Brief Overview of Social Deliberative Skills[1]

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Abstract. Social deliberative skill is the capacity to deal productively with heterogeneous goals, values, or perspectives, especially those that differ from ones own, in deliberative situations. In other papers we describe our team's initial results in exploring this domain, which includes evaluating software features hypothesized to support SD-skills in participants, using machine learning and text analysis methods to recognize SD-skills and other indicators of deliberative quality, and prototyping a Facilitators Dashboard to help third parties get a birds-eye-view of important aspects of an online deliberation so that they can better help participants bring SD-skills to bear within dialogues on controversial topics. In this paper we take the opportunity to expand upon the nature and importance of SD-skills as we currently understand them at a more theoretical level.

Keywords: social metacognition; deliberative dialogue; reflective reasoning; e-learning.

1. Introduction

For about three years our research team has been engaged in studying how to support "social deliberative skills" (SD-skills) in online dialogue (applicable to educational, civic, and workplace contexts). Though the construct of SD-skills overlaps with other skills and capacities, such as metacognition, critical thinking, collaboration skills, and reflective reasoning, it is its own construct, points to an important and understudied area of human capacity, and requires new research to understand it. In other papers we describe our team's initial results in exploring this domain, which includes evaluating software features hypothesized to support SD-skills in participants (Murray et al., 2013a), using machine learning and text analysis methods to recognize SD-skills and other indicators of deliberative quality (Xu et al. 2012, 2103), and prototyping a Facilitators Dashboard to help third parties (facilitators, teachers, mediators, etc.) get a birds-eye-view of important aspects of an online deliberation so that they can better help participants bring SD-skills to bear within dialogues on controversial topics (currently in the context of discussion forums) (Murray et al. 2013b).

[1] Excerpts from a longer paper, in which there are many more references than fit in this extended abstract.

In the discussion section and also in the conference presentation we will summarize our research results, but in this paper we take the opportunity to expand upon the *nature* and *importance* of SD-skills as we currently understand them at a more theoretical level. We also reflect the indeterminacies inherent in defining such psychological constructs.

2. Social Deliberative Skills

The capacity to flexibly and productively negotiate differences of opinion, belief, values, goals, or world-views, is of critical importance in today's world. In the increasingly global world the economic productivity and security of nations can be linked to citizens' and leaders' capacity to understand and deal productively with diverse perspectives. King & Baxter (2005, p. 571) note that "in times of increased global interdependence, producing interculturally competent citizens who can engage in informed, ethical decision-making when confronted with problems that involve a diversity of perspectives is becoming an urgent educational priority…however [these skills] are what corporations find in shortest supply among entry-level candidates."

The capacity to engage skillfully in dialogue with conflicting opinions is important in all realms of social activity including international politics, civic engagement, collaborative work, and mundane familial squabbles. We have coined the term "social deliberative skill" to indicate *the capacity to deal productively with heterogeneous goals, values, or perspectives, especially those that differ from ones own, in deliberative situations*.

Many communication and collaboration interactions now take place on the Internet, which is becoming a ubiquitous global social communication medium. This research investigates how to support the use of social deliberative skills within online communication. Our focus is on supporting mutual understanding and high quality satisfactory outcomes between individuals and/or groups who are communicating with online tools, and much of what we find should be applicable to the support of more skillful deliberation in online work and communication generally. Our overall research goals are to better understand, assess, and support SD-skills in online contexts. We also believe that such skills honed in an online context will partially transfer to other aspects of life. We are interested in investigating online features, tools, and methods that afford, prompt, or gently support SD-skills, rather than teaching them outright.

We differentiate our research from others that focus on argumentation, which aims to help learners generate logical, well-formed, well-supported explanations and justifications. These are certainly important skills, but they are often framed in objective rather than intersubjective (or even ethical) terms. That is, they are about finding the right answer or the most efficient and effective solution to a technical or scientific question—but don't adequately address the specific moments of deliberation or collaboration where opportunities for mutual understanding and mutual recognition arise. They are often studied in the context of problem solving or collaborative work. We also differentiate our work from educational research on creativity, innovation, and collaboration that is framed in terms of pooling ideas and synergizing the best out of

them, while often ignoring the skills needed to navigate the challenging straits of controversy, conflict, world-view unfamiliarity, and misunderstanding. We might call the context that we are interested in "difference-motivated social deliberation/inquiry" to highlight the starting point of intersubjective tension. For this research we focus on these social deliberative skills or capacities.

Both the literature on creative problem solving and the literature on civic deliberation emphasize the importance of having diverse perspectives represented in collaborative processes, but scholars on these fields do not always acknowledge the skillfulness needed to work productively with these differences. Meanwhile, in educational research (including educational technology research) there is significant focus on cognitive skills such as metacognition and argumentation, and also considerable research in collaboration, but little work in the specific area addressed by SD-skills.

For this research we will focus on the following social deliberative skills or capacities, which are seen repeatedly in the literature (described using a variety of terms):

1. Social perspective taking (includes cognitive empathy, reciprocal role taking)
2. Social perspective seeking (includes social inquiry, question asking skills);
3. Social perspective monitoring (includes self-reflection, meta-dialogue); and
4. Social perspective weighing (related to "reflective reasoning" and includes comparing and contrasting the available views, including those of participants and external sources and experts).

Capacities implied in the above include: tolerance for uncertainty, ambiguity, disagreement, paradox; and the ability to take first, second, and third-person perspectives on situations or issues (i.e. subjective, intersubjective (you/we/they), and objective).

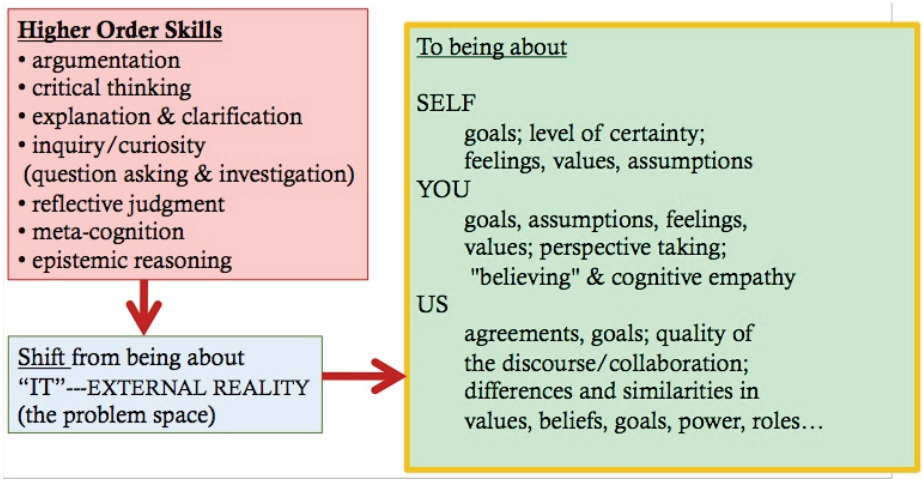

Figure 1: Conceptual Framework for Social Deliberative Skills

Our theoretical frame for these skills is that they involve the *application* of cognitively oriented higher order skills to thinking about the perspectives (or beliefs or arguments) of others (and consequently, of self as well). See Figure 1. When one turns the reflective lens from purely objective ideas about the world toward reflecting on the ideas of specific others (individuals or groups) that one is deliberating with,

challenges arise that are beyond the purely cognitive/rational.[2] One is not only reflecting on disembodied ideas but upon *my/our/your/their* ideas. Yet, as forms of reflection, the skills involved are not purely emotional or social. These are critical yet under-explored (and under-supported) moments in collaborative learning, knowledge building, and deliberation in general. Social deliberative skills include reciprocal perspective taking (or cognitive empathy), active perspective seeking (e.g. question-asking skills), self-reflection (e.g. reflecting on one's biases), and meta-dialogue (corrective reflection into the quality of a deliberation or collaboration).

Table 1 illustrates the hand-coding scheme we have been using to code SD-skills.[3] Codes beginning with an underscore are meta-codes subsuming those hierarchically beneath them. Our research on dialogue quality focuses on the first two columns, though we may use codes from other columns as covariates. Though we have defined a number of Argumentation Codes (right column) we do not currently code for them individually (we code them all as ARG_GEN) because, as mentioned, we are interested in intersubjective and reflective skills rather than the argumentation skills per se.

SD-skill -- CORE Set	**Additional Delib. Quality Indicators**	**MISC CODES**	**ACTION NEGOTIATION**	**ARGUMENT CODES**
SELF_REFLection	_META_TOPIC	Q_TOPIC	(External actions)	_ARGument_GENeric
_INTERSUBictive	WEIGH	OTHERS_THNK	ActRequest	
Q_INTERLocutor	SYSTEMs_thinking		ActPropose	GENERAL_SOLUTN
REF_INTERLocutor		HELP	ActAccept	EXPER_OBSERV
PERSPECTIVE_taking	FACT_cite_SouRCe	REQ_HELP	ActDecline	ARG_OPINION
_META_Dialog	SOURCE_REFerence	PROCESS	ActNegot	SUPPORT
MEDIATE			(Dialogue_Actions)	SUM_MY-argumt
META_CONS	CHANGE_mind	AGREE	DI_ActRequest	EXAMPLE
META_CONFL	UNCERtainty	DISAGREE	DI_ActPropose	ELAB
META_SUM	APOLOGY		DI_ActAccept	
META_CHECK		_NEGative-emotion	DI_ActDecline	*low-skill:*
APPRECiation		NEGEMO_INTerloc	DI_ActNegot	OPINION_ONLY
		NEGEMO_Topic	(Facilitators only)	OVER_GEN
		_OFFTOPIC	WELCOMING	FACT_NOSRC
		TECHnical	PROC_EXPL	
		SOCIAL	MOTIVATE	

Table 1: Text Coding Scheme

This scheme synthesizes prominent frameworks found in the literature (Black et al., 2011; Klein, 2010; Stromer-Galley, 2007; Stolcke et al., 2000) and adds codes for dialogue quality specific to SD-skills. It is most closely related to what has been called "social metacognition" (Salonen et al., 2005; Lin & Sullivan, 2008; Joost et al., 1998; Mischel, 1998). We are in the process of comparing it to King and Kitchener's Reflective Judgment measurement (King & Kitchener, 1994).

[2] Studies of the HOSs in Figure 1 do sometimes include the intersubjective dimension, but the figure highlights how to focus exclusively on it.

[3] Cohen's Kappa Interrater reliability measure for this coding scheme is 71%, (76% agreement) averaged over five dialogue domains we have used it in (this level is considered "good" and is particularly good given the complexity of our coding scheme).

3. Discussion

In this paper (and more in the extended version) we have argued for the importance of studying social deliberative skills, we have differentiated this construct from related ones, and have illustrated how we measure it. We are applying this work to the study of deliberative dialogue in several online domains: classroom discussions of controversial topics, e-commerce and workplace disputer resolution, and civic engagement dialogue. In our studies of how scaffolding features support social deliberative skills we found that reflective tools showed a significant difference with large effect size (Murray et al. 2013a). We have made progress in using text analysis tools (CohMetrix, Graesser et al. 2010) and LIWC (Pennabaker et al. 2007) and machine learning algorithms to categorize social deliberative skill automatically (see Xu et al. 2012, 2013).

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