

Rules of Etiquette, or How a Mannerly AUI should Comport Itself to Gain Social Acceptance and be Perceived as Gracious and Well-Behaved in Polite Society.

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INTRODUCTION

Since this is a AAAI symposium and the emphasis is on developing an emerging discipline and on sharing ideas and defining issues, I am going to allow myself the luxury of avoiding the narrow confines of reporting research results. Instead, I'm going to take a wild stab at boiling down my research, experience and knowledge of the work of others, to pose a list of 'etiquette rules' by which AUIs should live. I claim that such a list is needed, and quickly, if AUIs are to be accepted into society rather than be regarded as social boors, misfits or simpletons who really can't help themselves (remind anyone of a paper clip we all know—and most of us loathe?)

WHY ETIQUETTE?

When an interface takes it upon itself to decide when and how I need what kind of information, it is entering into an ancient social structure that, until very recently, has been purely the province of humans. We've evolved information exchange rules over millennia that govern that structure. It would only be polite for any newcomer who wants to participate in that structure to play by those rules. "The Rules" (which, of course, are not always followed) about how to behave well in information exchanges in polite conversation, are a subset of etiquette rules.

Etiquette rules are rarely created whole cloth by the Emily Posts or Miss Manners of the world. Instead, they attempt to observe good practices already existing in 'polite society' and then formulate them for explication to others and/or infer from existing practices to propose practices for new situations thereby extending good practice into novel

domains.

By proposing etiquette rules for AUIs to follow, we should take a similar approach: observe good information exchange practices between humans and humans, or between humans and those AUIs that already exist, and attempt to both explicate good practices for others to follow and to extend and generalize good practices to novel domains and situations.

It's important to remember that etiquette rules don't always have to be followed. Furthermore, there may be times and situations where the conscious and systematic violation of etiquette is highly useful. Nevertheless, consistent violation of them relegates one to a frequently undesirable position in society. We don't claim that every AUI should adhere to the same etiquette—just that most should try.

Finally, in posing etiquette rules, I have tried to ignore practical constraints. The rules of etiquette proposed below should be viewed as goals. It's entirely acceptable to ignore some of these rules in the process of developing and researching AUI technology—just as we tolerate (and even laugh at) social gaffs from children. But if AUIs are to 'grow up' and take their place in our society, they should do their best to play by the rules.

PRECEDENTS

There's a lot of precedent for such a list. In 1967, H. P. Grice provided a list of rules or 'maxims' for "conversational implicature"—by which he meant, how to decide which of the set of grammatically correct statements that could be made at any point in a specific conversation should be ruled in or out by a well-intentioned, cooperative

conversant. These still serve as good guidelines for any form of information exchange. These include (Grice, 1975):

- *Maxims of Quantity*: Make your contribution as informative as is required for the current purpose of the exchange, but not more so.
- *Maxims of Quality*: Make your contribution true. Don't say [as true] what you know to be false. Don't say [as true] that for which you lack adequate evidence.
- *Maxims of Relation*: Be relevant [contribute to the advancement of the current conversational goals].
- *Maxims of Manner*: Be perspicuous—avoid obscurity of expression, avoid ambiguity, avoid prolixity, be orderly.

One of the first large-scale applied AUI projects, the Lockheed and the USAF's Pilot's Associate program, began their effort by drafting and agreeing upon a set of 10 commandments for good behavior from their associate in the fighter piloting domain. This list was summarized in two 'super-commandments': (1) The Pilot is always in charge, and (2) The effort required of the pilot to control the associate must be less than the effort saved by the associate.

My own recent work on the Rotorcraft Pilot's Associate program took the notion of the behaviors a bit further and asked pilots and engineers to weight, using Saaty's (1977) paired comparison technique, the relative importance of each of several behaviors that the raters had previously agreed were design goals for the Cockpit Information Manager (CIM). The results of these ratings are included in Miller, 1999. Furthermore, we then designed the CIM to make use of these ratings to perform behavioral tradeoffs in determining when, whether and how to adapt interface behaviors (see Miller, 1999 for a description). A tactic which not only seemed to have resulted in good user acceptance, even when the system made mistakes, but also provided a ready-made approach to tunability according to individual user preferences.

MY LIST

Here's my tentative list of etiquette rules for AUIs, based on and generalizing the precedent lists described above and attempting to fold in lessons learned from mine and others' experiences. As discussed below, this list is evolving and changing. It is intended to provoke discussion more

1. Make many, many correct conversational moves for every error made
2. Make it very, very easy to override and correct your errors
3. Know when you are wrong—the easiest way to do this is to let the human tell you—and then get out of the way.
4. Don't make the same mistake twice
5. Don't show off—Just because you can do something, doesn't always mean you should.
6. Be able to talk explicitly about what you're doing and

why—humans spend a lot of time in meta-communication activities facilitating coordination, especially in distributed work environments.

7. Make use of multiple modalities and information exchange channels redundantly; understand the implications of your communications on *all* the levels on which it operates.
8. Don't assume every user is the same—be sensitive to and adapt to individual, cultural, social, contextual differences
9. Be aware of what the user knows—especially if s/he knows it because you recently conveyed it (i.e., don't repeat yourself).
10. Be cute only to the extent that it furthers your conversational goals.

THE VERY IDEA . . .

Let's distinguish between the idea that there ought to be a list of etiquette rules for AUI behavior and the specific list I tossed off above. That list is intended as the starting point for a discussion and series of inquiries whose endpoint might be a full understanding of proper AUI behavior across a wide variety of domains and applications. We can, and should, argue about whether that set of etiquette rules is right or complete—and I suspect that the discussion about what works and what doesn't in different contexts will be informative.

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