
DSARMD Annotation Guidelines

Version 2.5

Samira Shaikh, Tomek Strzalkowski, Aaron Broadwell, Jennifer Stromer-Galley, Nick Webb
Umit Boz, Alana Elia, Ken Stahl

University at Albany

January 2010

Table of Contents

1. INTRODUCTION	2
2. ANNOTATION CATEGORIES	2
3. ANNOTATION CATEGORY - COMMUNICATION LINKS	3
<u>ADDRESSED-TO-USER</u>	3
<u>RESPONSE-TO-USER:UTTERANCE</u>	5
<u>CONTINUATION-OF-USER:UTTERANCE</u>	6
4. ANNOTATION CATEGORY – DIALOGUE ACTS	7
INFORMATION LEVEL- TASK	8
INFORMATION LEVEL- PROCESS-MANAGEMENT	9
INFORMATION LEVEL- COMMUNICATION-MANAGEMENT	10
A. STATEMENTS AND RESPONSES	12
<u>A.1 Assertion-Opinion</u>	12
<u>A.2 Offer-Commit</u>	17
<u>A.3 Acknowledge</u>	17
<u>A.4 Signal-non-understanding</u>	18
B. QUESTIONS AND DIRECTIVES	20
<u>B.1 Information-Request</u>	20
<u>B.2 Confirmation-Request</u>	21
<u>B.3 Action-Directive</u>	21
C. CONVERSATIONAL NORMS	22
<u>C.1 Conventional-Opening</u>	22
<u>C.2 Conventional-Closing</u>	23
<u>C.3 Other-Conventional-Phrase</u>	23
<u>C.4 Correct-Misspelling</u>	24
4.1 SPLITTING UTTERANCES	25
5. ANNOTATION CATEGORY – LOCAL TOPICS	25
5.1 NEW LOCAL TOPIC (NLT).....	26
5.2 SUBSEQUENT MENTION OF LOCAL TOPIC.....	26
<u>5.2.1 Subsequent Mention by Repetition or Synonym (SMS)</u>	26
<u>5.2.2 Subsequent Mention by Pronoun (SMP)</u>	27
6. ANNOTATION CATEGORY – VALENCE OF MESO-TOPICS	28
7 SUMMARY OF ANNOTATION CATEGORIES	30

1. Introduction

The annotation guidelines described in this document form the initial specification of the **Social Actions/Roles Markup Language (SARML)**. The guidelines are divided into several categories for manual annotation of multi-party Internet chat at different levels of granularity. The objective of annotation is to capture, in a formal and unambiguous notation, the semantics, intent and significance of each utterance in dialogue. An utterance is the sequence of words and characters entered by a user in a single turn in chat.

SARML is developed as part of the SCIL DSARMD project. The DSARMD project aims to understand the conversational behavior and associated social phenomena in small groups of on-line chat users. Our objective is to develop automated tools that can (a) model such behavior and (b) assert presence of language uses and social phenomena in multi-party dialogues. This annotation guide covers *communication links*, *dialogue act categories*, as well as *language use components* and *features* required for asserting *Language Uses* (such as Topic Control, Task Control, Disagreement, and Involvement) as they occur in multiparty dialogue. The Language Uses are, in turn, elements of broader Social Phenomena, including leadership, power, and conflict that occurs within social groups.

The dialogic categories (dialogue acts) in this guide are adapted from another project that aimed to mimic human conversational behavior in automated chat room agents, and thus should be considered preliminary at this time.

2. Annotation Categories

We are interested in exploring features of dialogue spanning various categories such as:

1) Communication Links: What are the links between utterances? Which user is this utterance directed to? Is this utterance a response to a question by this user or a different question?

2) Functional classification – Dialogue Acts: What is the function or role of a particular utterance in dialogue? In other words, what Dialogue Act does the user make? Is the user making a statement? Requesting information? Answering a question? Acknowledging the other user's utterance?

3) Content – Local topics: What are the topics under discussion? At a micro-level we have *local topics*, which are introduced into discourse by any content-bearing noun phrase, and are subsequently mentioned again via repetition, synonym, or pronoun. Knowing the extent to which a speaker introduces topics and the extent to which other participants discuss these topics is key to determine this speaker's influence and effectiveness in a discourse, both aspects of topic control.

4) Sentiment – valence of meso-topics: Some topics are more central to the discourse and they persist for longer than other local topics. Once introduced, such *meso-topics* are referred to directly and indirectly, and they often have polarity statements made about them. The type of statement made about a meso-topic, which can be positive, negative, or neutral determines *valence* assigned to the meso-topic. Knowing how speakers value meso-topics helps to determine sources of disagreement within a group.

To allow for efficient manual annotation of dialogue features on these levels we have developed a new software annotation tool: Social Actions/Roles Markup Tool (SARMT).

3. Annotation Category - Communication Links

Communication links capture associations between utterances. These are situations where one user's utterance responds or relates to a previous utterance by another user. This also includes situations where one user is addressing another user or a group of users who may subsequently respond to him or her. At this level, we are interested in annotating utterances that are addressed to the entire group or to some specific user, uttered in response to a specific previous utterance, or are continuations of a previous utterance by the same user. Accordingly, there are 3 possible communication links you can choose from: Addressed-to, Response-to, and Continuation-of. Here are the instructions how to apply them:

Addressed-to-User

This communication link (CL) is assigned to an utterance when a response is typically expected, such as may be with questions, greetings, or commands. The Addressed-to link also contains information about who is the addressee of the utterance (a single person or a group). It is not necessary that any of the addressees subsequently give a response. In a group discourse, many utterances are simply addressed to the whole group. However, we also want to capture these instances where an utterance is explicitly addressed to a specific person or persons, even though it is clearly seen (or heard) by every participant.

The following are examples of utterance addressed to the whole group of participants (Example 1 and 2) or to a specific user (Nick in Example 3).

Example 1.

*User 1. (1) are we still waiting for people?
(CL: ADDRESSED-TO-ALL-USERS)*

Example 2.

*User 2. (2) what kind of music do you guys listen to?
(CL: ADDRESSED-TO-ALL-USERS)*

Example 3.

*User 3. (3) what kind of music nick?
(CL: ADDRESSED-TO-NICK)*

An utterance may be directed to a specific user without this user's name being explicitly mentioned. In such cases, the addressee may be determined from the context of the previous conversation, as seen in Example 4 below, where User2's utterance is clearly addressed to User 1:

Example 4.

*User 1. (1) i lived in japan for 7 years
User 2. (2) where in japan?
(CL: ADDRESSED-TO-User1)*

Not all utterances that are assigned Addressed-to link are questions. Below are examples where the utterance is tagged with Addressed-to, but it takes a different form: a greeting (Example 5) and a command/request (Example 6).

Example 5.

*User 1. (1) hello everyone!
(CL: ADDRESSED-TO-ALL-USERS)*

Example 6.

*User 1. (1) i lived in japan for 7 years
User 2. (2) where in japan?
(CL: ADDRESSED-TO-User1)
User 3. (3) Tell us about japan.
(CL: ADDRESSED-TO-User1)*

An Addressed-to link may also be assigned to a subset of participants in chat. As in Example 7 below, User 1's utterance is directed to two participants.

Example 7.

*User 1. (1) kara, nick....what do you guys think?
(CL: ADDRESSED-TO-kara+nick)*

Response-to-User:Utterance

A Response-to link is assigned when the user is responding to a particular utterance made by another user. This is the most frequently encountered communication link in a chat session, as well as other forms of group communication. Utterances tagged as Response-to will include answers to questions, agreements or disagreements, acceptances or rejections, as well as various forms of commentary statements or opinions.

A Response-to link is often paired with an Addressed-to link assigned to a specific prior utterance. It should be noted that while Addressed-to is directed to a participant or a group, a Response-to is linked to a specific utterance. In Example 8 below, User2 responds to utterance (1) by User1, which was addressed to all participants in the chat room.

Example 8.

User 1. (1) anyone seen watchmen?

(CL: ADDRESSED-TO-ALL-USERS)

User 2. (2) yes i went to a screening before it came out

(CL: RESPONSE-TO-User1:1)

A response may not necessarily follow a question, or another Addressed-to link. A statement or any other utterance by another user may induce a response, even if it was not necessarily anticipated. In Example 9 below User 1 comments on User2's response (2), while in Example 10 User 4 agrees with User 3's opinion expressed in (1).

Example 9.

User 1. (1) are you signed for tomorrow?

(CL: ADDRESSED-TO-User2)

User 2. (2) yeah, signed up for 1pm. 10am my time

(CL: RESPONSE-TO-User1:1)

User 1. (3) i wish it was that early here i have a lot to do and half the day is gone

(CL: RESPONSE-TO-User2:2)

Example 10.

User 3. (1) Its time for a lot of things with our economy ahaha

User 4. (2) agreed

(CL: RESPONSE-TO-User3:1)

A Response-to link may only be linked to a single prior utterance. In cases where a response-to link could potentially be paired with multiple prior utterances, annotators are encouraged to

select the most recent prior utterance that applies. When it is unclear what an utterance may be responding to, an Addressed-to link should be used instead.

Continuation-of-User:Utterance

Users may occasionally continue their thoughts through multiple utterances. This may occur if the user feels that some additional information needs to be added to the utterance just made to make it complete or understandable. This may also occur when a user prematurely hits the Enter key, thus splitting what was meant as a single expression into two or more utterances. The purpose of the Continuation-of link is to capture such cases indicating that they may be considered as a single utterance.

Annotation with this link should be reserved only to situations where (a) both utterances are made by the same user, (b) both utterances form a single thought and are close to each other in time (usually a few seconds apart) and (c) the second utterance is not apparently influenced by what other users may have said in the meantime.

In Example 11, User2 continues his response to User1 through two utterances (2 and 3), which are parts of the same thought.

Example 11.

*User 1. (1) The vending machines have things other than candy bars?
(CL: ADDRESSED-TO-User2)*

*User 2. (2) you can get magazines, alcohol, cigarettes, snacks and other stuff
(CL: RESPONSE-TO-User1:1)*

*User 2. (3) panty hose too in fact, if you get a run and need a change
(CL: CONTINUATION-OF-User2:2)*

In Example 12, User 1 adds the question mark to her utterance 1 just submitted:

Example 12.

User 1. (1) what did they discuss amanda

User 1. (2) ?

(CL: CONTINUATION-OF-User1:1)

This link should also be used for marking utterances where the user corrects a misspelled word in a previous utterance as seen in Example 13:

*Example 13**User 2. (1) My kids did tell me the band you're going to hear (dc for cutie) is great.**User 2. (2) *band**(CL: CONTINUATION-OF-User2:1)*

4. Annotation Category – Dialogue Acts

The **functional or dialogic aspect** of an utterance has to do with its role or purpose in conversation. Statements, questions, answers, offers, acceptances and rejections, as well as expressions of thanks are all examples of such functions in a dialogue, which we call Dialogue Acts (DA). It is important to remember that our objective is to capture how an utterance functions in dialogue, which may or may not be directly related to its form. For example, the utterance “Can you close the window?” may function as a question or as a directive, depending upon the context in which it is used. It is therefore important to consider other surrounding utterances when making decision which tag to use.

We classify Dialogue Acts into the three hierarchical categories (see Figure 2 below): (a) Statements-and-Responses, (b) Questions-and-Directives, and (c) Conversational-Norms. Each of these categories consists of several top-level tags and may also contain specialized tags under these.

In addition to its function in dialogue, an utterance is also classified according to the **Information level** at which it operates. The Information Level annotation provides an abstract characterization of the content of the utterance. In task-oriented dialogues, we can roughly divide utterances into those that address the task in some way and those that to manage the communication process itself (*Communication Management*). In addition, we subdivide the first group into utterances that deal directly with the task at hand (*Task*), and those that discuss the task solving process (*Process Management*).

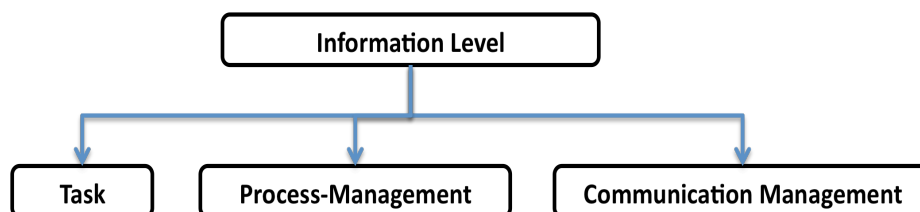


Figure 1. Hierarchy of Information-Level tags

Information Level-Task

The majority of utterances in most domains involve performing the task that is the reason for the dialogue such as making an airline reservation or scheduling a meeting. Utterances whose content is in the Task category directly advance or attempt to advance the objectives of the task at hand, such as it may be (e.g., selecting a candidate for a job, etc.). Each dialogue transcript is accompanied with a clear description of the task assigned to the participants and characterizes the types of activities that occur while doing the task. It is generally not possible to make the information level distinction without this information. As an example, the dialogue from which the examples below are drawn involves selecting a candidate to interview for a job from a list of resumes. Examples of utterances at the Task level include questions about the candidate as illustrated below. All utterances in the examples below will be given the Task Information-Level tag.

Example 14.

User 1: i wonder how old carla is?

(IL: TASK)

User 2. '06 high school grad.

(IL: TASK)

Example 15.

User 3: his best part is that he tutored in grades 3-5 but doesnt say for how long..

(IL: TASK)

User 4: He graduated 10th in his class though

(IL: TASK)

Example 16.

User 1: i like how she has some volunteer experience- although nothing child related necessarily

(IL: TASK)

Information Level- Process-Management

Utterances at this level explicitly address the problem solving process or the procedure of how to go about solving the task. This includes utterances that involve coordinating the activities of the participants and the task. Process Management discussion may occur near the beginning of the dialogue and also at various points throughout it, especially where significant topic shifts occur. Utterances may address planning the order of activities, deciding the next steps, summarizing points or positions, or assessing progress towards the task objective.

Example 17.

*User 1: How do we proceed from here?
(IL: PROCESS-MGMT)*

Example 18.

*User 2: We're going though the resume's and choosing the right person for the job
(IL: PROCESS-MGMT)*

Example 19.

*User 3: let's go back to matthews
(IL: PROCESS-MGMT)*

Example 20.

*User 4: Ok, who's next? Mark?
(IL: PROCESS-MGMT)*

Example 21.

*User 5: so is jenny leading the discussion?
(IL: PROCESS-MGMT)*

Example 22.

*User 6: in the past, we all went through one resume at a time - wanna start with james?
(IL: PROCESS-MGMT)*

Information Level- Communication-Management

Utterances at this level include conventional phrases that maintain contact perception and understanding during the communication process and include greetings, closings, acknowledgements or repeating part of what the speaker said. They also might address the communication process explicitly say to establish the communication channel and answering. In our context, we tag utterances in this category if they cannot be attributed to the general conversation underway. One useful test is to remove the utterance in question from the dialogue. The conversation might be less fluent but would still have the same content and removing this utterance does not take away from the conversation.

Example 23.

*User 1: Hello, good evening!
(IL: COMM-MGMT)*

Example 24.

User 2: Good night! See you all!
(IL: COMM-MGMT)

Example 25.

User 3: Sorry about all my typos.
(IL: COMM-MGMT)

Example 26.

User 4(1): What do we tinhk of Carla?
(IL: TASK)
*User 4(2): think**
(IL: COMM-MGMT)

In examples 23-25 above, the utterances will be assigned the Communication-Management tag. In example 26, User 4's second utterance attempts to correct a misspelled word in his first utterance. So the second utterance gets a Communication-Management tag.

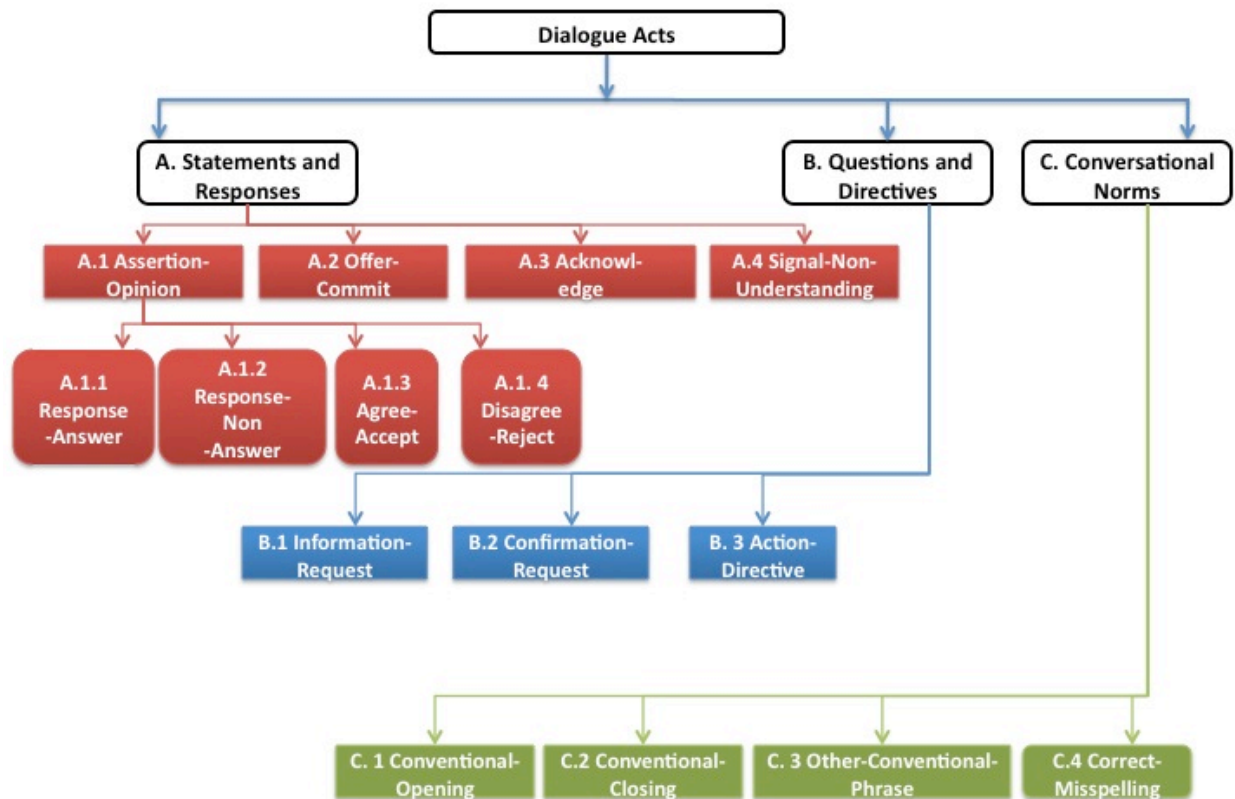


Figure 2. Hierarchy of dialogue acts

Assigning functional tags requires careful consideration of each utterance and the surrounding context, and then choosing a single tag that best characterizes the utterance. When tagging an utterance we always select the most specialized tag that applies.

For example – the utterance ‘It is cold here today.’ is coded as an Assertion-Opinion when used as in situation a) but the same utterance is coded as a Response-Answer when used in response to a question in situation b).

- a) *User 1: Hi all!*
User 1: It is cold here today.
 (DA: ASSERTION-OPINION)
- b) *User 1. What is the weather like?*
User 2. It is cold here today.
 (DA: RESPONSE-ANSWER)

Below we provide detailed instructions for coding dialogue utterances with Dialogue Act (DA) labels.

A. Statements and Responses

A Statement makes a claim about the world, and tries to change the beliefs of the listener. In general, an utterance that is a statement can be said to be true or false. Responses are utterances that users make to indicate reaction to another user's utterances, such as answering it, acknowledging it or agreeing to it.

We partition the Statements and Responses into four different types of dialogue acts – Assertion-Opinion, Offer-Commit, Acknowledge and Signal-non-understanding.

A.1 Assertion-Opinion

Assertion-Opinions are statements that communicate some specific details or make a claim about the world.

Example 27.

*User 1. (1) This is my first attendance.
(DA: ASSERTION-OPINION)*

Example 28.

*User 2. (2) I chat pretty regularly, lots of long-distance friends
(DA: ASSERTION-OPINION)*

Example 29.

*User 1. (1) sure....I was not totally bummed out by the Watchmen movie like
I thought I would be...
User 1. (2). I kind of thought I would hate it, because I'm so attached to the book.
(CL: CONTINUATION-OF:User1:1, DA: ASSERTION-OPINION)*

Example 30.

*User 3. (3) its more effective, I think
(DA: ASSERTION-OPINION)*

The above examples illustrate the various forms an utterance with an Assertion-Opinion tag can take. Example 27, 28 and 29 are general statements providing some information to the other users while in Example 30, the user is expressing an opinion.

When we take into account the context in which a user is making an assertion-opinion type of utterance, it may be categorized as providing an answer to a question that another user has asked, or they may be agreeing with an opinion stated by another user. In such cases we use one of the specialized tags under the Assertion-Opinion label, if any of them applies: Response-Answer, Response-Non-Answer, Agree-Accept or Disagree-Reject.

A.1.1 Response-Answer

A response to a question asked by another user, that fulfills the question is tagged as a Response-Answer. In the examples below, User 2's utterance is tagged as Response-Answer. In general, a Response-Answer tag is applied to an utterance that is a Response-to a prior utterance.

Example 31.

User 1. (1) wait, you have to go at what time?

User 2. (2) like 1240 or so...

(CL: RESPONSE-TO-User1:1, DA: RESPONSE-ANSWER)

Example 32.

User 1. (1) Who created this money? Is it backed by a local bank or something?

User 2. (2) It's backed by some kind of local money...

(CL: RESPONSE-TO-User1:1, DA: RESPONSE-ANSWER)

Example 33.

User 3 (1) do you guys have an Albany Craigslist?

User 4. (2) yes sir! love it!

(CL: RESPONSE-TO-User3:1, DA: RESPONSE-ANSWER)

In Examples 34 and 35, although User 2's utterance is structured as a reply in the negative, it 'answers' the question asked by User 1 and it is tagged as a Response-Answer.

Example 34.

User 1. (1) ...you on youtube right now?

User 2. (2) no but if you paste a link ill check out whatever

(CL: RESPONSE-TO-User1:1, DA: RESPONSE-ANSWER)

Example 35.

User 3. (3) is there some kind of occassion today?

User 4. (4) no every sunday we do brunch

(CL: RESPONSE-TO-User3:3, DA: RESPONSE-ANSWER)

A general rule to follow is if an utterance is identified as being a ‘response-to’ another utterance that was a question, and it *satisfies* the question that was asked, we select this tag.

A.1.2 Response-Non-Answer

A response to a question asked by another user, that does not fulfill the question is tagged as a Response-Non-Answer. This occurs when the requested answer is not supplied, either because it is unknown, or irrelevant, or does not apply, or when it is withheld. In general, a Response-Non-Answer tag will be applied to an utterance that is a Response-to a prior utterance.

In Examples 36 and 37, both utterances by User 2 are tagged as Response-Non-Answer:

Example 36.

User 1. (1) what song?

User 2. (2) I don't remember, it was something with Lil' Wayne on it

(CL: RESPONSE-TO-User1:1, DA: RESPONSE-NON-ANSWER)

Example 37.

User 3. (1) is there a real italian place in albany? buccas maybe?

User 4. (2) umm not sure i am lead to believe there is because there are alot of italians there haha

(CL: RESPONSE-TO-User3:1, DA: RESPONSE-NON-ANSWER)

In example 38 below, User 2's response-to User 1's utterance is tagged as a Response-Non-Answer, because it does not directly answer the question posed. We note that a simple ‘No’ response would be labeled as Response-Answer.

Example 38.

User 1. (5) did anyone watch the morning talk shows today (MTP, for example)?

User 2. (6) i don't have cable :(

(CL: RESPONSE-TO-User1:5, DA: RESPONSE-NON-ANSWER)

For assigning Response-Non-Answer tag, a general rule to follow is: if an utterance is identified as being a ‘response-to’ another utterance that was a question and it does *not* *satisfy* the question that was asked, we select this tag.

A.1.3 Agree-Accept

We mark an utterance with this tag if the user accepts or agrees with another user's proposal or request; or if the information or claim conveyed in a statement is accepted or confirmed. Statements with this tag convey the meaning - 'I agree with you', 'I will accept what you say to be true' or 'I will go along with what you propose'

Example 39.

*User 1. (1) saw is overflowing with cruelty!
(DA:ASSERTION-OPINION)*

*User 2. (2) for sure.
(CL: RESPONSE-TO-User1:1, DA: AGREE-ACCEPT)*

Example 40.

Lance. (1) I guess in real life I might just ring her up and clear up any possible misunderstandings before I nix her.

*Jennifer. (2) absolutely lance.
(CL: RESPONSE-TO-LANCE:1, DA: AGREE-ACCEPT)*

Example 41.

*User 1. (1) yeah richard is better than Emily
User 2. (2) I think so too.
(DA: AGREE-ACCEPT)*

Example 42.

*User 1. (1) that's a nice thing to do but might not be as relevant to the job description as some of the other stuff
User 2. (2) yeah relevancy to the description is #1
(DA: AGREE-ACCEPT)*

The utterances in the above examples made by User 2 are examples of Agree-Accept utterances.

A.1.4 Disagree-Reject

We use this tag when the user disagrees, rejects a proposal or offer, says he will not comply, or says that the claim or the information expressed by the other user is incorrect. Statements with this tag convey the meaning - 'I disagree with you', 'I do not accept what you say to be true' or 'I will not go along with what you propose'.

Example 43.

*amanda. (3) Kara, try just walking around. I love NY, to coin a phrase.
 kara. (4) no i can barely take the city life of albany to be honest
 (CL: RESPONSE-TO-AMANDA:3, DA: DISAGREE-REJECT)*

Example 44.

*User 1. (1) Maybe the ILS Personnel person will come out of hiding!
 User 2. (2) i don't think so
 (DA: DISAGREE-REJECT)*

Example 45.

*User 1. (1) Benny's seriously subtle!
 User 2. (2) i guess there's subtle aspects, but not when he's slapping the old bald
 dude on the head!
 (CL: RESPONSE-TO-User1:1, DA:DISAGREE-REJECT)*

Example 46.

*User 3. (1) Sushi tastes great!
 User 4 (2) only when dipped in soy sauce though.
 (CL:RESPONSE-TO-User3:1, DA: DISAGREE-REJECT)*

Example 47.

*User 3. (3) internet does not correct your spelling mistakes,
 User 4. (4) not unless you use a program
 (CL: RESPONSE-TO-User3:3, DA: DISAGREE-REJECT)*

The utterances in the above examples made by User 2 are examples of Disagree-Reject utterances.

A.2 Offer-Commit

We assign Offer-Commit tags to utterances that may potentially obligate the speaker to a future action. Offers are implicit or explicit questions that, if answered in the affirmative or with some positive information, mean that the speaker will perform some action for the listener. The Commits are utterances in which the speaker obligates himself/herself to perform a future action, phrased in such a way that the commitment is not contingent on the listener's agreement. A Commit may also be the response to an Action-Directive (dialogue act b.3).

Example 48.

*User 1. (1) Also, I think I will review the resume once again . . .
(DA: OFFER-COMMIT)*

Example 49.

*User 3. (3) So I'll broaden my horizons and listen.
(DA: OFFER-COMMIT)*

Example 50.

*User 1. (1) I'll give it a shot.
(DA: OFFER-COMMIT)*

Example 51.

*User 1. (1) ok i'll look up the charity.
(DA: OFFER-COMMIT)*

Example 52.

*User 1. (1) I'll go look at Edwards.
(DA: OFFER-COMMIT)*

Examples 48 and 49 are types of offers. Examples 50 – 52 are types of commit. We assign all these utterances the Offer-Commit tag.

A.3 Acknowledge

An Acknowledge tag is applied to utterances that recognize, without necessarily accepting or rejecting a previous utterance made by another user. A short phrase such as “okay”, “yes” or “uh-huh” can indicate that the user heard and understood the previous utterance, but did not necessarily accept what he heard.

Example 53.

*User 1. (1) goods we buy have to increase in price since our money is worth less
User 2. (2) I see.
(CL: RESPONSE-TO-User1:1, DA: ACKNOWLEDGE)*

Example 54.

*User 3. (1) ...I live in Seattle.
User 4. (2) oh nice.
(CL: RESPONSE-TO-User3:1, DA: ACKNOWLEDGE)*

*Example 55.**User 1. (1) get this...there is a cafe in the saratoga region**User 2. (2) yes?**(DA: ACKNOWLEDGE)**Example 56.**User 1. (1) That was important in prior chats when the screen for inputting characters was limited . .**User 2. (2) mmhmm**(DA: ACKNOWLEDGE)**Example 57.**User 1. (1) i lived in japan for 7 years**User 2. (2) cool!**(DA: ACKNOWLEDGE)*

In all of the above examples, User 2's utterances are assigned the Acknowledge tag. We also include in this category utterances such as 'lol', 'haha', 'funny!', 'weird!' that also convey user's reception of a prior utterance.

A.4 Signal-non-understanding

If the user has not understood or has partially understood something, we use the Signal-non-understanding tag. Utterances of this type can usually be paraphrased as "I don't understand", or "What did you mean?" or "Is this what you said?" or "I beg your pardon?" Many of these utterances take form of questions but they should not be confused with Information-Request or Confirmation-Request dialogue acts.

*Example 58.**User 1. (1) it is related to affective aspects in an interactive design product, such as chat**User 2. (2) Huh? You lost me Jenny. Affective aspects?**(CL: RESPONSE-TO-User1:1, DA: SIGNAL NON-UNDERSTANDING)**Example 59.**User 1. (1) Yes, I liked Osama (the movie!) better, but Kite was good.**User 2. (2) osama the movie? :o**(DA: SIGNAL-NON-UNDERSTANDING)*

*Example 60.**User 1. (1) he's an mma superstar from quebec**User 2. (2) MMA?**(CL: RESPONSE-TO-User1:1, DA: SIGNAL-NON-UNDERSTANDING)**User 1. (3) mixed martial arts, ultimate fighting championship**(CL: RESPONSE-TO-User2:2, DA: RESPONSE-ANSWER)*

In all of the above examples, User 2's utterances are assigned the Signal-non-understanding tag. Unlike an information request (e.g., 'where in Japan?' or 'do you know Hulk Hogan?'), this dialogue act does not introduce or asks for new information; instead it often repeats a phrase mentioned in a prior utterance to which it responds. The use of discourse particles such as "huh?" or emoticons such as ":o" is common as well. Signal-non-understanding may sometimes appear similar to Confirmation-Request (next section); annotators should exercise their best judgment as to whether the speaker is asking for clarification or merely wants to reconfirm a fact. In the example below User2 asks for confirmation, which is then answered by User1. This may be contrasted with Example 60.1 where User2 is confirming whether the meeting starts at 7 pm or not. Asking the question 'MMA?' means that the user has not understood what is meant by MMA as opposed to the question '7?' where they are attempting to confirm time when the meeting will start.

*Example 60.1: User 1. (1) the meeting will start at 7 tomorrow**User2. (2) 7?**(DA: CONFIRMATION-REQUEST)**User1. (3) Yup**(DA: RESPONSE-ANSWER)*

B. Questions and Directives

This dimension characterizes what effect an utterance has on the subsequent dialogue and interaction. Questions and directives are typically those that elicit some response from other users.

We classify questions and directives into the following four categories – Information-Request, Confirmation-Request, Open-Question-Option and Action-Directive.

B.1 Information-Request

An utterance where the user is asking for new information is tagged as Information-Request. These are typically questions that require a response with information that is new or previously unknown to the asker. In the examples below, the users are asking for information they do not currently possess. All these examples are tagged as Information-Request. We also include in this category questions that are more general in nature such as asking for opinions on an item or issue such as in examples 66 and 67 below.

Example 61.

User 1. (1) where is everyone ?

(CL: ADDRESSED-TO-ALL-USERS, DA: INFORMATION-REQUEST)

Example 62.

User 2. (2) who is leading tonight?

Example 63.

User 3. (3) who is Gov of NY now?

Example 64.

User 4. (4) How can you browse and do this?

Example 65.

User 5. (5) what's a leader's responsibilities?

Example 66.

User 6. (6) what about text messaging

(DA: INFORMATION-REQUEST)

Example 67.

User 7. (7) what about cell phone use in general

(CL: ADDRESSED-TO-ALL-USERS, DA: INFORMATION-REQUEST)

B.2 Confirmation-Request

A Confirmation-Request is an utterance that calls for the listener to confirm (or to deny) a fact that is already known to the speaker (Examples 68, 69). Confirmation-request can be used to verify whether an assumption made by the speaker is correct or not (Example 69). A Confirmation-Request typically takes the form of a non-inverted yes/no question and is often accompanied by a tag question such as “right?” or “didn’t you?”, etc.

Confirmation-Request should not be confused with those yes-no questions in which the speaker requests some new information of the listener (User 4’s utterance in Example 70). Such questions should be tagged as Information-Request. Annotators should base their judgment

upon which facts appear to be known to each dialogue participant based on the immediate context (usually 2-3 utterances prior).

Example 68.

*User 1. (1) You running the show today Nick?
(CL: ADDRESSED-TO-NICK, DA: CONFIRMATION-REQUEST)*

Example 69.

*User 2. (2) sarah, you just visited Seattle?
(DA: CONFIRMATION-REQUEST)*

Example 70.

*User 3. (3) How much do you travel?
(DA: INFORMATION-REQUEST)*
*User 4. (4) Does back and forth to work count?
(CL: RESPONSE-TO-User3:3, DA: INFORMATION-REQUEST)*

Example 71.

*User 5. (5) its your husband who doesn't like it, right?
(DA:CONFIRMATION-REQUEST)*

Example 72.

*User 6. (6) have you seen old boy?
(DA: INFORMATION-REQUEST)*

B.3 Action-Directive

If the user directs another user to perform some action, we label the utterance as Action-Directive.

Example 73.

*User 1.(1) ok leave! and comeback
(DA: ACTION-DIRECTIVE)*

Example 74.

*User 2. (2) well everyone wish me luck on my midterm
(DA: ACTION-DIRECTIVE)*

Example 75.

*User 3.(3) Take a break first!
(DA: ACTION-DIRECTIVE)*

Example 76.

*User 1. (1) Let's move on to Richard's resume now.
(DA: ACTION-DIRECTIVE)*

Example 77.

User 2. (2) you should try to find some riders on there, it would make gas super cheap, and it makes the drive pretty interesting.

(DA: ACTION-DIRECTIVE)

Example 78.

User 3. (3) yeah you should ask them about him, amanda, haha

(DA: ACTION-DIRECTIVE)

An Action-Directive places an obligation upon the listener to respond: either to perform the action as requested or to refuse it. An Action-Directive would often be followed by either Agree-Accept or Disagree-Reject utterances.

C. Conversational Norms

This group of tags deals with the social norms occurring in conversations. We place Conventional-Opening, Conventional-Closing, Thanking and Apology in this category. Selecting a tag from this category automatically selects the Communication-Management Information-Level tag.

C.1 Conventional-Opening

The Conventional-Opening tag indicates that the user is beginning the interaction by using a conventional social phrase to greet another user, or by replying to such a greeting with a conventional phrase.

Example 79.

User 1. (1) Hello Jenny. How are you?

(CL: ADDRESSED-TO-JENNY, DA: CONVENTIONAL-OPENING)

Example 80.

User 2. (2) Hi Alex!

(CL: ADDRESSED-TO-ALEX, DA: CONVENTIONAL-OPENING)

Example 81.

User 3. (3) good evening

Example 82.

User 4. (4) Hi all!

C.2 Conventional-Closing

The Conventional-Closing label is used for utterances in which the user utters a conventional social phrase or expression to finish or wrap up the conversation as seen in the examples below.

Example 83.

*User 1. (1) i'm headed out as well; nice talking to you all!
(DA: CONVENTIONAL-CLOSING)*

Example 84.

*User 2. (2) ok bye bye
(DA: CONVENTIONAL-CLOSING)*

Example 85.

*User 3. ok guys was fungood night!
(DA: CONVENTIONAL-CLOSING)*

C.3 Other-Conventional-Phrase

Social phrases used in conversation that do not fall under the Conventional-Opening and Conventional-Closing categories are assigned this label. These are utterances that are considered appropriate responses in a conventional social setting such as apologies, praise, thanking etc (User 2's utterance in Examples 86, 87 and 88 below).

Example 86.

*User 1. (1) Good luck with your midterm!
User 2. (2) THANKS!!!!!!
(CL: RESPONSE-TO-User1:1, DA: OTHER-CONVENTIONAL-PHRASE)*

Example 87.

*User 1. (1) I am not feeling well at all today.
User 2. (2) I am so sorry to hear that.
(CL: RESPONSE-TO-User1:1, DA: OTHER-CONVENTIONAL-PHRASE)*

Example 88.

*User 1. (1) Hi, how are you?
User 2. (2) Fine, thanks!
(CL: RESPONSE-TO-User1:1, DA: OTHER-CONVENTIONAL-PHRASE)*

In contrast, however, consider Example 89 below. Although the utterance 'thanks, alex!' uses the words 'thanks' that may be an indicator of a conventional phrase, it actually conveys Kara's acceptance of Alex's offer to look up a website and it is coded as an Agree-Accept.

*Example 89.**alex. (1) I will look up the website for you.**kara. (2) thanks, alex!**(CL: RESPONSE-TO-ALEX1, DA: AGREE-ACCEPT)*

C.4 Correct-Misspelling

A Correct-Misspelling tag will be applied to utterances that are entered to correct a misspelling in a previous utterance.

*Example 90.**User 1. (1) Yeah i've heard of that fenomenan becfore**User 1. (2) before***(CL: CONTINUATION-OF-User1:1, DA: CORRECT-MISSPELLING,
IL: COMMUNICATION-MANAGEMENT)**Example 91.**User 2. (1) OK let's have htem both in for interviews**User 1. (2) *them!**(CL: CONTINUATION-OF-User2:1, DA: CORRECT-MISSPELLING,
IL: COMMUNICATION-MANAGEMENT)*

We see in example 91 that the user misspelled the word “them” in the first utterance and the second utterance typed the correct spelling. The second utterance in example 90 and 91 will be labeled ‘correct-misspelling’. Usually such corrections are preceded or followed by an asterisk (*), though this may not always be the case

4.1 Splitting Utterances

It may occur that there is more than one dialogue act in a single utterance by a user. In such cases, annotators need to split the utterance into sub-parts depending on how many dialogue acts are present.

*Example 92.**User1. (1) i don't really have a favorite genre...you on youtube right now?*

In this example, User1’s utterance is clearly composed of two parts: 1. a statement (it could have any tag under the Statements and Responses category depending upon the prior context

of the conversation); and 2. a question. This means there are two dialogue acts occurring in this single utterance.

In order to annotate this utterance properly, the annotator needs to split it into two parts, and annotate each with an appropriate dialogue act tag, as shown below:

User 1. (1.0) i don't really have a favorite genre...

(DA: ASSERTION-OPINION)

User 1. (1.1) you on youtube right now?

(DA: INFORMATION-REQUEST)

Annotators are advised to split utterances only when they deem there are multiple and distinct *dialogue acts* occurring within an utterance.

In Example 93 below, there are multiple sentences in a single utterance. Since all these sentences will be coded as Assertion-Opinion, this utterance does not need to be split.

Example 93.

User 2. (1) I like sushi. I also like sashimi. I actually like all Japanese food.

5. Annotation Category – Local Topics

Local topics are defined as nouns or noun phrases introduced into discourse, and are subsequently mentioned again via repetition, synonym, or pronoun. Any content-bearing noun or noun phrase can be used to introduce a new local topic, and there may be one or more local topics introduced in each dialogue turn.

For this kind of annotation, we are paying attention to noun phrases in the dialogue, and we would like to know when speakers refer back to a previously mentioned item. The annotator is asked to consider each noun phrase in the dialogue and decide whether this noun phrase is new to the dialogue, or whether it is a subsequent mention of some previously mentioned item. We are excluding 1st and 2nd person pronouns (I, me, my, we, us, our, you, your) and names of the participants in the dialogue from this coding. So if the participants in the chat are named *Bob*, *Joe*, and *Fred*, we are not marking them as local topics

After a local topic has been introduced into discourse, it can be referred to again in subsequent mentions. Consequently, we have two main tags in this category: *New Local Topic* and *Subsequent Mention of the Local Topic*.

5.1 New Local Topic (NLT)

Any content-bearing noun or noun phrase can be used to introduce a new local topic, and there may be one or more local topics introduced in each dialogue turn.

User1's turn in Example 94 below contains five noun phrases which haven't been mentioned before (*fundraising, Mark, nanny, Carla, comment*). The annotator should mark each as a *new local topic*.

Example 94:

User 1: (1) Fundraising was Mark, Nanny was Carla, I think, if you were talking about my comment.

(NLT: fundraising(1.1), Mark(1.2), nanny(1.3), Carla(1.4), comment(1.5))

User 2: (2) she's got a perfect driving record and rides horses! coincidence?

(NLT: driving record(2.1), horses(2.2), coincidence(2.3))

User 3: (3) '06 high school grad

(NLT: high school grad(3.1))

5.2 Subsequent Mention of Local Topic

Local topics that are subsequently mentioned in dialogue through repetition are tagged as Subsequent Mentions. A local topic may be mentioned again by repeating the same noun phrase that was used to introduce it or its part, as long as such a reference is unambiguous. A local topic may also be subsequently mentioned by using a synonymous expression, or by using a pronoun. We code each of these cases separately.

5.2.1 Subsequent Mention by Repetition or Synonym (SMS)

Local topics may be mentioned again in dialogue by a speaker repeating the initial noun phrase, a shorter version of it, or another synonymous phrase, as long as such references are unambiguous. Various forms of abbreviated reference are possible, e.g., “school counselor” vs. “counselor” that may require careful consideration of the utterance context in order to decide if they are referring to the same local topic. Annotators are instructed to exercise their best judgment in determining what words and phrases constitute subsequent mentions of local topics.

Example 95: (continuing dialogue from Example 94)

User 1: (4) wanna go thru carlas resume first?

(SMS: carla(1.4); NLT: resume(5.1))

User 2: (5) she graduated high school in '06.

(SMS: high school(3.1))

User 3: (6) I do like how she mentioned tutoring in the nanny job description, though.

(SMS: nanny(1.3); NLT: tutoring(6.1), job description(6.2))

User 1: (7) Carla is CPR/First Aid Certified, which could be very valuable

(SMS: Carla(1.4); NLT: CPR/First Aid(7.1))

User 2: (8) CPR certified

(SMS: CPR(7.1))

We also note that certain compound noun phrases may introduce multiple local topics into discourse (or else may be ambiguous as to which topic is being introduced) e.g., “high school grad” vs. “high school” in the examples above. In such situations we count repetition of a part of the initial phrase as a subsequent mention of one of the local topics introduced by the entire phrase.

5.2.2 Subsequent Mention by Pronoun (SMP)

Subsequent mentions of local topics can also be made using pronouns, such as: *he, she, it, they*, etc. Annotators need to decide which local topic is being mentioned based on previously mentioned local topics, timing of the utterance containing the pronoun, as well as other context.

Example 96:

User 1: (8) she's got a perfect driving record and rides horses! coincidence?

(SMP: she(1.4))

User2: (9): wait a sec- now i see that her college info says MA '08

(SMP: her(1.4); NLT: college info(9.1); MA(9.2))

6. Annotation Category – Valence of Meso-Topics

While most local topics have low granularity and they tend to come and go as the discourse progresses, some topics, which we call *meso-topics*, will persist through a number of turns and become focus of a part of conversation. A selection of meso-topics is closely associated with the task in which the discourse participants are engaged. For example, in when the task is to select a candidate for a job, the name of each applicant becomes a meso-topic. Meso-topics can be distinguished from the local topics because the speakers often make polarized statements about them. Therefore, an important criterion of deciding if something is a meso-topic is presence of polarized statements about it by any of the discourse participants. In Example 97, User1 introduces two local topics, one of which is the name of a job applicant

(Mark). Moreover, in a subsequent utterance, User2 makes a positive statement about him (“I like that he...”). Each of these suggests that “Mark” is a meso-topic in this dialogue.

Example 97:

User 1: (1) Ok, resume for Mark

(NLT: resume(1.1), Mark(1.2); M-Topic: Mark)

User 2: (2) I like that he mentions "Volunteerism and Leadership"

(SMP: he(1.2); NLT: Volunteerism and Leadership;

M-Topic: Mark; Polarity: positive)

User 1: (3) but if they're looking for someone who is experienced then I'd cross him off

(M-Topic: Mark; Polarity: negative)

In this annotation category the task is to determine for each utterance in the dialogue if it contains a reference to a meso-topic and decide its valence. A meso-topic may not be present in every utterance. Annotators can use *any string of words* to name a meso-topic but they should stay as close as possible to how it is referred to in the dialogue. In particular, the task description (which is supplied along with the discourse transcript) will suggest the key topics of the conversation that need to be addressed in order to solve the task and about which decisions need to be made. For example, in a job candidate selection task, each candidate becomes a meso-topic; similarly, in a dispute settlement the main parties: the accuser, the defendant, the witnesses and opinion-holders are meso-topics. Once a meso-topic is chosen, the annotator must decide its valence by assigning an appropriate polarity tag to the utterance.

An utterance is polarized if it expresses sentiment or valence that a speaker assigns to the meso-topic. Valence can be positive or negative, or in absence of any obvious polarity, it may be neutral. A positive polarity tag is used when an utterance is expressly in favor of the meso-topic, or if it supplies favorable or supporting information about it. A negative polarity tag is used when an utterance is expressly against the meso-topic, or if it supplies unfavorable or negative information about it. If an utterance is neither positive nor negative the neutral polarity tag should be used.

Example 98:

User 1: (1) so do i, it seems that james is a good candidate.

(M-Topic: James; Polarity: positive)

User 2: (2) he's had some good work experience

(M-Topic: James; Polarity: positive)

User 3: (3) but his jobs seem to be irrelevant to cashier position

(M-Topic: James; Polarity: negative)

In rare situations, longer utterances may contain references to multiple meso-topics with different valences, in which case the utterance splitting procedure should be followed (see section 4.1 of this guide), so that each meso-topic may be assigned the correct polarity tag.

Example 99:

User 1: (1.1) I'll vote Carla, it would be nice to call her

(M-Topic: Carla; Polarity: positive)

User 1: (1.2) and Richard up at least, though.

(M-Topic: Richard; Polarity: neutral)

In the above utterance by User 1, two meso-topics are mentioned: Carla and Richard. We split the utterance into two segments in order to (1) tag their presence and (2) capture their distinct valences.

7 Summary of Annotation Categories

Communicative Links

Annotation Type	Description
Addressed-to	Indicates which user the current utterance is directed to
Response-to	Indicates which previous utterance the current utterance is a response to
Continuation-of	Indicates that the current utterance is a continuation of which previous utterance

Information Level

Category	Description
Task	Utterance pertains to the task at hand
Process-Management	Utterance pertains to planning, advancing or summarizing the task
Communication-Management	Utterance pertains to the process of communication or maintaining the communication.

Dialogue Acts – Statements and Responses

Category	Description
A.1 Assertion-Opinion	Making a statement or expressing an opinion
A.1.1 <i>Assertion-Opinion</i> -> Response-Answer	An utterance that satisfies an information-request or a confirmation-request
A.1.2 <i>Assertion-Opinion</i> -> Response-Non-Answer	An utterance that does not satisfy an information-request or a confirmation-request (I don't know/I'm not sure)
A.1.3 <i>Assertion-Opinion</i> -> Agree-Accept	Agrees with or accepts what the previous utterance states
A.1.4 <i>Assertion-Opinion</i> -> Disagree-Reject	Disagrees with or does not accept what the previous utterance states
A.2 Offer-Commit	User has offered to or is committed to do something
A.3 Acknowledge	Acknowledges that this user has seen or read the previous user's utterance or giving a cue to the previous user to continue.
A.4 Signal-Non-Understanding	When a user indicates that the previous users' utterance has not been understood by them.

Dialogue Acts – Questions and Directives

Category	Description
B.1 Information-Request	User has requested some new information
B.2 Confirmation-Request	User asks to confirm some detail, usually the response to this type of utterance is Yes/No
B.3 Action-Directive	User has asked or directed another user to do something

Dialogue Acts – Conversation Norms

Category	Description
C.1 Conventional-Opening	Conventional social phrase that initiates the conversation
C.2 Conventional-Closing	Conventional social phrase that ends the conversation
C.3 Other-Conventional-Phrase	Conventional social phrase that occurs in the conversation, but does not begin or end it
C.4 Correct-Misspelling	This utterance corrects a misspelling in a previous utterance

Local Topics

New Local Topic tags are assigned to all content-bearing noun phrases introduced into discourse for the first time. Any subsequent mentions of a local topic, through repetition, synonym, or pronoun, are tagged as Subsequent Mentions of this topic.

Valence of Meso-Topics

Meso-Topics persist through a number of turns and are focus of a part of conversation. Such turns are tagged with meso-topic tags, which are named by the annotator. For each turn containing a meso-topic, its valence is tagged as positive, negative, or neutral.