

Anonymity in Behavioural Research: Not Being *Unnamed*, But Being *Unknown*

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EMPIRICAL RESEARCH IN THE SOCIAL SCIENCES should help answer a crucial question: how does anonymity influence behaviour? A quick perusal of the literature, however, reveals that the answer provided by this research is far from simple. According to the empirical literature, "anonymity" has broad, varied, and inconsistent behavioural effects. A deeper reading reveals that the complexity of behavioural effects is matched by the complexity and variety in the empirical definitions of "anonymity." Analysis of empirical manipulations designed to operationalize the concept reveal that they reflect three distinct concepts: 1) identity protection (withholding of name or other unique identifiers); 2) visual anonymity (being unseen by communication partners); and 3) action anonymity (where the content and even existence of actions are unavailable to others). The first of these manipulations closely matches the traditional definition of anonymity, while the second and third relate more to being *known* (visually or by one's actions) than to being *identified*. Thus, in the context of behavioural research, anonymity is defined in two intertwined ways: as lacking unique identifiers and as being hidden from public scrutiny.

LA RECHERCHE EMPIRIQUE EN SCIENCES SOCIALES devrait aider à répondre à une question clé : quel est l'effet de l'anonymat sur le comportement? Un bref survol de la documentation révèle, toutefois, que la réponse qui se dégage de ces recherches n'est guère simple : les effets de l'anonymat sont nombreux, variés et incohérents. Une lecture plus attentive révèle que la complexité des effets de l'anonymat sur le comportement est comparable à la complexité et à la diversité des définitions empiriques du terme « anonymat ». L'analyse des manipulations empiriques visant à en opérationnaliser le contenu démontre qu'il existe trois concepts distincts : 1) la protection de l'identité (la dissimulation du nom ou d'autres identificateurs uniques); 2) l'anonymat visuel (la préservation de l'invisibilité aux yeux des partenaires en communication); et 3) l'anonymat des actes (la dissimulation aux autres à la fois du contenu des actes et des actes mêmes). La première de ces manipulations correspond à peu près à la notion traditionnelle de l'anonymat. La seconde et la troisième ont trait davantage à la connaissance de l'individu (visuellement ou par ses actes) qu'à son identification. Par conséquent, dans le contexte de la recherche sur le comportement, l'anonymat comporte deux définitions entrelacées : l'absence d'identificateurs uniques et la protection du soi contre l'examen public.

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1. INTRODUCTION

IN *THE REPUBLIC, BOOK II*,¹ Plato's brother Glaucon recounts the story of Gyges, in which a shepherd finds a ring with magical powers. If the tale ended when the ring was donned, rendering its wearer invisible, it would be merely a story of the fantastic. Instead, Glaucon goes on to tell how, under the cloak of invisibility, Gyges acts in ways he could not—or would not—if he were visible in the world: he seduces the queen, slays the king, and steals the kingdom. From this story, Plato draws the conclusion that we are *just* only when we cannot safely act otherwise: under the guise of anonymity, he claims, *anyone* would act in ways that are unjust.

In the story of Gyges, anonymity matters, and it matters as well in our everyday lives. There is no doubt that the issue of anonymity raises significant legal, philosophical, and policy considerations, including the question of whether anonymous communication can or should receive legal protection,² and whether the right to be anonymous is a necessary aspect of privacy.³ These considerations have taken on heightened importance given the advent of new technologies that have the potential both to support significant privacy intrusions⁴ and to enhance the ability of individuals to conceal their identity in online communications and other activities.⁵

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1. Plato, *The Republic*, trans. Benjamin Jowett (New York: Modern Library, 1982; Project Gutenberg, 1994), <<http://www.gutenberg.org/etext/150>>.
 2. A. Michael Froomkin, "Legal Issues in Anonymity and Pseudonymity" (1999) 15:2 *Information Society* 113 [Froomkin, "Anonymity and Pseudonymity"].
 3. Diane Rowland, "Anonymity, Privacy, and Cyberspace" (Paper presented to the 15th BILETA Conference "Electronic datasets and access to legal information" University of Warwick, Coventry, England, 14 April 2000), <<http://www.bileta.ac.uk/Document%20Library/1/Anonymity,%20Privacy%20and%20Cyberspace.pdf>>.
 4. *Ibid.*
 5. Froomkin, "Anonymity and Pseudonymity," *supra* note 2.

Anonymity also raises behavioural questions: specifically, how does anonymity influence our actions? The story of the Ring of Gyges is illustrative because it explores one way that behaviour might change when identity is hidden, but Gyges' are not the only acts we attribute to anonymity, nor do we believe that the behavioural consequences are uniformly negative in nature. "The anonymity of the internet" is regularly cited as a cause of antisocial behaviour in discussions of online pedophilia, sexual addiction, and acts of fraud. The same anonymity, however, is assumed to promote disclosure in online relationships and other instances of significant self-revelation. Furthermore, it is not just "online anonymity" that is perceived to have these important behavioural implications. We feel that the "anonymity of the city" leaves us lonelier, less connected to those around us, and less likely to provide assistance; at the same time, it frees us to "be ourselves." Thus, our collective wisdom suggests that we act differently when we cannot be identified. Collective wisdom, however, is not always correct, and the question of whether anonymity influences behaviour is in fact an empirical one.

The assumption that anonymity influences behaviour is widespread within the lay literature, and it has been explored extensively in behavioural research. That research reveals a surprising variety of empirically supported behavioural consequences. A short list might read as follows: anonymity has been demonstrated to: promote free speech; increase disclosure, including self-disclosure; promote equal contribution to discourse; reduce helping behaviour; increase aggression; increase socially undesirable behaviour, such as cheating; and reduce the feeling of personal responsibility. Each of these claims has at least some empirical support in the social science literature: that is, each of these claims has been borne out in at least some empirical research. It is equally true, however, to state that none of these claims is unequivocally supported. In at least some published cases (and undoubtedly many more unpublished ones, given the known bias in social sciences against publishing null results), anonymity has *failed* to elicit the identified behaviour.

Thus, research indicates that the link between anonymity and behaviour is both multifaceted and tentative. The variety of behavioural effects attributed to anonymity is astonishing, and no single effect receives consistent support across research contexts. There are many reasons why this situation might arise: not least among these is the reality that human beings and the contexts in which they interact are complex, and in any given situation a broad variety of individual, psychological, interpersonal, and situational factors come together to influence behaviour. But in the context of research on anonymity, another potential, and undoubtedly partial, explanation presents itself, revealed in the multifaceted answer to the following: What does it mean to be *anonymous*?

At one level, the answer to the question is simple: to be anonymous is to be *unidentified*. This interpretation is consistent with the original, and literary, use of the term: *anonymous*, which means "without name," is used to denote an unidentified author.⁶ But *anonymous* has a second common meaning, evident in

6. Anne Ferry, "Anonymity: The Literary History of a Word" (2002) 33:2 *New Literary History* 193.

the phrase "*the anonymity of the city*." This second interpretation, consistent with the works of Schutz⁷ and Simmel,⁸ reflects both social distance and a lack of distinction from the others around us. In this meaning of the term, *anonymity* refers to a state of interpersonal disconnectedness, similar in many ways to the state psychologists have termed *deindividuation*.⁹ The difference between these two senses of the word is important: in the first, anonymity contrasts with the condition of being *named*; in the second, it contrasts with the condition of being *known*. Moreover, there are multiple ways of being *known*: I am distinguished by my name, my face, and my actions, and each of these reveal important aspects of "who I am."

The situation is even more complex in empirical research. To examine empirically the influence of something requires that we create an *operational definition*. *Operationalization* is the process of specifying what we mean when we say, for example, that a couple is *in love*, that a television show depicts *aggression*, or, in the current case, that a person is *anonymous*. The decision regarding what constitutes, for the purposes of the research, "in love," "aggression," or "anonymity" (and, by extension, the conditions to which these are compared in the studies) constitutes an *operational definition*. The operational definition is, in the context of the research question, a *stand-in* for the concept of interest. We can't directly examine the impact of "being in love," or "watching aggression on television," or "being anonymous." Instead, we have to examine the impact of specific and tightly defined instantiations of these terms: "being in love" defined as feeling mutually attracted to one another; "aggression" defined as violent physical contact; or "anonymity" defined as not providing identifying personal information on a questionnaire. Thus, if we want to examine the impact of *anonymity* on behaviour, we must decide specifically what we mean by the term: not just whether *anonymity* means *lacking identification* or *lacking social relations*, but also precisely how lacking identity or lacking social relations is to be defined within the experimental context. Moreover, since the definition of anonymity is both broad and complex, it is likely that the collection of studies on the impact of anonymity on behaviour will in fact be assessing a variety of distinct causal factors.

Empirical research in the social sciences *should* help answer a crucial question: how does anonymity influence behaviour? A quick perusal of the literature, however, reveals that the answer is far from simple and unequivocal. "Anonymity" has broad, varied, and inconsistent behavioural effects. This paper explores one potential contributing factor: the possibility that "anonymity," far from being a monolithic concept, is in fact defined in multiple ways within the empirical literature.

7. Maurice Natanson, *Anonymity: A Study in the Philosophy of Alfred Schutz* (Bloomington: Indiana University Press, 1986).

8. Kurt H. Wolff, ed., *The Sociology of Georg Simmel* (New York: Free Press, 1964).

9. L. Festinger, A. Pepitone, & T. Newcomb, "Some Consequences of Deindividuation in a Group" (1952) 47 *Journal of Abnormal and Social Psychology* 382.

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2. OTHER CONCEPTIONS OF ANONYMITY

THIS IS NOT THE FIRST EXPLORATION into the multidimensional nature of anonymity. Marx¹⁰ identifies seven types of “identity knowledge” (anonymity being one polar value of a broad dimension of identifiability): name, locatability, identity-linked pseudonyms, unbreakable pseudonymity, pattern knowledge (knowledge of behaviour and other patterns), social categorization, and symbols of eligibility/noneligibility. Scott¹¹ distinguishes between source specification (the extent to which a source is distinguished from other possible sources; this concept conflates identification of the source with individuation of the communication, and in the first sense is similar to Marx’s name and locatability) and source knowledge (the degree of familiarity between the source and the receiver) in the context of communication. Valacich and colleagues¹² differentiate between two types of anonymity in group decision support systems: content anonymity, in which group members are identified to each other but the source of specific comments cannot be identified, and process anonymity, in which group members do not know the source of specific comments, and they also cannot identify the other members of the group. Pissoneault and Heppel¹³ examine anonymity in the context of Group Decision Support Systems (GDSS), focusing on the perceptions of participants; their results indicate that anonymity, in this context, has at least four different dimensions, including diffused responsibility, proximity of participants, knowledge of other members (similar to source knowledge as identified by Scott¹⁴), and confidence in the system (that is, the belief that identity is actually protected).

What differentiates the current effort from most others that have come before is the psychological focus of the investigation. In particular, this exploration of anonymity starts from the psychological and sociological research that has examined the impact of anonymity on behaviour, and gleans the various ways in which anonymity has been defined within that work. This approach is in fact closest to the work of Pissoneault and Heppel;¹⁵ but whereas their examination focused on the *perception* of anonymity by GDSS participants, this examination looks at *manipulations* of anonymity by empirical researchers. This

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10. Gary T. Marx, “What’s in a Name? Some Reflections on the Sociology of Anonymity” (1999) 15:2 Information Society 99, <<http://web.mit.edu/gtmarx/www/anon.html>> [Marx, “What’s in a Name?”].
 11. “Anonymous” [Craig R. Scott], “To Reveal or Not to Reveal: A Theoretical Model of Anonymous Communication” (1998) 8:4 Communication Theory 381 [“To Reveal or Not to Reveal”].
 12. Joseph S. Valacich, Alan R. Dennis & J. F. Nunamaker, Jr, “Group Size and Anonymity Effects on Computer-Mediated Idea Generation” (1992) 23:1 Small Group Research 49 [Valacich, Dennis & Nunamaker, “Group Size and Anonymity Effects”]; Joseph S. Valacich et al., “Conceptual Framework of Anonymity in Group Support Systems” (1992) 1:3 Group Decision and Negotiation 219 [Valacich et al., “Anonymity in Group Support Systems”].
 13. Alain Pinsonneault & Nelson Heppel, “Anonymity in Group Support Systems Research: A New Conceptualization, Measure, and Contingency Framework” (1998) 14:3 Journal of Management Information Systems 89 [Pinsonneault & Heppel, “Anonymity in Group Support Systems Research”].
 14. “To Reveal or Not to Reveal,” *supra* note 11.
 15. Pissoneault & Heppel, “Anonymity in Group Support Systems Research,” *supra* note 13.

is far from the only way to define the term, and this is not even the most defensible; but this particular exploration assures us of one very important fact: the aspects of anonymity identified will be those that have, or are at least thought to have, psychological reality. In particular, this means that the aspects of anonymity we identify through this method are very good candidates for the sorts, types, or flavours of anonymity that influence behaviour.

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3. ANONYMITY IN NAME

Yet thou hast said, I know thee by name.

—Exodus, 33:12, Bible, King James Version

THERE IS A LARGE BODY of behavioural research that examines the impact of anonymity defined as *not providing identifying information*. Anonymity in this sense is typically contrasted with confidentiality (identifying information collected but protected) or full identifiability (identifying information collected and *not* protected). This is similar to the traditional literary meaning of the term, and also similar to Marx's¹⁶ "name" and "locatability," and one sense of Scott's¹⁷ "source specification." Typically, the behaviour examined in this type of research is *information provision*—personal information (demographic, behaviour), information about beliefs or attitudes (attitude assessment would fall into this category, as would many forms of evaluation such as teaching evaluation), or information about others that is known to the subject (whistleblowing is one salient example). In contrast to much of the other behavioural research regarding the impact of anonymity, the manipulation or comparison in this research explicitly identifies whether information is provided or not, and the behaviour examined is similarly well defined, restricted to the issue of whether the participant does or does not provide accurate report of additional, non-identifying, information as requested.

In these studies, anonymity typically leads to a greater, and presumably more honest, reporting of a variety of behaviours, including cheating,¹⁸ and the use of tobacco, alcohol, marijuana, and other drugs.¹⁹ Anonymity also leads to

16. Marx, "What's in a Name?" *supra* note 10.

17. "To Reveal or Not to Reveal," *supra* note 11.

18. Anthony D. Ong & David J. Weiss, "The Impact of Anonymity on Responses to Sensitive Questions" (2000) 30:8 *Applied Social Psychology* 1691 [Ong & Weiss, "The Impact of Anonymity"].

19. Thoroddur Bjarnason & Adalbjarnardottir Sigrun, "Anonymity and Confidentiality in School Surveys on Alcohol, Tobacco, and Cannabis Use" (2000) 30:2 *Journal of Drug Issues* 335; Janet H. Malvin & Joel M. Moskowitz, "Anonymous Versus Identifiable Self-Reports of Adolescent Drug Attitudes, Intentions, and Use" (1982) 47:4 *The Public Opinion Quarterly* 557; Chudley E. Werch, "Two Procedures to Reduce Response Bias in Reports of Alcohol Consumption" (1990) 51:4 *Journal of Studies on Alcohol* 327.

less distortion of other personal information, including information about household income²⁰ and even place of birth.²¹ These differences are consistent with research indicating that social anxiety and social desirability are reduced under anonymous, as opposed to identified, response.²²

This form of anonymity appears to be an important consideration in whistleblowing, since individuals who are offered the option of withholding their name and other identifying information are more likely to report wrongdoing.²³ In this case, however, anonymity does not have a purely salutary effect, since there is some evidence that whistleblowing reports by anonymous informants may be less accurate than reports by those who provide identifying information.²⁴ Furthermore, there is some indication that anonymous and non-anonymous whistleblowing might be driven by different considerations, since in one study the likelihood of whistleblowing was related to negative interpersonal relationships for anonymous, but not identified, report.²⁵

Identity anonymity also influences evaluation reports. Students generally report more negative teacher evaluations when anonymous rather than identified.²⁶ The assumption is that anonymity reduces the possibility of retaliation, and thus students, who are in a position of relative powerlessness when compared to teachers, can be more honest in the anonymous condition. Here too, however, there is some evidence that anonymity changes not only the content but the actual *basis* of evaluation.²⁷

The effect of this type of anonymity is both relatively simple and predictable. We tend to withhold or bias information about ourselves when we are identified and we perceive that revelation might have a negative effect. Stigmatized behaviours, such as cheating, lying, or consuming alcohol or drugs, are typically under-reported when respondents are identified by name or other unique identifier. Concern about retaliation will lead to biased information report in non-anonymous conditions, and social desirability will also lead respondents to distort information when they are identified. When anonymity is provided in the form of identity protection, these reporting biases are reduced

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20. Roger A. Kerin & Rober A. Peterson, "Personalization, Respondent Anonymity, and Response Distortion in Mail Surveys" (1977) 62:1 *Journal of Applied Psychology* 86.
 21. Ong & Weiss, "The Impact of Anonymity," *supra* note 18.
 22. Adam Joinson, "Social desirability, anonymity, and Internet-based questionnaires" (1999) 31:3 *Behavior Research Methods, Instruments, and Computers* 433.
 23. Dishan A. Kamdar, Ho-Beng Chia & Glenn J. Nosworthy, "Good Organizational Citizens vs. Good Social Citizens: The Impact of Motives and Anonymity on Whistleblowing Intentions" (Paper presented to the 25th International Congress of Applied Psychology, Singapore, 7-12 July 2002), <<http://www.iaapsy.org/25icap/common/OP555.htm> [Kamdar, Chia & Nosworthy, "Good Organizational Citizens"].
 24. Alan R. Price, "Anonymity and Pseudonymity in Whistleblowing to the U.S. Office of Research Integrity" (1998) 73:5 *Academic Medicine* 467; Susan J. Zuravin, Brenda Watson & Mark Ehrenschaft, "Anonymous Reports of Child Physical Abuse: Are They as Serious as Reports From Other Sources?" (1987) 11:4 *Child Abuse and Neglect* 521.
 25. Kamdar, Chia & Nosworthy, "Good Organizational Citizens," *supra* note 23.
 26. Engene F. Stone, Mark D. Spool, & Samuel Rabinowitz, "Effects of Anonymity and Retaliatory Potential on Student Evaluations of Faculty Performance" (1977) 6:4 *Research in Higher Education* 313.
 27. Royce R. Ronning & Ursula R. Walsh, "Effects of Student Anonymity-Nonanonymity on the Factor Structure of a Teacher Rating Form" (1977) 6:4 *Research in Higher Education* 363.

or even eliminated. At the same time, however, there is some evidence that this form of anonymity may change the basis for evaluative report, and make informants less careful about reporting negative information regarding others.

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4. ANONYMITY AS BEING UNSEEN

You have a thousand wake faces and you can pick any wake face you want.
But your sleep face is when you are you, and if you could see your sleep face
you would say, "Of all my thousand faces, this one is Me."

–Carl Sandburg²⁸

IN THIS EXCERPT, CARL SANDBURG captures the sense that our face, particularly our unguarded face, is a "window" to ourselves. It is not surprising, therefore, that in some research anonymity is defined as being unseen (and particularly having the face unseen), and contrasted with the condition where the person is visible.

Some researchers have asked the question of how interaction changes when participants can see each others' faces. Joinson²⁹ compared Computer-Mediated Communication (CMC) in text and videoconferencing formats, and found participants less likely to reveal personal information when they could see and be seen by their conversational partners. Barreto & Ellemers and Sassenberg & Postmes³⁰ contrasted anonymity with a condition where participants had their pictures taken and were told they would be shown to other group participants.³¹ Lea, Spears and de Groot³² compared traditional text-based CMC with the same communication augmented by a silent video connection. Thus, in some behavioural research, anonymity is defined as a situation where communication partners *do not* see one another, contrasted with visibility of the self to others *and* others to the self. Although these studies share a common manipulation of anonymity, they differ in the behavioural effects they examine, making it difficult to generalize about the effects of visual anonymity on behaviour.

There is, however, a long tradition of research in the social sciences

28. Carl Sandburg, *From Daybreak to Good Night: Poems for Children* (Toronto: Annick Press, 2001).
29. Adam N. Joinson, "Self-Disclosure in Computer-Mediated Communication: The Role of Self-Awareness and Visual Anonymity" (2001) 31 *European Journal of Social Psychology* 177, <<http://iet.open.ac.uk/pp/a.n.joinson/papers/self-disclosure.PDF>>.
30. Manuela Barreto & Naomi Ellemers, "The Impact of Anonymity and Group Identification in Computer-mediated Groups" (2002) 33:5 *Small Group Research* 590 [Barreto & Ellemers, "The Impact of Anonymity"]; Kai Sassenberg & Tom Postmes, "Cognitive and Strategic Processes in Small Groups: Effects of Anonymity of the Self and Anonymity of the Group on Social Influence" (2002) 41:3 *British Journal of Social Psychology* 463.
31. Barreto & Ellemers, "The Impact of Anonymity," *ibid*.
32. Martin Lea, Russel Spears & Daphne de Groot, "Knowing Me, Knowing You: Anonymity Effects on Social Identity Processes Within Groups" (2001) 27:5 *Personality and Social Psychology Bulletin* 526.
33. Henry Solomon *et al.*, "Anonymity and Helping" (1981) 113:1 *Journal of Social Psychology* 37 [Solomon *et al.*, "Anonymity and Helping"].

examining the effect of visibility (both of self and other) on helping behaviour³³ and aggression.³⁴ When we can be seen, and when we can see the individual who requires assistance, we are more likely to help. Thus, visibility of the *other* influences helping behaviour—when we see someone who needs our assistance, we are more likely to provide it, even if additional identifying information is not offered.³⁵ We are also more likely to help if we feel we are visually identifiable by victims or by bystanders.³⁶ Visibility (both of self and other) also reduces aggressive behaviour. Thus, for example, aggressive driving is less prevalent when drivers are visible than when they are hidden.³⁷ Although these effects undoubtedly depend, at least in part, on the engagement of social relations (since people who can see each other are also likely to interact), they hold even when it is only pictures that are shared, without any other form of social interchange. Furthermore, although faces obviously provide information that is relevant to identification, the impact of “seeing,” or “being seen,” does not appear to rest solely on the potential that someone who is seen can be named: the effects are observed in a wide variety of contexts where actual identification seems unlikely (e.g., in otherwise anonymous groups of unrelated individuals who have no reason to think that they will meet directly in the future). Instead, seeing someone else and being seen ourselves, seem to move us from the condition of being “nameless, faceless individuals” to being *people*. It seems, therefore, that when we see one another our awareness of both ourselves and others as individuals is increased.

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5. ANONYMITY OF ACTION

You can know the name of a bird in all the languages of the world, but when you're finished, you'll know absolutely nothing whatever about the bird.... So let's look at the bird and see what it's doing—that's what counts. I learned very early the difference between knowing the name of something and knowing something.

—Richard Feynman³⁸

WHETHER WE ARE IDENTIFIED OR NOT, we have a sense of commitment to and responsibility for our actions, particularly when those actions are seen by others. It is for this reason that a pratfall in the subway is embarrassing: even if there is

34. Stanley Milgram, “Some Conditions of Obedience and Disobedience to Authority” (1965) 18:1 *Human Relations* 57.
35. Rose M. Perrine & Stacie Heather, “Effects of Picture and Even-a-Penny-Will-Help Appeals on Anonymous Donations to Charity” (2000) 86:2 *Psychological Reports* 551.
36. Solomon *et al.*, “Anonymity and Helping,” *supra* note 33.
37. P.A. Ellison, J.M. Govern, H.L. Petri & M.H. Figler, “Anonymity and Aggressive Driving Behavior: A Field Study” (1995) 10:1 *Journal of Social Behavior and Personality* 265; Patricia Ellison-Potter, Paul Bell & Jerry Deffenbacher, “The Effects of Trait Driving Anger, Anonymity, and Aggressive Stimuli on Aggressive Driving Behavior” (2001) 31:2 *Journal of Applied Social Psychology* 431.
38. R. Feynman, “What is Science?” (1968) 7:6 *The Physics Teacher* 313.

no real possibility of identification, there is the sense the fall gives a bad impression, perhaps because it is assumed that this act, as all others, contributes to one's social identity.³⁹ People feel known, therefore, by their actions, and the individuated and connected history of those actions forms one's reputation.

Under conditions of complete anonymity, each act is dissociated not only from the actor, but also other acts of that same individual. Postmes and Spears note this aspect of anonymity in passing, though it is not the focus of their anonymity manipulation:

During the discussion, groups [sic] members were identified by the nicknames green, blue, yellow, and red. This ensured that during the discussion, contributions could be attributed to one of the group members without revealing of identity or gender. The identification with a color meant that even in the depersonalized condition, anonymity was not absolute.⁴⁰

They contend that "complete" anonymity would preclude the use of pseudonyms, since these serve to associate acts (e.g., statements in a communication context) with each other and with a single actor, even if that actor cannot be explicitly identified.

In studies of computer-supported decisionmaking, pseudonymous actors are often conceptualized as "anonymous," and compared to those who are fully identified.⁴¹ This is essentially an identifiability manipulation as defined above, contrasting named with unnamed actors. A small number of studies, however, examine behaviour under conditions of anonymity that protect not only the identity of the actor but also the fact and/or content of their actions. Thus, Barreto and Ellemers distinguish between visible and non-visible action, and Fox and Guyer compare behaviour in the Prisoner's Dilemma game when decisions are made public or kept private.⁴² A number of studies examined the effect of CMC in groups who know each other outside the communication context, distinguishing a condition in which comments were completely unattributed (anonymous) from one in which they were correctly attributed to specific identified individuals.⁴³ In these studies, the anonymity manipulation confounded identity and action anonymity. The same manipulation has been

39. Dacher Keltner & Brenda N. Buswell, "Embarrassment: Its Distinct Form and Appeasement Functions" (1997) 122:3 *Psychological Bulletin* 250.

40. Tom Postmes & Russell Spears, "Behavior Online: Does Anonymous Computer Communication Reduce Gender Inequality?" (2002) 28:8 *Personality and Social Psychology Bulletin* 1073 at p. 1078 [Postmes & Spears, "Behavior Online"].

41. Starr Roxanne Hiltz, Murray Turoff & Kenneth Johnson, "Experiments in Group Decision Making, 3: Disinhibition, Deindividuation, and Group Process in Pen Name and Real Name Computer Conferences" (1989) 5:2 *Decision Support Systems* 217; Postmes & Spears, "Behavior Online," *ibid.*; Bruce A. Reinig & Roberto J. Mejias, "The Effects of Culture and Anonymity on Flaming and Criticalness in GSS-Supported Discussions" (2004) 35:6 *Small Group Research* 698.

42. Barreto & Ellemers, "The Impact of Anonymity," *supra* note 30; John Fox & Melvin Guyer, "Public Choice and Cooperation in N-Person Prisoner's Dilemma" (1978) 22:3 *Journal of Conflict Resolution* 469.

43. Leonard M. Jessup, Terry Connolly & Jolene Galegher, "The Effects of Anonymity on GDSS Group Process with an Idea-Generating Task" (1990) 14:3 *MIS Quarterly* 313; Leonard M. Jessup & David A. Tansik, "Decision Making in an Automated Environment: The Effects of Anonymity and Proximity with a Group Decision Support System" (1991) 22:2 *Decision Sciences* 266; Valacich et al., "Anonymity in Group Support Systems," *supra* note 12.

used in groups whose participants are unknown to each other outside of the experimental context.⁴⁴

Sets of actions linked to the same individual form a reputation. When that individual is *identified* in the sense of having a real-world locatability, then the reputation is a real-world one. When that individual is pseudonymously identified, that is, has only an enduring pseudonym, then the reputation is pseudonymous. There is good reason to believe, however, that even pseudonymous reputations matter to their owners, who, identified or not, know themselves to be the source of the actions and thus the target of any reputation those actions support. Obviously, reputation has an *instrumental* value—it allows, for example, trust in trading on eBay. But reputation also has *psychological* value, since what others think about my actions is in some sense what they think about me. Action anonymity frees the actor from any concern about reputation, while the absence of action anonymity, in which actions are attributed to an individual, raises this psychological concern—even when the *identity to which actions are attributed is pseudonymous*.

Anonymity of action has been explored less often in experimental research than have identity and visual anonymity; nonetheless, it is obviously recognized as an important concept. Valacich and colleagues⁴⁵ explicitly note this type of anonymity in their conceptualization, terming it *content* anonymity. This type of anonymity becomes particularly important in the context of CMC, since the possibility of enduring and unbreakable pseudonyms offers the opportunity for reputation, based on the history of action attributed to the pseudonym, without identification. This possibility throws into sharp relief the importance of reputation: both of *having* reputation, which is the basis of trust in many online interactions, and of having a *good* reputation, which makes clear that enduring pseudonymous identities would at times benefit from anonymous action in exactly the way “real” identities would. Actions that are unlinked to identity—in any form—provide the action with the maximum freedom and the minimum accountability.

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6. CONCLUSION

AS THIS ANALYSIS MAKES CLEAR, behavioural scientists define *anonymity* in a variety of different ways; moreover, the evidence suggests there may be distinct behavioural effects depending on which type of anonymity is examined.

Identity protection, which takes the form of withholding name or other identifying information, is typically examined in the context of information provision. This form of anonymity appears to have relatively clear and predictable behavioural consequences: under identity protection, people are

44. Terry Connolly, Leonard M. Jessup & Joseph S. Valacich, “Effects of Anonymity and Evaluative Tone on Idea Generation in Computer-Mediated Groups” (1990) 36:6 *Management Science* 689; M. Lea & R. Spears, “Computer-Mediated Communication, De-Individuation and Group Decision Making” (1991) 34:2 *International Journal of Man-Machine Studies* 283.

45. Valacich et al., “Anonymity in Group Support Systems,” *supra* note 12.

more likely to reveal sensitive information, and more likely to be honest in their self-disclosure.

Visual anonymity is explored in the context of interpersonal interaction, and the manipulation takes several forms that are consistent with one another, in that under visual anonymity the faces of participants are unseen by others. Although it is far more difficult to extract a general theme from these studies, seeing the faces of others appears to increase our awareness of them as individuals, and knowing that we ourselves are similarly visible appears to increase our awareness of our own individuality. As a result, visual anonymity tends to decrease interpersonal commitment (though it is perhaps clearer to say that seeing another *increases* this commitment), resulting in a greater willingness for self-revelation (e.g., "confessional" disclosures, promoted in part because the potential consequences of such disclosures are reduced when there is decreased interpersonal commitment), higher levels of aggression, and a lower level of interpersonal helping behaviour.

Action anonymity holds when actions either cannot be seen, or cannot be individuated. Although this form of anonymity has been recognized as critical by a number of researchers, it has rarely been independently manipulated in experimental research, and those studies that have examined it look at a broad range of behavioural implications, making it difficult to generalize the findings. It is clear, however, that action anonymity precludes actions from contributing to reputations (of either real or pseudonymous identities), and thus anonymity of action provides the greatest freedom paired with the lowest level of accountability.

Much of the behavioural research manipulates more than one of these types of anonymity, or fails to distinguish between manipulations that are critically different from one another. Thus, for example, Kahai, Sosik and Avolio⁴⁶ examine the impact of anonymity on creativity in group decision-support systems, comparing a condition where comments are tagged with the name of the participant to an undefined non-anonymous condition. If the alternative is *untagged* comments, then the anonymous participants benefit from both identity and process anonymity. If, by contrast, the alternative is *pseudonymously tagged* comments, then those participants are anonymous only with respect to identity, and not with respect to process (the interconnected history of their contributions). The difference, moreover, is likely to have important behavioural effects.

Other behavioural research conflates anonymity with factors that are not related to the manipulation of identity information. Thus, for example, Sassenberg and Boos⁴⁷ examine the impact of "anonymity" on attitude change. In their research, however, "anonymity" is defined as text-based CMC using

46. Surinder S. Kahai, John J. Sosik & Bruce J. Avolio, "Effects of Leadership Style, Anonymity, and Rewards on Creativity-Relevant Processes and Outcomes in an Electronic Meeting System Context" (2003) 14:4-5 *The Leadership Quarterly* 499.

47. Kai Sassenberg & Margarete Boos, "Attitude Change in Computer-Mediated Communication: Effects of Anonymity and Category Norms" (2003) 6:4 *Group Processes and Interpersonal Relations* 417.

pseudonyms, and compared to face-to-face (F2F) communication for its effects on attitude change. While the two conditions clearly differ in visual anonymity, as defined in the current discussion, there are many other differences, including the presence or absence of non-verbal communication cues. In this experimental design, effects attributed to “anonymity” might just as well be due to any of the multiple confounded factors.

There is a small amount of research that explicitly contrasts the various types of anonymity. Baretto and Ellemers,⁴⁸ for example, manipulate visual anonymity and a form of process anonymity (responses either seen or not seen by other participants) within the same experiment, allowing them to evaluate the joint and separate effects of these two types of anonymity on collaborative work. Scott⁴⁹ similarly manipulated these two types of anonymity separately, contrasting visual anonymity (participants were hidden from one another or were visible to one another) and discursive anonymity (comments were signed or unsigned). Although these types of investigations are relatively few in number, they serve an important function. When the various “ways of knowing” are tested separately, the independent contribution of each to various aspects of behaviour can be determined.

Anonymity is the condition of being unidentified; however, this examination of the empirical literature reveals that what has been shown to drive behaviour is not simply whether I am or am not *identified*, but rather, whether I do or do not feel *known*. This review explicates three different ways in which individuals have been made (in empirical research) to feel known: by name (or other unique identifier), by being seen, and by history of action. The traditional sense of anonymity, that of unnamed authorship, includes all of these characteristics. In unmediated everyday interactions, many of these aspects are necessarily linked. Thus, for example, it is possible to protect identity information in face-to-face interactions, but far less possible to provide any form of visual anonymity, and virtually impossible to provide what has variously been termed process, discourse, or action anonymity. In computer-mediated interactions, however, these aspects of anonymity have greater independence, and they can be separately manipulated or instantiated. Thus it would be possible to have, for example, identity anonymity and action anonymity but lack visual anonymity. This situation would hold in a computer-mediated workgroup of individuals who are otherwise unknown and unidentified to each other, but who are linked in a videoconferencing network that shares images but does not allow each participant to identify the specific contribution of any other.

Given that these forms of anonymity are relatively independent in the online context, it is worth both examining and considering their separate and joint behavioural consequences. For example, if breaching visual anonymity without breaching identity anonymity was shown to have the salutary effect of

48. Barreto & Ellemers, “The Impact of Anonymity,” *supra* note 30.

49. C.R. Scott, “The Impact of Physical and Discursive Anonymity on Group Members’ Multiple Identifications During Computer-Mediated Decision Making” (1999) 63:4 *Western Journal of Communication* 456.

increasing interpersonal commitment—without at the same time reducing the accuracy of informational report—it should be possible to take advantage of these effects in the design of, for example, computer-mediated whistleblowing systems, that offer freedom from retaliation (through identity anonymity) paired with an enduring sense of social responsibility.

As a final note, it is important to recognize that the types of anonymity identified here are in no way meant to represent an exhaustive categorization; nor are the aspects of anonymity identified assumed to be the only ones that have psychological importance. In particular, there can be no doubt that “anonymity” is not an all or nothing condition, and obviously one can only speak of being anonymous (in any of the ways discussed here) at a particular time and with reference to a particular person or a group of people. The fact that the published empirical literature identifies anonymity in at least these three different ways attests only to the behavioural importance of *these* forms of anonymity and in no way suggests that other aspects or types of anonymity are not influential.

