The impossible task of dialog analysis in chatboxes

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Abstract

This paper investigates the potential use of the techniques used in dialog analysis for the analysis of chatbox dialogs, and focuses on the problems that arise in that respect. A general introduction to chatboxes in general and the chatbox used in the investigation in particular is followed by a summary of typical features of chatbox dialogs that set them apart from regular dialogs. Lastly, the paper lists a variety of issues that make dialog analysis in chatboxes a near-impossible task.

1. Introduction

1.1 Assumptions about conversations

In a face-to-face conversation or a telephone conversation, there are several assumptions all parties involved can make about the other. For instance, when a participant asks a question, he or she can expect the other participant(s) to understand the question and provide an answer within reasonable time. Participants will also conform to certain rules, both linguistic and social, and they will (usually) not speak while another participant is speaking. It is also assumed that all participants can tell who a speaker is addressing from the message itself, or from nonverbal communication.

It is on such assumptions that NLP relies. To apply NLP techniques to any medium, including the chatbox medium, there must therefore be a number of rules that any dialogue follows, manifesting in a definable pattern to the dialogue. Without a pattern, it is useless to attempt applying a technique for analyzing the conversation.

1.2 Online chat

A very common means of communication on the Internet is the exchange of written messages. There are many different forms and variations on the theme, a casual selection being MSN Messenger, ICQ, AIM, Jabber, Yahoo, Gadu-Gadu, Tlen and Netsend. All of these are different from each other, but they have one thing in common: they allow text to be sent instantaneously from one client to another. For this reason, chatting on the Internet is commonly referred to as Instant Messaging (IM). Typically, IM programs focus on one-on-one conversations, sometimes augmented by the exchange of visual information by means of a webcam. This paper does not directly deal with these forms of communication. Instead, it focuses on true chatboxes, which are best described as multi-user IM.

The chatbox this paper will examine is Internet Relay Chat (IRC). IRC was created in 1988, and is the oldest chat protocol that is still being widely used. The reason for this is that it is a powerful medium, capable of handling thousands of users, all in the same chat if need be. Also, because IRC is open-standard, anyone can create a client for it, with as many or as few features as needed. This allows for a wide range of possibilities. So-called bots may be set up to connect to an IRC network. Bots are IRC clients that aren't being directly used by a human user to access the chat network. Instead they run scripts to gather information from, supply information to, or interact with a chatbox. An example is a news tracker that gathers news headlines from the Internet, broadcasts them into an IRC chatbox and accepts requests for more information on a particular news topic. For more detailed, technical information about IRC and its protocol, see the protocol specifications [1].

However, the main point of this paper is not to examine IRC as a medium. Rather, it tries to examine a number of characteristics of chat communication that are especially apparent on this medium.

Some passages in this paper refer to an example chat conversation. This example chat has been included in appendix A. The numbers between braces refer to the correspondingly numbered dialog acts in the example chat. Note that some of the system messages inherent to IRC are not present in this log.

1.3 Chat and media richness

Media Richness Theory says something about the ability of a medium to convey information. The richer a medium is, the more information can be processed at a time. As stated in [8] (Kil Soo Suh , 1998), the richest medium available is face-to-face conversation, as this type of interaction allows for immediate feedback as well as non-verbal communication. By comparison, a written letter is not very rich at all because it takes days to reach its audience and because there is no form of feedback available when the letter is actually written.

Chat conversations are clearly somewhere in between these examples. While not as rich as face-to-face or even remote vocal communication, it is real-time and therefore richer than a written letter. Kil Soo Suh provides a table of various media on a richness scale. A chat conversation would fit into this table as moderate to high media richness; richer than written memos but poorer than telephone conversations. Kil Soo Suh's study confirms the latter (as the synchronous mail medium in his study can be considered a form of chat), but does not say anything about the former.

1.4 IRC mechanics

A chatbox on IRC is called a channel. One or more users can be in a channel, and each user has a unique name by which he or she is known. This is commonly called a nickname, or nick for short. All users can see which other users are in a channel they are in at any time. Users communicate by typing in a piece of text in their clients, and sending it to the channel. The text will then be added to the channel, and is visible for all.

Every channel has a topic. The topic is a string associated with the channel which will be sent to every user that joins the channel, and to all the users in the channel when the topic is changed. Every user may also access the topic at any time they wish. Topics often act to define the purpose for the channel or to direct users to places on the Internet that are relevant to the channel's purpose, but they are also frequently used by users to leave a message for other users. The topic influences the actual topic that the channel is all about far less than the name of the channel. Often, the name of the channel is descriptive of the purpose of the channel. Nevertheless, even that does in no way restrict the users to talk about that topic or related topics. Users can (and do) talk about anything and everything. Rather, a channel name indicates an interest common to all the users in a channel.

A channel has a number of flags. The exact flags and their effect depend on the server, but a few common flags are:

- +m (the channel is moderated, meaning only ops and voices may talk)
- +t (only operators may change the topic)
- +i (users may only join a channel if they have been invited in)
- +n (no messages may be sent from outside the channel)
- +s (the channel does not show up on the list of channels on the network)
- +k (people need to supply the correct password to join a channel).

A channel exists from the moment the first user joins, and normally ceases to exist when no users are left. On most networks, a channel may be registered with the system services. This has several benefits, one of them being that the channel will continue to exist until a set period of time after the last time a user who is registered as an owner was in the channel.

Each user is one of three possible user types.
First there are normal users. Normal users can only send text to the channel; they have no other control over it. Normal users cannot send text to the channel if the "moderated" channel flag is set.
The second user type is a "voiced" user. Voiced users are referred to as voices. A voice can send text to the channel even if it is being moderated. Voiced users appears in the user list with a +

prefixed to their nick. A user may be voiced by a channel operator, or by a system service.

The last user type is the channel operator, or op. Channel operators have the power to modify a channel's properties, such as setting or removing the moderated flag. Ops also have the power to remove any other user from the channel (kick them), as well as permanently deny them the right to join the channel (ban them). Ops appear in the user list with a @ prefixed to their nick. Users may be opped by other ops, or by a system service if they have the relevant privileges for that channel. The first user to join an unregistered channel is always opped.

In truth, there is a fourth type of user, the IRCop, who is responsible for server maintenance and has the power to not only act as op in all the channels on the server, but also kick other users from the network and deny them the right to log in. The IRCop status is not bound to a channel and does not have a nick prefix. it will therefore be ignored when talking about users in a channel.

IRC also allows users to enter a private conversation. This is referred to as Private Message (PM). A PM is similar to a channel, except only two users may participate in one, and it has none of the properties a channel has.

There are two ways of communicating on IRC. The first is sending text to a channel, or to a PM. The second is by sending a "notice". A normal notice is sent to one user directly. This allows users to have a private conversation, even when in a channel. A special kind of notice is the operator notice, which can be sent by ops to all other ops in the same channel. This allows ops to have a private, op-only conversation in a channel. IRCops may also notice all users on a network, for example to notify them of a server that will be restarting shortly after.

Not all channels are populated by the same kinds of users. It depends on the channel and even the network what kind of community a channel is likely to have. Each community has its own moral code and social rules (or a lack thereof). Users who don't follow this code or these rules are likely to end up banned from the channel. The channel I have taken my example from represents but one of the many different social climates on the Internet.

1.5 Why people use IRC

Though IRC is rather old considering the rapid evolution of software and network communication over the last 20 years, it continues to be a popular and widely used medium for online communication. There are two reasons for this.

Firstly, on the technical side, IRC is a powerful medium that lends itself to a large number of applications, as has been pointed out earlier. Add to this the open-standard nature of the protocol, and the result is what can be described as the Linux among IM protocols. With enough technical knowledge, a user can exert a great amount of control over a chat community, either through administrative rights or scripting. Additionally, anyone can run an IRC server, either part of a larger network or stand-alone. This independence of third parties can be an important advantage over other, centralized IMs.

Secondly, on a more social side, the IRC medium lends itself especially well to the creation and sustenance of online communities. Such communities are innumerable on the Internet, and consist of people who share an interest and wish to communicate about this interest. Such communication almost always takes place in public to allow new members to join the community. Most media, such as e-mail, voice-over-IP and the majority of IMs are unsuitable for this task. Instead, communities typically form on public forums and IRC, often both. It is worth noting that while communities can form reasonably quickly, they are often very slow to die off. Years after a group that provides a service to the public has become defunct, people will still occasionally visit their IRC channel and even stay there permanently just in case. Such ghost channels are quite numerous. Since users are never denied access to a channel that does not exist (it will be created when a user joins), there is no

mechanism that prevents this phenomenon from occurring.

A user will typically start using IRC because the above, but continued use of the medium may be more related to habit than to any clear reason.

2. Typical features of a chatbox dialog

2.1 Syntactic features

Obviously, chat dialogs are quite different from normal dialogs. Firstly, chat dialogs make use of written text, as opposed to spoken language. This means certain properties of natural speech no longer apply. There is no such thing as distortion of a dialog act by coughs or pauses, for example. Also, since every dialog act is sent all in one go, they tend not to break off like spoken sentences sometimes do.

However, written text introduces several other characteristics that don't appear in a spoken conversation. The most important of these is the appearance of bad spelling. A large part of the human population is illiterate or has a low level of literacy, perhaps the typical Internet user more so than others. Whatever the case, bad spelling is commonplace on the Internet, and chatboxes are no exception. It is also possible for users to intentionally misspell a word, to make a joke or for another reason. An example of bad spelling is {25}.

A common practice on IRC is quoting others. Because every user has a backlog of all the dialog acts in the channel from the time the user joined, the user can simply copy the dialog act he wants to quote. The result is a "double" dialog act. This happens in {32}. The reason for this quote is that user "illicitporpoices" was not in the channel at the time of {16}.

Any language may be used when chatting with users, but because users are often living in various parts of the world, English is most often used. However, regardless the language being used, there will almost always be a form of Internet language. Most Internet language consists of acronyms of existing words, which reduce the time needed to type a sentence. An example is {53}, where "plz" is used to mean "please". There is no standard for Internet language, nor is there an exhaustive reference for it, though attempts have been made to make one. This phenomenon fits in the "language games" theory described in [7] (Carlo and Yoo, 2003).

The text in a channel can be divided into two categories. Regular speech acts (or at least their written counterparts) and actions, which have no counterpart in a normal conversation. Actions are used to convey a description of a (usually fictional) action performed by the user. Examples of actions are {19} and {35}. Note that most IRC services, such as topic changes, kicks, bans and automatic opping manifest themselves in the form of actions.

Everything that transpires in a channel does so by means of text. As such, text is the only context in a conversation in a channel. Users therefore frequently find it necessary to address other users to make it clear to whom they are speaking, like in {22}. There is no fixed way to address someone, though the method shown in the example is widely used. Generally, a vocative is always involved.

A user whose nickname shows up in a channel's user list is not necessarily paying attention to the channel, or even at his computer. This has some implications for the structure of a chat conversation. For example, it may well be that a question goes unanswered for a considerable amount of time, or indefinitely.

Conversely, it may be that two or more people are answering a question at the same time. In a normal conversation, such situations don't occur, because it is possible to tell if someone is already answering the question.

2.2 Semantic features

Besides this Internet language, most IM and chat users use special symbols called smilies, also known as emoticons. Examples are {33} and {36}. Smilies are used to convey an emotion or sentiment. This can be fitted in the theory of politeness strategies described Carlo and Yoo (see also [6], Brown and Levinson, 1987), in that a statement can be given an extra semantic value by compounding it with such a symbol. Potentially offending remarks can thus be identified as a joke, which would otherwise

not be as apparent (a case of a positive politeness strategy).

This last part is of some importance. One of the more nefarious phenomena in internet communication is the so-called "flaming", a word used for having a row on the internet. Such rows can be sparked by ambiguity and misunderstanding, but they also occur for other reasons such as "trolling", or the act of deliberately trying to anger another participant in the conversation (a case of a negative politeness strategy). Since the Internet is anonymous and impersonal, a fight can heat up more hotly and more easily than is the case with face-to-face communication.

3. Addressing

In normal conversations, addressing takes place by many different means, such as gestures, gaze or speech. Obviously, in chats, the first two means do not apply, which means any and all addressing has to take place by means of text. Obviously, addressing in a PM is not an issue because only two people participate in the conversation, but typically more than two people will join a conversation.

[2] (Jovanovic et al, 2004) lists a number of techniques that aid in the detection of addressing, such as gaze direction, dialogue acts, addressees and adjacency pairs. It is clear that gaze direction doesn't apply, but the other methods can be used to analyze chat conversations. {22} and {24} are a good illustration of this. These dialogue acts form an adjacency pair, {22} being the A part and {24} being the B part, and user illicit_porpoises is being addressed explicitly, so this is also an instance of direct verbal addressing [4] (Clark et al, 1992). It is important to note that two dialogue acts that are temporally *too* adjacent will not form an adjacency pair, even if it might appear as if they do. The reason for this is that users need time to write a dialogue act, and it is impossible to tell when they began writing it.

Indirect verbal addressing also occurs in chats, as it does in normal conversations, although sometimes this is unintentional. There is no fail-safe way to determine whether a user is "present" in a channel, so it is quite possible for users to mistakenly assume another user is not reading what is being sent. In this respect the social presence of a chat channel as defined by [5] (op den Akker et al, 2004) is quite low.

Jovanovic et al also recognize a varying set of audiences. An audience can be one participant, a subgroup of participants, all the participants or the audience can be unknown. This holds true in chat conversations as well. The direct verbal addressing in {22} clearly has one user as its audience. In the same way, multiple users can be directly addressed. {28}, on the other hand, is not directly addressed at anyone. The audience for this dialogue act is therefore all the other users in the channel.

4. Inherent issues

4.1 General issues

It is common for users who know each other well to address one another by short versions of their nicknames. In the example chat, this happens in {34}. In addition, it is easy for IRC users to be known by more than one nickname, and so it is possible for users to address other users by a nickname they aren't currently using.

Some channels are not only used to talk in. These channels will have a number of users or both that run a file server, or 'fserver'. These fservers will usually broadcast an advertisement to inform users about the contents of the server and the commands it accepts. Conversely, users may send these commands to the channel to trigger the fserver. Obviously, this cannot be considered a conversation.

In some cases, a conversation may occur that is only meaningful to a small number of users. An example is a conversation that is linked to another conversation that happened in real life, or elsewhere on the Internet. A good example of this is YouTube. Users will often point each other at an online video, after which discussion on its contents ensues (or fails to do so).

Another issue that is common to all chat media, especially those involving more than one user is lack of cohesion due to multiple conversations going on simultaneously or people talking at the same time. A more in-depth analysis of this phenomenon is recorded in (Simpson, 2005).

4.2 Client-specific issues

The time when chatting was merely the exchange of text is long gone. As stated, many IMs offer the possibility of exchanging all sorts of different media. IRC, for example, not only offers facilities to exchange text, but also files. Sometimes users will comment on one of these file transfers, resulting in a reaction without a cause.

Other media may include sound recordings, live voice-over-IP communication, images drawn by users in real-time or video feeds (all of which can and do occur in combination with text messages). All of these complicate natural language processing on the text alone.

4.3 Mannerisms and memes

A "meme" is a term coined in 1976 by the biologist Richard Dawkins and refers to a "unit of cultural information" which can propagate from one mind to another the way genes propagate from a parent to a child.

Memes typically are temporary in nature. They will gain popularity in a short period of time, but will stay in popularity equally briefly. Well-known real-life memes include toys (such as the revival of the yo-yo in 1997) and video clips (such as beer vendor Budweiser's "wassup" commercial series, in which a group of friends yell "wassup" at each other on a shared telephone connection). However, there also longer lived memes to be found in real life, such as fashion and, in a way, religion.

On the Internet, information propagates much faster than in real life. As a result, memes tend to appear and fade at a far more rapid rate. Examples of well-known Internet memes are the "badgers-badgers-badgers" flash animation by Weebls Stuff and the "all your base are belong to us" mistranslation of the Zero Wing video game. [1] Both memes enjoyed great popularity and were referred to on a daily basis by Internet community members.

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[1] Both of these phenomena owe their popularity to their non-sensical content. Zero Wing's intro animation was translated into very bad English, resulting in a humorous dialogue, with "all your base are belong to us" being the token highlight. Badgers is a music clip in which the only words used are "badgers", "mushroom" and "snake".

Similarly to the concept of memes, mannerisms also change more rapidly than they do in real life. This paper has mentioned the use of Internet language. Not only is this Internet language different in nature from anything heard in real life, it is also heavily subject to change. To complicate matters further, this change is not constant. Some sub-groups may develop their own "dialect" of Internet slang while others may still be using a dialect that has been abandoned by the mainstay of Internet users.

4.4 Lack of assumptions about conversations

In NLP, techniques to analyze a conversation invariably work under a set of assumptions on how the conversation will flow and what elements it might contain. Such assumptions cannot be made about a chat conversation. The participants in such a conversation know very little about one another. Even if the addressed party is shown as being online, there is no guarantee that they are present at any given time. In short, there is no organization to a conversation in terms of knowledge about other participants in the conversation and about the flow of the conversation before connecting. There is also no agenda of what to talk about and in which order. Though an online community will largely talk about the subject around which it is formed, no assumptions can be made.

The consequence of this state of affairs is that a conversation in a chat is difficult to parameterize and structure. By extension that means it is difficult to develop a technique that generalizes over all chat conversations.

5. Statistical approaches

In NLP the most common technology to be applied is statistics in various forms [3] (Manning and Schütze, 1999). Part-of-Speech Tagging, Hidden Markov Models and Probabilistic Parsing are well-known examples of statistical processes used in NLP. Research has shown that statistical language models almost always outperform dictionary-based systems, providing enough data is available.

While the amount of data generated by chat users worldwide on a daily basis puts most available corpora to shame, it is to be noted that by far most of this data is lost due to a lack of logging. But even if logging bots could capture a significant amount of data over a given time, there are complications.

A statistical system relies on a certain uniformity of the data it is trained on. As long as a great majority words are spelled correctly, errors in the training data can be ignored, as they are statistically irrelevant. However, a typical chat dialogue is riddled with such errors on every level, from typos to a fundamental lack of knowledge about the language used on the part of the user. This severely reduces the performance of any statistical system without the use of some very heavy pre-processing.

As stated earlier in this article, the use of chat language is not universal. Therefore a system trained on the data gathered from one part of the chat community may perform quite poorly when evaluated using data from a different part. Additionally, online language evolves at a very rapid pace, due to memes and the fact that one can communicate instantly with people from a different part of the world, allowing for both more opportunities to experience new mannerisms and much faster propagation of these. The result is that once a system is trained, it will only continue to perform well for a limited amount of time. It's even possible that a system will be outdated by the time it has finished training, depending on the data used.

6. Suggestions

To overcome the problem of confusion induced by dialog acts that are very close together, it seems prudent to attribute a time frame to each dialog act. This time frame extends from the moment the dialog act is sent to the channel back over a period of time in which it is reasonable for a user to have typed the dialogue act. These time frames can then be further analyzed to get a general idea of which dialogue acts form adjacency pairs with other dialogue acts, or have relations with other dialogue acts. An obvious obstacle to this approach is that it is

hard to tell how fast a user types. One strategy is to monitor one user during a period of high activity, and compare the length of that user's dialogue acts to the intervals between their occurrences.

To combat the problem of the data to be analyzed being unsuitable for training, one can limit the source of this data to chatboxes that are frequented by people who use relatively normal language and who make few mistakes. Sufficient pre-processing might yield data that could be used for further research in this area. However, such data would not represent a typical chatbox and would thus be of limited value.

7. Conclusion

In NLP, it is important that the data to be analyzed is structured at some level, in order for analysis to even be possible. This paper has shown that to a large extent, structures that can be assumed to exist in normal conversations are lacking in Internet communication.

By far the largest hurdle in dialog analysis originates in the ever-changing nature of the Internet society. Mannerisms and memes change so fast that it's impossible to analyze them in a rule-based fashion and impractical to analyze them statistically.

8. References

[1] Protocol specifications on the official IRC website, http://www.irc.org/techie.html

[2] Jovanovic, op den Akker and Nijholt. 2004. *A corpus for studying addressing behavior in multi-party dialogues*. Language Resources and Evaluation, 2006 - Springer

[3] Chris Manning and Hinrich Schütze, 1999. *Foundations of Statistical Natural Language Processing*, MIT Press. Cambridge, MA: May 1999.

[4] Clark et al. 1992. *Arenas of language use*. Center for the Study of Language and Information, 1992

[5] op den Akker et al. 2004. *Glossary on Meetings and Selected Meeting Scenarios*. Augmented Multiparty Interaction, D1.1

[6] Brown, P., and Levinson, S. C. (1987). *Politeness: Some universals in language usage* (Vol. 4). Cambridge: Cambridge University Press.

[7] Jessica Luo Carlo and Youngjin Yoo, 2003. *Language Games in Computer-Mediated Communication*, in Sprouts: Working Papers on Information Environments, System and Organizations, Volume 3 Issue 1 Article 3 – 2003

[8] Kil Soo Suh (1998), *Impact of communication medium on task performance and satisfaction: an examination of media-richness* theory, College of Business and Economics, Yonsei University, Seoul 120-749, South Korea

[9] James Simpson (2005), *Conversational floors in synchronous text-based CMC discourse* in Discourse Studies 2005, Sage publications.

Appendix A: example chat.

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{01} Session Start: Wed Jun 08 14:04:55 2005
{02} Session Ident: #romhack
{03} [14:04:55] * Now talking in #romhack
{04} [14:04:55] * Topic is 'http://www.marktaw.com/reviews/AlternateRealityTheVideoG.html |
http://film.guardian.co.uk/news/story//0,12589,1495978,00.html DISCUSS |
http://www.pointlesswasteoftime.com/games/manifesto.html |
http://www.bripro.com/low/hardware/nesvidcard/index.php'
{05} [14:04:55] * Set by |nfecteD!~klubbhead@ti121210a080-14369.bb.online.no on Tue Jun 07 21:18:09
{06} [14:04:56] * ChanServ sets mode: +o BTAxis
{07} [14:16:16] * ChanServ sets mode: +o Audigy
{08} [14:29:23] <BArOc> ohhh...
{09} [14:29:25] <BArOc> Google has a new logo
{10} [14:30:34] <@BTAxis> It changes logos all the damn time.
{11} [14:31:42] <+jegHegy> just click on the logo and you'll see why it changed
{12} [14:34:25] * ChanServ sets mode: +o Audigy
{13} [14:42:29] * ChanServ sets mode: +o paizuri
{14} [14:50:10] * ChanServ sets mode: +o Flobby
{15} [14:53:06] <+jegHegy> for anyone interested http://www.valve-
erc.com/srcsdk/general/multiplayer_networking.html
{16} [15:14:54] <+jegHegy> hah, HL update
{17} [15:33:56] <+jegHegy> https://www.totse.com/bbs/Forum5/HTML/206078.html
{18} [15:34:06] <+jegHegy> hay i'm quitting so i took whatever was left over!
{19} [15:40:39] * @Flobby extracts GTA
{20} [15:44:56] <@BTAxis> Great Teacher Anizuka.
{21} [16:06:55] * ChanServ sets mode: +o illicitporpoises
{22} [16:07:09] <@Flobby> illicitporpoises: You tried the Hoodlum release yet?
{23} [16:07:20] <@Flobby> It just finished a few minutes ago, I'm wiping a DVD+RW in prep for burn.
{24} [16:07:21] <@illicitporpoises> It still hasn't finished yet.
{25} [16:07:27] <@illicitporpoises> I wont get to try until later tonight.
{26} [16:07:35] <@Flobby> Well, I'll let you know then.
{27} [16:07:44] <@illicitporpoises> Alright. Cool.
{28} [16:12:12] <@illicitporpoises> hahah, a patch for Half-Life 1
{29} [16:12:24] <@BTAxis> OLD
{30} [16:12:55] <@illicitporpoises> Yeah, entire hours old.
{31} [16:13:05] <@BTAxis> Well, one hour, anyway.
{32} [16:13:08] <@BTAxis> [15:14:54] <+jegHegy> hah, HL update
{33} [16:13:25] <+jegHegy> D:
{34} [16:13:31] <@illicitporpoises> Damn you jeg!
{35} [16:13:38] * @illicitporpoises shakes fist in mock rage
{36} [16:13:57] <+jegHegy> i couldn't even START downloading any of the hoodlum torrents :(
{37} [16:14:13] <@illicitporpoises> The one from mininova?
{38} [16:14:21] <+jegHegy> dunno, tried a bunch
{39} [16:14:27] <@illicitporpoises> My friend said he got booted from the torrent before he even started.
{40} [16:14:29] <@illicitporpoises> Mine ran fine.
{41} [16:15:06] <@illicitporpoises> Flobby will find out if the release is good or not.
{42} [16:15:15] <@illicitporpoises> Oh, and I found a nocd for Chaos Theory.
{43} [16:15:28] <@illicitporpoises> I'll try to test it tonight after I get home from dinner.
{44} [16:15:56] <@Flobby> Hmm.
{45} [16:16:13] <@Flobby> Alcohol is just sitting there at 100% after erasing the DVD+RW in full mode.
{46} [16:16:19] <@Flobby> I wonder if I can just hit cancel and have it work.
{47} [16:16:35] <@Flobby> One way to find out.
{48} [16:16:48] <@illicitporpoises> I've always found CloneCD/DVD's eraser to be really good.
{49} [16:17:29] <@Flobby> Well, I've got it burning now, apparently.
{50} [16:17:32] * ChanServ sets mode: +o Entropy
{51} [16:18:08] <@Flobby> Hmm, 4X isn't bad for DVDs.  This is the first time in like the 3-4 years that
I've had PCs with DVD burners that I've actually burned a DVD :P
{52} [16:18:15] <@Entropy> slooow
{53} [16:18:28] <@Entropy> 16x plz!
{54} [16:18:38] <@illicitporpoises> Yeah, seriously.
{55} [16:18:47] <@illicitporpoises> 4X might be ok for DL.
{56} [16:19:06] <@illicitporpoises> ughhh. I was stuck on 2.4x for the longest time.
{57} [16:19:13] <@Entropy> i had a 1x for 2 years
{58} [16:19:35] <@illicitporpoises> Ouch.
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