under audio/video-mediated (teleconference) conditions, certain negative consequences of excessive intimacy (especially assertiveness or dominance) appeared less salient, while certain positive effects remained unchanged. Consequently, subjects in the audio/video-mediated conditions liked each other to a greater degree, enjoyed the experiment to a greater extent, and perceived greater "closeness" than did subjects in face-to-face conditions. The levels of intra-dyadic gaze, which were significantly higher in the audio/video-mediated dyads, may have increased perceived intimacy between communicators. Notwithstanding that persons in normal face-to-face interactions can feel experiences of "too close for comfort" when occurring at such distance as $\frac{3}{4}$ metre of separation, persons at distance in technologically mediated interactions can experience "paradoxical closeness" because they are able to engage in gaze and/or mutual gaze without the sort of interruption normally triggered for the purpose of intimacy reduction. A link to the full paper (Guild, 2020) is provided in the Selected Bibliography.

Part II. Next the investigation examined the conceptualization and methodological development of *intersubjectivity* for use in communication studies and four related empirical studies are reported.

Intersubjectivity emergence: A concept and methodology for communication studies (Study C in Table One). A theoretical study of intersubjectivity, a condition of shared impressions or communality of experience between individuals, was undertaken. The origins of this concept were summarized and an attempt was made to show its compatibility with other theory in social psychology. Methodologies were developed for measuring the extent of intersubjectivity in communication studies. These may be employed to test differences of dispersion or variability in semantic differential ratings. Beyond 2020, subsequent investigations of mediated communication may benefit from this type of analysis with a benefit of high face validity.

Variation in person perception as a function of cultural differences between encoder and decoder (Study D in Table One). This investigation, composed of two studies, assessed variation in person perception occurring as a function of cultural differences between encoder and decoder. Understanding of such variation may be essential as cross-cultural mediated communication becomes more commonplace. A multicultural subject population of psychiatric nursing students was subdivided into categories either *like* or *unlike* the apparent cultural background of two encoders in a standardized person perception test. It was found that, as predicted, *like decoders* were more effective at classifying the encoders' nonverbal communicative acts than were *unlike decoders*. Moreover, *like decoders* formed the more homogeneous impressions of the encoders' personalities. Implications for international teleconferences were considered. Now that global mediated communication has become widespread, related factors may require sensitive consideration to optimize effective transactions.

Comparing social influence and intersubjectivity in three communication conditions (Study E in Table One). This quasi-experiment was to assess social influence and intersubjectivity in three dyadic conditions: (a) simulated-distance teleconference, (b) real-distance teleconference, and (c) face-to-face conference. Indexes of intersubjectivity but not social influence showed significant differences. There was greater communality of experience among face-to-face dyads than among dyads in either of the teleconference conditions. Differences between the two teleconference

conditions were not evident. Further, this study considered some problems associated with employing rigorous experimental methodologies in settings which do not allow adequate experimental control. Replication of these findings would be of some interest today, especially as personal adaptation to mediated communication may be found.

An assessment of differential intersubjectivity in five communication conditions (Study F in Table One). In this experiment, several intersubjectivity analyses were performed on data from five communication conditions. Three were face-to-face dyadic interactions at distances of: (i) $\frac{3}{4}$ metre, (ii) 2 metres, and (iii) 3 metres. Two were audio/video mediated dyadic interactions with distances comparable to (iv) 2 metres, and (v) 3 metres. Communality of impressions formed of their discussions was assessed. It was found that, as predicted, greatest intersubjectivity coincided with greatest immediacy and social presence. The intersubjectivity analyses complemented and extended previous findings; moreover, it may prove useful in related studies conducted in the future.

An assessment of intersubjectivity in equivalent groups (Study G in Table One). This study compared the homogeneity of impressions formed of two encoders by members of equivalent groups. The purpose was to demonstrate that differences do not necessarily emerge when an intersubjectivity analysis is performed. Both groups of subjects viewed a standardized person perception test and then rated the encoders' personalities using semantic differentials. Results showed no significant group differences in homogeneity of impressions formed of either encoder.

Part III. To consider the way in which medium of communication can be responsible for the attenuation of social cues, two studies were conducted.

Consequences of reduced information rates for person perception in an audio/video medium (Study H in Table One). This investigation aimed to determine optimal information rates for person perception in an audio/video medium considering practical cost/effectiveness considerations for engineering and human factors, and theoretical issues for social psychology. The independent variable manipulation was created by a video frame rate continuum ranging from 30 frames per second (f.p.s.) to 15, 10, 5, 2 and 1 f.p.s. The first condition at full bandwidth was perceived as continuous motion while the last condition was perceived as frequently updated static images. A standardized person perception task was administered in each condition to separate experimental groups. It was found that (a) there was an optimal information rate at which intersubjective agreement in perception was maximal, (b) at 15 f.p.s. communication effectiveness was at least as great as that of 30 f.p.s., (c) at 10 f.p.s. there was a perpetual flicker that was disruptive to task performance, and (d) at 1 f.p.s. task performance was significantly better than chance or guess rate. Implications of these findings for both orientations were considered. In recent years, as complex video signal compression techniques have overtaken the simple 'framerate variation' method, motivation for extending this study is expected to be low.

An effect of the absence of colour cues on person perception in the video medium (Study I in Table One). In order to demonstrate an effect of the absence of colour as a social cue, a standardized person perception test was performed using black-and-white and colour video displays. The experimental task was to decode nonverbal communicative acts which were depicted by a male and a female encoder (19 acts each) and then to rate the encoders' personalities using a semantic differential. It was predicted that colour as a social cue might function at two levels: the first contributing to decoders' interpretations of specific communicative acts, and the second contributing to overall impressions formed of the two encoders by decoders. Evidence was found for the second effect but not for the first and consequences of this finding for audio/video mediated communication were considered. Again, as colour video in teleconferencing is now the standard and black-and-white video is uncommon, motivation for extending this study may be low.

Part IV. Systematic content analyses of mediated communication interactions were performed to yield a meta-study using video recordings from two previous studies reported above (see *Studies A and B in Table One*).

Content analyses of cross-media studies (Study J in Table One). This study compared leadership emergence in four-person groups which met either face-to-face or using an audio/video teleconference system. A sub-study compared negotiation outcomes in face-to-face, simulated-distance teleconferencing and real-distance teleconferencing dyads (as per *Study B* above). Social psychological literature suggested a number of interpersonal communication variables which were considered: (a) verbal including frequency and duration of talking, interruptions, back channel responses, and invited comment, (b) para-verbal including filled pauses, ritualized speech, and sentence disfluencies, and (c) nonverbal including frequency and duration of gaze, smiles, head movements, gestures, and postural changes.

There were more verbal utterances and gestures exchanged in face-to-face interactions; mediated communicators gazed more but interrupted each other less. Considering the number of dependent measures under investigation, significant media differences proved somewhat elusive. Nevertheless, interrelationships between dependent variables were sufficiently systematic to encourage further investigations using a multidimensional approach, and suggestions were offered for future content analyses in cross-media studies. Users can be expected find that modern mediated communication applications will yield fewer social cues than produced in face-to-face interactions and this is normal.

Part V. Certain aspects and consequences of self-focused attention as may necessarily arise during mediated communication was the concern in two experiments considered next.

A demonstration of age-related differences in the preference to teleconference (Study K in Table One). This field study was devised to demonstrate an age-related difference in the preference to use a teleconference system. Visitors to a faculty of engineering's open house were classified into four age categories: (i) elementary school, (ii) secondary school, (iii) university and junior career, and (iv) middle and senior career. The frequency and duration of teleconference system use were found to decrease across the four categories. The compatibility of these results with Duval and Wicklund's theory of objective self-awareness (OSA) was considered. Based upon current experiences with young users of communication technology, it should come as no surprise that just seeing and hearing oneself during mediated communication can have either a positive or negative reinforcement effect, depending on individual differences.

Video feedback and self-assessment of communication effectiveness (Study L in Table One). Two studies sought to demonstrate a negative shift in self-assessment of communication task performance following video feedback. Both studies found that subjects typically perceived their task performance to be below their expectations of effectiveness. There was the suggestion that this reduced effectiveness was more personal than media-related (*Study L-1*), and that it was more of an enduring limitation than a temporary one (*Study L-2*). Also in the second study, personal performance was rated lower than peer performance of the same task. It seems likely that most audio/video-based teleconference systems can evoke states of objective self-awareness among users and, in addition, many systems provide video feedback with the use of self-reference monitors. Experiences of self-focused attention, video feedback and subsequent negative self-attributions can bring about a reluctance to use teleconference systems.

Determining the effect of self-focused attention on communication task performance (Study M in Table One). In this experiment, an attempt was made to determine the disruptive influences of self-focused attention, a phenomenon which might be evoked in teleconference situations. Subjects performed a standardized person perception task and word perception task in one of three conditions: (i) high OSA created by the presence of a self-reference monitor and video camera, (ii) medium OSA created by the presence of a video camera only, and (iii) low OSA with neither a self-reference monitor nor video camera. Three dependent measures, shown to discriminate conditions in communication studies, were employed. However, in this study no evidence was found of reduced performance of the communication tasks. In the age of smartphone “selfies”, users of mediated communication systems can be expected to experience an OSA “camera effect” that may trigger “approach” to some but “avoidance” to others.

Finally, the thesis summarized the key findings according to three distinctions of methodology, application and theory. Suggestions about future contributions of social psychology to communications research were discussed.

“It is the thesis of this book that society can only be understood through a study of the messages and the communication facilities which belong to it; and that in the future development of these messages and communication facilities, messages between man and machines, between machine and man, and between machine and machine are destined to play an ever-increasing part.” (Wiener, 1950, p. 9)

In the early to mid-1970s, social psychology matured despite a phase of self-criticism, even self-denigration, the likes of which many disciplines could not have survived. Earlier in the thesis, it was suggested that social psychologists had generally ignored the important research area of mediated person-to-person communication. By the end of the 1970s, there were signs that social psychology had begun to re-examine some of its priorities (e.g., see Strickland, Aboud & Gergen, 1976), and that evident among these priorities as an increased concern for its role in deciding the future of telecommunications (e.g., see Short, Williams & Christie, 1976; Weeks & Chapanis, 1976; Williams, 1977; Wish & Kaplan, 1977).

An overview of the research comprising this thesis now follows and is subdivided into (a) methodology, (2) application, and (3) theory. In order to cite conveniently findings reported earlier, Table One lists all the studies which are denoted by 13 upper case letters A through M; throughout this concluding chapter, these letters are cited to represent the studies in the table.

Table One**List of 1970s Thesis Studies with Expected Relevance to Mediated Communication in 2020**

<i>Study</i>	<i>Title</i>	<i>Relevance</i>
A	Teleconferencing and Leadership Emergence	High
B	Distance, Gaze and the Intimacy Equilibrium Model in Audio/Video-Mediated and Face-to-Face Dyads	High
C	Intersubjectivity: A Concept and Methodology for Communication Studies	High
D	Variation in Person Perception as a Function of Cultural Differences Between Encoder and Decoder	Medium
E	Comparing Social Influence and Intersubjectivity in Three Communication Conditions	Medium
F	An Assessment of Differential Intersubjectivity in Five Communication	Medium
G	An Assessment of Intersubjectivity in Equivalent Groups	Medium
H	Consequences of Reduced Information Rates for Person Perception in an Audio/Video Medium	Low
I	An Effect of the absence of Colour Cues on Person Perception in an Audio/Video Medium	Low
J	Content Analysis of Cross-Media Studies	Medium
K	A Demonstration of Age-Related Differences in the Preference to Teleconference	Medium
L	Video Feedback and Self-Assessment of Communication Effectiveness	Medium
M	Determining the Effect of Self-Focused Attention on Communication Task Performance	Medium

Learning for Methodology. The initial indication that variance/invariance of social process would play an important part in the reported studies occurred in the first study where leadership emergence was examined using indexes of group members' agreement on perceived leadership qualities. In the face-to-face groups, there was greater agreement as to who members felt had assumed the group leader role (*Table One - A*). In the same study, relative communality of variance between dependent measures was reported.

Further, communality of impressions played a central role in the intersubjectivity analyses which were performed in several studies (*Table One - C, D, E, F, G, H*). Four methods for assessing communality of impressions were developed based on some familiar techniques in person perception literature (e.g., Gage & Cronbach, 1955) and some emerging methods for assessing homogeneity of variance (O'Brien, 1976). These methods proved useful when probing the extent of consensus across mediated conditions.

When used in an assessment battery, the intersubjectivity analyses offered some tests which were of varying power, robustness, conservativeness but, nevertheless, having conceptual complementarity. One method, for example, was extremely sensitive in detecting group differences, while another method was perhaps excessively conservative; the necessity for both extremes of assessment techniques may have a parallel in a familiar methodological dilemma, namely, that of committing Type I and Type II errors. When performing cross-media comparisons in shared understanding, one, of course, wants to avoid rejecting the null hypothesis when it is true (Type I) but, equally, one does not want to fail to reject the null hypothesis when it is false (Type II). Teleconferencing literature has been replete with null results and some sensitive method of detecting subtle media differences was called for.

Many of the reported intersubjectivity analyses employed semantic differential rating scales. The main focus of attention was on variance differences rather than mean differences. Semantic differential was favoured because the response scales were relatively straightforward to produce, subjects seemed familiar with their use and the analysis of data generated in this manner was not unduly complicated. Guidance was received from the substantial history of semantic differential use as a research tool in social psychology.

Several times in the thesis, a stated objective was to identify the most useful dependent variables for communication studies. The intersubjectivity analyses emerged as reliable and, seemingly, valid communication indexes. They appeared to offer some advantages over other derived scores and over subject attitude responses, because they are less susceptible to subject response dispositions (*Table One - E*). The relative viability of dependent measures in content analyses was considered (*Table One - J*). The measures which showed greatest stability (in terms of intercorrelations and proportion of variance shared) were typically those which have been used in past content analyses. With respect to future content analyses of mediated interactions, suggestions were made for improving certain measurements using automated techniques.

Other concepts presented assessment challenges such as the meaning of interpersonal distance in mediated settings. A multifaceted approach proved useful; distance was examined with respect to (1) estimations in feet of actual distance between persons, (2) a semantic differential component which described distance using 13 bipolar adjectives, and (3) subject attitude reports with respect to both perceived psychological distance and perceived physical distance (*Table One - B*). A useful method of comparing retinal image size for both mediated and face-to-face interactions was devised. It was found that, for example, a 2 metre distance between communicators could be simulated by adjusting the camera lens and its distance to the mediated communicators.

Establishing the standardized person perception test seems to have been a worthwhile endeavour, providing results which eventually were compared across different experiments (*Table One - D, G, H, I, M*). Useful and interpretable results were found when using the *a priori* scoring method and, to a lesser extent, the scoring criterion based on intragroup modal judgments. As well, the word perception test provided a useful covariate when used to partition effects that could have arisen due to language proficiency, reading ability, and motivational factors. Other investigators expressed an interest in this procedure for teaching and/or research purposes.

The "real-distance" teleconference study suffered major methodological shortcomings, the most serious of which was the inability to assign randomly subjects from a single population to the experimental conditions. This basic requirement of the experimental method made suspect the subsequent analysis procedures. Perhaps, the use of covariates would offer statistical control where methodological control is difficult or impossible (*Table One - E, J*). Estimating the effects of intervening variables and using repeated measures within subjects may add to rigour even where different participant populations are involved. Methods of programme evaluation may help to guide these endeavours.

Learning for Application. Strong evidence showed that social psychological and human factors can be influenced in significant ways during technological intervention. Counterintuitive results demonstrated that changes to human communication processes were not easily second-guessed and that empirical testing was necessary. Emergent leaders were less influential (*Table One - A*), and homeostatic social drives continued to regulate interpersonal factors such as intimacy (*Table One - B*). While varying to some extent as a function of medium, intersubjectivity was surprisingly high in certain audio/video-mediated interactions (*Table One - F*). Human communicators exhibited unexpected reactivity e.g., feeling close to each other when distance had been overcome through communication (*Table One - B*). On the other hand, they were not so easily able to overcome the impact of self-focused attention as evoked by video cameras during mediated interaction (*Table One - B, K, L, M*). Moreover, social norms which were thought to regulate the level of interpersonal gaze during face-to-face interactions seemed to perform a less essential regulatory function for the management of intimacy in mediated circumstances. Hence, mediated communicators gazed at each other more and this provided the potential for concentrated information reception over the visual channel (*Table One - B, J*). Ample evidence showed that nonverbal social cues can be adequately transmitted through the audio/video medium (*Table One - D, F, H, I*).

With respect to the quality of audio/video communication links and their influence on social interaction, two conclusions were drawn. First, there was the suggestion that increased verisimilitude to face-to-face interaction is necessary if the same extent of coordination and synchronization of verbal, paraverbal and nonverbal cues are to be accomplished in mediated communication. This was an argument which implied that the richer the communication channel, the better it would be for interpersonal communication. Evidence from the reported studies (*Table One - A, I, H, J*) indicated that there was insufficient quality in transmission of both audio and visual cues. For example, communicators did not have the confidence in the coordination of their discourse to risk interrupting each other's conversation; the interactions were more formal.

However, a second approach to the question of communication fidelity stemmed from the consideration of optimal information rates. This may have been of greater consequence in the short term as even more consideration is given to the effects of video bandwidth compression (*Table One - H*). There was strong evidence in support of the notion that with video of 15 frames per second comparable communication effectiveness can be achieved as with the full bandwidth of 30 frames per second. Even at 1 frame per second, the rate provided important social information (*Table One - H*). As expected, the actual content of the communication determined whether more information or less information was necessary; rapidly changing content needed more frequent sampling than did content which changed slowly. An optimal frame rate, namely, one which sent neither too much nor too little information for effective communication, achieved the maximal communality of perception or shared understanding.

The potential usefulness of this notion might be illustrated in the results of another study. It was shown that cultural differences between the encoder and the decoder can influence the effectiveness of their communication. If only salient information were communicated between them, there may be increased similarity in their perceptions. This assumes that subtle micro-cues add a degree of ambiguity to the interpretation of behavioural acts. In another application, communality of impressions was monitored using intersubjectivity analyses and, with feedback, the perspectives of negotiators might be shaped in order to achieve greatest consensus about a mutual problem. At this point of maximal agreement, negotiators might be informed so that they could attempt to reach a compromise that would be mutually satisfactory.

From a mid-70s vantage point, it seemed impossible to predict the form of future communication technology. However, some contemporary problems to be overcome were identified. First, as already suggested, was that improvements should be made to the video characteristics. Further consideration should be given to image size and implications of it for perceived distance between communicators. The contribution of colour cues might be examined in depth and more exact technological solutions to the problem of eye contact should be pursued. With the latter, combining the camera lens and monitor into a single unit through the use of fibre optics might provide one answer. A general suppression of technological impact would seem advantageous. This might include the use of self-correcting cameras that could home-in on the communicators thereby removing the need for self-reference monitors which are used to compose the output image. The "absent" camera would assist in giving the hardware a lower profile. As to audio quality, the ultimate system should permit open microphones between communicators without any risk of audio feedback and without the necessity of voice activated switches. It should have improved tone, balance, and volume characteristics.

Soon the question of bandwidth compression and amount of information which can be transmitted efficiently would be solved to a large extent with the advent of fibre optics. It was estimated that with glass wire carriers and laser signals, up to 1,000 simultaneous two-way channels of full bandwidth information could be transmitted via a wire no thicker than a human hair. This raises another important matter to consider about future technologies; namely, how might one predict the social impact these changes will have upon our lives? The answer to this and other important communication questions continue to be addressed while there is still time to influence the direction of change in tomorrow's society.

Learning for Theory. Certain established theories from social psychology made contributions to this thesis by providing guidelines and conceptual formulations. It was not intended that these theories should themselves be tested; rather, they suggested some hypotheses for experiments and assisted in the interpretation of results. For example, some of Bales's (1953) work on leader emergence was replicated in face-to-face groups while mediated groups remained leaderless (*Table One - A*). There was apparent empirical consistency with notions put forth by Argyle and Dean (1965) in their Intimacy Equilibrium Model (*Table One - B, F*). Mehrabian's (1971) immediacy concept found some support (*Table One - B, F*) as did some of the hypotheses advanced by Mehrabian and Reed (1968) concerning determinants of communication accuracy (*Table One - D, F, H*). The theory of objective self-awareness as presented by Duval and Wicklund (1972) proved useful and promised to reappear in future communication studies (*Table One - B, K, L*). Schlosberg's three dimensions of emotion (1954) and circle (1952) continued to contribute to the study of nonverbal communication (*Table One - H*).

Further, the work of Ekman and Friesen (1969, 1975), and Ekman, Friesen and Ellsworth (1972) on facial expressions, the barrage of non-verbal cues, and micro- and macro-affect displays were particularly useful (*Table One - H*). The model of mediated communication which was outlined early in the thesis, served its intended function of defining research objectives, clarifying relationships within complex communication systems and assisting in the explication of empirical analogues. A case in point would be consideration given to impact of self-focused attention during video-mediated interaction (*Table One - K, L, M*). The model illustrated that person, medium and task factors seem quite inextricable.

Among the more useful theoretical notions to emerge was the concept of intersubjectivity. According to this concept, communication effectiveness might be defined in terms of communality of impressions and shared understanding achieved in a particular communication situation or between particular communicators (*Table One - C*). Methodologies were developed to translate this notion into useable procedures. These were tested and found to yield interpretable results (*Table One - D, E, F, H, I*). The problem of establishing *a priori* criteria of accurate communication might be relieved by the employment of elicited criteria which would take the form of homogeneity of impressions and shared understanding. Thus, effective communication need not be assessed in absolute terms such as "correct-incorrect" but in relative terms such as "common-unique". Applications for such a technique would seem widespread in ongoing communication studies.

The notion of optimal information rates may have stirred some theoretical interest. Further investigations may show that, where the aim is to produce similarity of impressions, a moderate rate of information is necessary. There would seem to be a point on the information rate continuum at which most perceivers will receive the necessary salient information without feeling overwhelmed by it. While this notion was not a new one to social psychology, its importance was not often considered. The support offered for the operation of optimal information rates in person perception was substantial (*Table One - H*).

Occasionally, there were empirical challenges to common sense notions about mediated human behaviour. It was thought, for example, that technological links would prove to be a formidable intimacy barrier between communicators. However, the evidence suggested that under some circumstances, mediated interaction can seem less remote than in situations where face-to-face persons are seated too far apart (*Table One - B*). Little evidence could be found of communicator adaptation to mediated interaction even though it might be expected to occur as persons became accustomed to the situation. The fifth session of mediated discussions appeared to be similar to the first session (*Table One - A, J, L*). Long-term studies would be required before conclusions could be drawn about the adjustments made by participants to this form of communication.

At other times, notions of common sense received support. Dynamic displays of nonverbal communicative acts were perceived more effectively than were static displays (*Table One - H*). The presence of colour cues in a video display contributed to the homogeneity of impressions formed of target persons (*Table One - I*). Reliable evidence in the form of a negative correlation between filled pauses (thought to indicate the speaker's desire to continue to hold the floor in conversation) and the frequency of interruptions was found (*Table One - J*).

In conclusion. Social psychology and telecommunications seem now to be inseparable. If progress in technological areas were to halt suddenly, a multitude of questions would still remain to occupy the energies and research activities of interested social psychologists. However, technological developments in communication show no signs of flagging; on the contrary, they are accelerating with added impetus from such developments as microsystems technology. The impact of communication on our social world promises to be enormous and occurring sooner than is commonly expected. The quotation which introduced this section is nearly seven decades old (Wiener, 1950), but never has it been more appropriate than today. For the coming decades, its truth may be regarded as understated.

Perhaps of special significance for mediated communication during COVID-19 isolation procedures are these findings:

(a) An interpersonal state of shared impressions (intersubjectivity) can be experienced in mediated interactions, with a resulting positive regard for other interactors and/or for shared tasks; this reaction can be a surprise to some users.

(b) Social cues that help to facilitate familiar social dynamics like “leadership emergence” can be communicated effectively (although often with less salience) during high-quality mediated communication.

(c) Teleconferencing applications often enable efficient, effective, and even enjoyable interactions, such as by creating “paradoxical closeness” while overcoming physical separation and social distancing.

(d) A predictable “camera effect” can give rise to self-focused attention (objective self-awareness) can be experienced as heightened (positive or negative) concern for how one is perceived over an audio/video link; indeed, some users may have a predisposition toward what might be thought of as a form of “selfie mania”.

(e) A tendency toward equalizing of the rates of group member participation, as manifest in the form of expressed invitations for the more silent participants to take an opportunity to express their views to the group, and what could be regarded as a “corollary effect” of tending to downplay overstated views from domineering participants in the group.

(f) Computer users in jurisdictions with sophisticated Internet infrastructure often have had some experience with teleconferencing applications. At the same time other users may find themselves plunged into their usage, either by institutions or by government mandates, as adjustments for the control of the spread of the virus.

(g) Some factors as under study in this mid-70s investigation are of little interest today: variable display in the form of video frame rates is no longer achieved in that way, and indeed since the mid-70s great progress has been made in the creation of signal compression methods; black-and-white video signals are largely replaced by colour video signals, with the advantage of greater fidelity to “live” person perception for most people.

In 2020 we see increasing use of technologies for mediated communication (such as Zoom, Skype, FaceTime) during times of viral pandemic. New interpersonal practices emerge, such as: professionals consulting via teleconferences; students learning via distance education; industry teams collaborating online to advance shared projects; and family members sharing private time during separation necessitated by quarantine against viral transmission. We observe further evidence of human resilience and social adaptation to changes in our living environment.

Acknowledgements

The author wishes to acknowledge the support and advice of the following:

- Michael Argyle (1925-2002) who supervised my doctoral research and provided wise guidance as this work was undertaken in the Department of Experimental Psychology at the University of Oxford.
- Lloyd Strickland (Emeritus Professor, Carleton University) who for decades has been my mentor, friend, and inspiration in social psychology and mediated communication.
- Donald George and David Coll (both now deceased) who were prime movers and visionaries behind the Wired City Simulation Laboratory (WCSL) at Carleton University.
- The Canada Council (Doctoral Research Fellowship Award) and Department of Communication of the Government of Canada, who funded my graduate studies and the exploratory engineering facility of the WCSL.

Footnote:

Some additional details on the various studies comprising this doctoral thesis of Paul Guild, including further details on research methods, data analyses, appendices, and research instruments, can be downloaded as a PDF from the Bodleian Library of the University of Oxford, retrieved September 30, 2020:

- [Oxford University Research Archive \(ORA\)](#)
- <https://ora.ox.ac.uk/objects/uuid:068f5647-1485-4f72-97a0-8bbf045ed9dd>

A SELECTED BIBLIOGRAPHY FROM 1978 DOCTORAL THESIS

- ARGYLE, M., & COOK, M. *Gaze and mutual gaze*. Cambridge: Cambridge University Press, 1976.
- BALES, R. F. *Interaction process analysis: A method for the study of small groups*. Cambridge, Mass.: Addison-Wesley, 1950.
- BALES, R. F. The equilibrium problems in small groups. In T. Parsons, R. F. Bales, & E. A. Shils (Eds.), *Working papers in the theory of action*. Glencoe, IL: Free Press, 1953, 115-134.
- BALES, R. F. Task roles and social roles in problem solving groups. In E. E. Maccoby, T. M. Newcomb, & E. L. Hartley (Eds.), *Readings in Social Psychology*. New York: Henry Holt, 1958.
- BAVELAS, A. Communication patterns in task-oriented groups. *Journal of the Acoustical Society of America*, 1950, 22, 725-730.
- BAVELAS, A., HASTORF, A. H., GROSS, A. E., & KITE, R. W. Experiments on the alteration of group structure. *Journal of Experimental Social Psychology*, 1965, 55-70.
- BURROUGHS, W., SCHULTZ, W., & AUTREY, S. Quality of argument, leadership votes and eye contact in three-person leaderless groups. *Journal of Social Psychology*, 1973, 90, 89-93.
- CARTWRIGHT, D., & ZANDER, M. *Group dynamics: Research and theory*. Evanston, Ill.: Row, Peterson and Company, 1953.
- CHAPANIS, A. Interactive human communication. *Scientific American*, 1975, 232 (March), 36-42.
- CHAPANIS, A., OCHSMAN, R., PARRISH, R., & WEEKS, G. Studies in interactive communication I: The effects of four communication modes on the behaviour of teams during cooperative problem solving. *Human Factors*, 1972, 14, 487-509.
- DICKSON, E. M., & BOWERS, R. *The video telephone: A new era in telecommunications*. New York: Cornell University (prepared for National Science Foundation), June 1973.
- DUNCAN, S. Nonverbal communication. *Psychological Bulletin*, 1969, 72, 118-137.
- GUILD, PAUL D. Distance, gaze and the intimacy equilibrium in audio/video mediated dyads. *International Journal of Social Science and Technology*, ISSN: 2415-6566, 2020, 5(5), 20-42.
- GUILD, PAUL D. *Mediated Person-to-Person Communication: A Social Psychological Perspective*. Oxford: University of Oxford, 1978 (068f5647-1485-4f72-97a0-8bbf045ed9dd, retrieved September 30, 2020).
- HOWELLS, L. T., & BECKER, S. W. Seating arrangement and leadership emergence. *Journal of Abnormal and Social Psychology*, 1962, 64(2), 148-150.
- KENDON, A. Some functions of gaze direction in social interaction. *Acta Psychologica*, 1967, 26, 22-63.
- KIRSCHT, J. P., LODAHL, T. N., & HAIRE, M. Some factors in the selection of leaders by members of small groups. *Journal of Abnormal and Social Psychology*, 1959, 58, 406-408.
- MARCUS, P. M. Expressive and instrumental groups: Toward a theory of group structure. *American Journal of Sociology*, 1960, 66, 54-59.
- MORELY, I. E., & STEPHENSON, G. M. Interpersonal and inter-party exchange: A laboratory simulation of an industrial negotiation at the plant level. *British Journal of Psychology*, 1969, 60, 543-545.

- MORELY, I. E., & STEPHENSON, G. M. Formality in experimental negotiations: A validity study. *British Journal of Psychology*, 1970, 61, 383-384.
- MORRIS, C. G., & HACKMAN, J. R. Behavioural correlates of perceived leadership. *Journal of Personality and Social Psychology*, 1969, 13, 350-361.
- OAKES, W. F., DROGE, A. E., & AUGUST, B. Reinforcement effects on participation in group discussion. *Psychological Reports*, 1960, 7, 503-514.
- PEPINSKY, P. N., HEMPHILL, J. K., & SHEVITZ, R. N. Attempts to lead, group productivity and morale under conditions of acceptance and rejection. *Journal of Abnormal and Social Psychology*, 1958, 57, 47-54.
- REGULA, R. C., & JULIAN, J. W. The impact of quality and frequency of task contributions on perceived ability. *Journal of Social Psychology*, 1973, 89, 115-122.
- RICHARDSON, J. T., MAYHEW, JR., B. A., & GRAY, L. N. Differentiation, restraint and the asymmetry of power. *Human Relations*, 1969, 22(3), 263-274.
- SHEA, M., & ROSENFELD, H. M. Functional employment of nonverbal social reinforcers in dyadic learning. *Journal of Personality and Social Psychology*, 1976, 34(2), 227-239.
- SHORT, J., WILLIAMS, E., & CHRISTIE, B. *The social psychology of telecommunications*. New York: Wiley, 1976.
- SLATER, P. E. Role difference in small groups. *American Sociological Review*, 1955, 20, 300-310.
- SORRENTINO, R. M., & BOUTILLIER, R. G. The effect of quantity and quality of verbal interaction on ratings of leadership ability. *Journal of Experimental Social Psychology*, 1975, (5), 403-411.
- STEIN, R. T. Identifying emergent leaders from verbal and nonverbal communications. *Journal of Personality and Social Psychology*, 1975, 52(1), 125-135.
- STEIN, R. T., GEIS, F. L., & DAMARIN, P. Perception of emergent leadership hierarchies in task groups. *Journal of Personality and Social Psychology*, 1973, 25(1), 77-87.
- STEPHENSON, G. M., AYLING, K., & RUTTER, D. R. The role of visual communication in social exchange. *British Journal of Social and Clinical Psychology*, 1976, 15, 113-120.
- STRICKLAND, LLOYD H., GUILD, PAUL D., BAREFOOT, JOHN C., & PATTERSON, STUART A. Teleconferencing and leadership emergence. *Human Relations*, 1978, 31(7), 583-596. <https://journals.sagepub.com/doi/pdf/10.1177/001872677803100702>, retrieved September 30, 2020
- STRODTBECK, F. L., & MANN, R. D. Sex role differentiation in jury deliberation. *Sociometry*, 1956, 19, 3-11.
- TURK, H. H. Instrumental and expressive ratings reconsidered. *Sociometry*, 1961, 24, 76-81.
- WILLIAMS, E. A summary of the present state of knowledge regarding the effectiveness of substitution of face-to-face meeting by telecommunication meetings: Type allocation revisited. *Technical Report Communication Studies Group*, University College, London, 1974.
- WILLIAMS, E. Experimental comparisons of face-to-face and mediated communication: A review. *Psychological Bulletin*, 1977, 84(5), 963-976.