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## Itineraries of Identity in Undergraduate Science

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*Building on recent linguistic-anthropological work that investigates the temporalities of educational processes, the article examines how a marginalized classroom identity is interactionally formed over time in an undergraduate chemistry laboratory. The analysis demonstrates how social marginalization is enacted along multiple temporal scales via stance taking, participation frameworks, and intertextuality. The findings indicate that the paths that identities travel may not be mapped out entirely in accordance with scholarly expectations. [identity, interaction, science, teasing, undergraduates]*

A number of researchers concerned with linguistic anthropology, education, or both have argued for the necessity of paying attention to the trajectories of discourse, social action, and identity within as well as across events at multiple timescales, to arrive at a broader understanding of how fleeting interactions in time and space build up into enduring sociopolitical structures and processes (Agha and Wortham 2005; Lemke 2000; Silverstein and Urban 1996; Wortham 2005). Drawing on such work, this article examines how participants in everyday situated activities of educational practice carry out identity work through the participation frameworks they construct and the stances they take over time. Both participation frameworks and stances are quintessentially interactional phenomena—constituted, transformed, and dissolved in unfolding discourse. As the interactional structures whereby social activity, including talk, is organized, participation frameworks establish the temporary, fluid roles or positions that social actors occupy in the course of interaction, from full-fledged participants to chance bystanders (Goffman 1981; Goodwin and Goodwin 2004). Meanwhile, through stances, or intersubjective displays of emotion, knowledge, and evaluation, speakers position themselves and others in relation to ongoing talk and activity (Du Bois 2007; Ochs 1990). As these resources pattern temporally across interactions, once-flexible participation frameworks may become fixed into more rigidly assigned roles, and fleeting interactional stances may accrue into enduring identity positions of self and other (Bucholtz and Hall 2005). In this process the potentialities of emergent discourse trajectories harden into *itineraries of identity*, or well-worn ideological routes along which socially positioned subjects may be compelled to travel.

At the same time, because the practices that emerge in the context of cultural activities are locally contingent, it is impossible to anticipate with certainty the endpoint of the trajectories of identity that are thereby launched. By tracing the route whereby a male student in an undergraduate instructional science laboratory becomes socially and academically marginalized by his female lab partners, the analysis shows that the trajectories of gender identity and social marginalization in this context are not necessarily predictable from most previous scholarship on gender and science—or, for that matter, from feminist political commitments to educational equality. The analysis demonstrates that a solid empirical grounding for theory and politics requires a focus on cumulative as well as momentaneous social action and on the locally contingent practices that emerge in the context of cultural activities.

## **Social Marginalization in Educational Settings**

Previous research within the linguistic anthropology of education has documented practices of peer marginalization in a wide range of elementary and middle-school contexts, such as the ridiculing of a monolingual Spanish-speaking boy by bilingual peers in a second-grade classroom in Arizona (Cashman 2008), the schoolyard teasing of a working-class African American girl by a racially and economically mixed group of students in upper elementary grades in California (Goodwin 2002), the mockery of an academically less successful Greek boy by a Greek girl and a Turkish-speaking Romani girl in an Athens primary school (Lytra 2009), and the insulting comments of Maryland middle-school science students toward an African American boy with a strong initial interest in science (Wortham 2008). All of these studies demonstrate that the identity positionings that are imposed on socially marginalized students are emergent accomplishments that form over time, rather than being realized in a single interaction or speech act. Moreover, in each of these studies the participants are positioned along multiple dimensions of social difference that could potentially be activated by them or by the analysts, including race, ethnicity, class, language, youth style, and gender. As the interaction proceeds, some of these dimensions move to the foreground while others remain backgrounded. In addition, it is striking that in all of these studies, girls figure prominently as social actors who enforce the marginalization of others in same-gender as well as mixed-gender groups, although this is an issue that is not always thematized in the researchers' analysis.

Based on previous interactional studies of women in education—especially in contexts in which they are still a numeric minority, as in many of the sciences (Hill et al. 2010)—it might be expected that female students would be the targets, rather than the agents, of social marginalization. Indeed, earlier studies of scientific and engineering fields in which there is a gender imbalance found that women were the targets of persistent marginalizing practices that could drive them out of science altogether. In Conefrey's (1997) study of gender and power in a life sciences laboratory, for example, female interviewees described their peripheral status in meetings of male-dominated lab groups; they variously reported that male group members treated them as invisible, incompetent, or responsible for anything that went wrong with experiments. Other interactional research from the same time period reported that many women in undergraduate science had similar experiences (e.g., Bergvall and Remlinger 1996).

Our own data of peer interaction during an undergraduate chemistry instructional lab class conforms more to the patterns of gendered marginalization found in recent research with younger students than to those of adult speakers in earlier interactional studies of gender and science. Over the three-month academic term of the class, one male student acquired a durable identity, imposed by his two female lab partners, as a weak science student who was marginal to their classroom activities. Unlike in most previous research, these acts of peer marginalization were usually performed in a relatively joking key and framed as friendly teasing, yet they were nonetheless consequential for the recipient's status within the class. Although some researchers have argued that the main function of humor in laboratory talk among students is to maintain solidarity (e.g., Tapper 1999), it is apparent that humor and teasing may serve other purposes, not all of them positive for all participants.

The following analysis demonstrates how this process of marginalization developed along multiple timescales: in the course of brief interactions lasting only minutes, over the three-hour period of a lab session, and during the span of several weeks in a single class. Social repositioning was accomplished at all three temporal levels through the reconfiguration of participation frameworks as well as through forms of stance taking, particularly overt evaluation. Moreover, as part of this process, past and present were temporally

juxtaposed via the semiotic deployment of intertextual resources from popular culture. The resulting arrangement of gender and power, which may be surprising from the perspective of most previous research on women in science at the higher education level, sounds a cautionary note against privileging researchers' theoretical or political commitments over the enacted concerns of cultural agents. At the same time, it suggests that gendered patterns of interaction in science may be shifting, rather than disappearing, after several decades of efforts to promote gender equality. Such outcomes indicate the importance of tracking interactional practices over time if scholars are to understand the complexity of identity in educational settings.

The data analyzed in this article are taken from ethnographic research conducted in 2006–10 among undergraduate mathematics and science majors at a public research university in Southern California. The study yielded 439 hours of video and audio interactional data involving 118 focal participants from a larger group of 496 participants. These data were supplemented by ethnographic interviews with study participants and an online survey of undergraduate science majors about their science background, interests, and academic performance.

The focus of the present analysis is a series of interactions among members of a single lab group during weekly instructional laboratory sessions in a first-year chemistry class for high-achieving students. The group comprised a male physics major, Bill, and two female chemistry majors, Christie and Molly.<sup>1</sup> Over the course of the ten-week class, as the three lab partners jointly carried out prescribed experimental procedures, the women's teasing habitually positioned Bill as an incompetent chemistry student. As it happened, Bill's grades were often comparable to and at worst only slightly lower than those of either of his lab partners, a fact that both women were aware of, given the group's frequent and open discussions of their grades. Yet Bill's academic performance did not inoculate him from teasing about his role performance in lab activities. The examples below document how Christie and Molly shifted from initially acknowledging Bill as a competent classroom member to imposing on him a socially and academically marginalized persona through habitual mockery and criticism.

### Participation, Stance Taking, and the Reconfiguration of Identity

The transformation of Bill's classroom identity from competence to marginalization was rapid but not immediate. Two weeks into the academic quarter, he was still included as a more or less equal member of the group. Example 1 takes place following the group's PowerPoint presentation to the class reporting the results of an experiment they conducted. The students were required to discover the composition of an unknown chemical solution using a flame test, in which a substance is identified based on the color emitted when it is heated with a gas flame. After Christie presents the group's conclusions, Bill asks, "Any questions?" and then points to a student who asks how the group identified the cations in the solution (i.e., positively charged ions, such as magnesium and calcium, as opposed to anions, or negatively charged ions). Christie begins to answer but is interrupted by Molly<sup>2</sup>:

Example 1. "Flame Test," Honors General Chemistry Lab, October 18, 2007, 00:02:53–00:03:24

- |   |                                     |                                                                         |
|---|-------------------------------------|-------------------------------------------------------------------------|
| 1 | Christie: U:m,                      | <i>&lt;Molly looks at Bill and swings left arm toward him twice&gt;</i> |
| 2 | when we placed a bit of<br>[1 ou:r, | <i>&lt;opens arms, one downward beat with right hand&gt;</i>            |
| 3 | s::- 1]                             | <i>&lt;looks at Molly&gt;</i>                                           |
| 4 | Molly: [1 Christie. 1]              | <i>&lt;looks at Christie&gt;</i>                                        |

5	(0.8)	<looks and points left hand at Bill>
6	°Want to go for it?°	<smiles at Bill; Christie drops hands, looks down, smiling, and takes two steps back>
7	Bill: Well,	
8	(0.5)	
9	that was uh,;	<extends right arm>
10	determined by the <u>flame test</u> ,	<crosses arms; Bill and Molly turn toward Christie, smiling>
11	(°Christie:.)	<points toward Christie>
12	####,°	<looks front; Christie and Molly look at Bill, smiling>
13	But,	<extends right arm, palm down>
14	Molly: @@	
15	Bill: uh,;	
16	the flame test burned no <u>color</u> ?	<raises right palm upward>
17	and that,	<Molly stops smiling; continues looking at Bill>
18	eliminates,;	<brings hands together, palms up>
19	Like when it-	
20	you <u>burn</u> ,	
21	every other,;	<extends right hand, spiral gesture with index finger>
22	^cation,	<points with index finger>
23	would burn,	<extends both hands, palms up>
24	a <u>color</u> ,	<one beat with both hands>
25	like lavender.	<one beat with both hands>
26	Or <u>yellow</u> .	<drops left hand, one beat with right hand>
27	But,	
28	it didn't.	<one beat with right hand>
29	It burned no <u>color</u> which,	<extends both hands, palms up>
30	eliminates everything <u>except</u> ,	
31	magnesium,	<one beat with right hand>
32	and calcium.	<one beat with left hand; Molly nods>
33	And then,;	<glances at Molly>
34	from there,	
35	we could,	<extends right hand, palm down>
36	get,	
37	an anion.	<turns right palm up, points>
38	(1.8)	<extends both hands, palms open>
39	So.	<Molly nods>

Bill's response to the question beginning in line 7 displays knowledge and competence in several ways. Earlier, he already took charge of the question period through both speech and action, inviting questions and gesturally recognizing the first questioner before Christie begins to answer. Thus, when Molly instead nominates Bill to answer the question, he readily does so, drawing on the scientific register of chemistry both syntactically, through the use of the passive voice (*that was uh:, determined by the flame test*; ln 9–10), and lexically, through the use of formal, polysyllabic words such as *determined* (ln 10) and *eliminates* (ln 18). In addition, he employs the specialized vocabulary of chemistry (e.g., *flame test*; ln 10). Although he is not entirely able to sustain the formal style with which he begins his answer, his use of the scientific register indexes his familiarity with the conventions of scientific discourse. Finally, Bill's response is generally fluid in its delivery, with no lengthy hesitations or other signs of difficulty, and he is able to explain the details of the experimental process clearly and correctly, as signaled by Molly's nods (ln 32, 39), and he successfully answers a second question immediately after this example. In the relatively formal, public context of this presentation, Bill uses a range of resources to display scientific expertise.

Nevertheless, there is evidence that Bill's classroom identity is already undergoing a shift at this early point in the term. To be sure, Molly intervenes to ensure that Bill, rather than Christie, answers their classmate's question, which involves Bill's portion of the presentation. However, the form of her invitation, *Want to go for it?* (ln 6), although

conveying encouragement, does not presuppose that Bill is willing and able to provide an adequate answer, and her nods, while signaling agreement, may also function as an evaluation of Bill's response. Both Molly's effort to include Bill and her implication that he might not be up for the task hint at a key issue for this group: Molly and Christie's view that Bill did not contribute his fair share to lab activities.

This issue came to the fore some 20 minutes after the students' classroom presentation in Example 1, as the group prepared to carry out their weekly lab assignment. In the instructional lab, the teaching assistant chose to divide the work of experimentation into three discrete roles: the experimental prep role, which involved setting up equipment and materials needed for the experiment; the recorder, who documented each step in the experiment and its result in a lab notebook; and the team leader, who oversaw the experiment as a whole and reported the outcome to the teaching assistant. Each of these tasks was assigned to one member within each lab group, with different members fulfilling different roles from week to week. Hence some negotiation was required at the beginning of every lab session to determine who would play each role. In addition, although the group members often explicitly invoked these roles and their accompanying responsibilities, in practice students tended to share at least some tasks regardless of their assigned role. In Example 2, Christie is in charge of experimental prep, Molly is the recorder, and Bill is the team leader. Before the example begins, the students have been talking about their grades on a quiz that the teaching assistant has just returned to them, and Molly and Christie have then begun to discuss the need to wash a beaker for the experiment.

Example 2. "He's Supposed to Lead," Honors General Chemistry Lab, October 18, 2007, 00:26:03–00:26:35

1	Christie:	Bill,	<turns head to Bill, who is writing in his lab manual at the workbench>
2		clean one for {me}. <breathy>	
3		Or Molly.	<picks up beakers>
4		Or [someone,]=	<walks to sink>
5	Molly:	[I'll help. ]=	<Molly grasps flask>
6	Christie:	since there's three.	
7	Molly:	Since Bill seems to be,	<Molly walks to other sink>
8		not able to do <u>anything</u> these days.	
9	Christie:	Well,	<puts soap in beaker>
10		he <u>is</u> our group leader.	<turns on faucet>
11	Molly:	But he's supposed to <u>he:lp!</u>	<Christie dumps water out of beaker>
12	Christie:	No,	<looks at Molly>
13		he's supposed to <u>lea:d.</u>	
14	Molly:	Recorder's just supposed to	<Molly looks at Christie, then back to flask she is washing>
15		reco:rd then,	
16	Christie:	ri:ght?	
17		Sh:ut up,	<Christie looks at Molly and smiles; Bill turns from workbench and approaches, smiling>
18	Molly:	Molly.	<Molly looks at Christie, smiling>
19	Bill:	@@@	
20		No,	<Bill moves to stand between Molly and Christie, looking at Molly>
21		re↑corder does a:ll the	
22		[work. ]	
23	Molly:	[Remember,]	<looks at Christie>
24		we're miked,	
25	Christie:	Christie. @	<adjusts goggles; Bill smiles>
26	Christie:	@h!	<Bill turns to Christie; Christie looks at Molly with open mouth>

Before the example begins, the women have framed the experiment as a joint activity by using first person plural pronouns as they negotiate the steps the group must carry out, an

orientation also seen in their initial management of the group members' roles. Although Christie is assigned to experimental prep, she tries to enlist the others to assist her, appealing first to Bill and then to Molly. However, both women frame experimental prep as primarily Christie's responsibility: Christie hedges her imperative by presenting it as a favor (*clean one for me*; ln 2), and Molly characterizes her own participation in the activity as "help" (ln 5).

In contrast to the focus on shared roles and joint activity in this initial portion of the interaction, when Bill does not respond to Christie's request, the women's attention shifts to his own activity—or, rather, his perceived inactivity—which quickly becomes the object of stance taking. Thus, Molly accounts for her assistance to Christie by asserting that Bill "seems to be, not able to do anything these days" (ln 7–8), a temporally framed general characterization that questions Bill's ability to perform not just the task at hand but any task at all. When Christie excuses Bill, maintaining that his role as group leader does not necessarily require him to do experimental prep, Molly first argues that it is his obligation to "help" (ln 11) and then suggests that she herself need not perform any tasks outside her own role as recorder (ln 14–15).

Bill, who is writing in his lab manual at the workbench for most of the above example, is primarily involved in the interaction as a mere stance object (Du Bois 2007) who is discussed in the third person, despite being within earshot of Christie and Molly's conversation. Through their pointed talk, the two women constitute Bill as a peripheral member of their participation framework. Indeed, when he enters the interaction to issue a teasing remark to Molly (ln 19–20), his comment receives no uptake, and the women do not acknowledge his presence through either talk or gaze as they banter with each other. Although this example takes place early in the term, Bill is already marginalized, quickly moving from his relatively equal status within the group presentation to a more peripheral position, both physically and interactionally: his role performance in the lab activity is vulnerable to both generalized and specific negative assessments, he is the recipient of direct commands, he is spoken about more than spoken to, and he is ignored by both women (which may also be partly because of his disengagement from their conversation earlier in the interaction).

This asymmetry between Bill and the other two members of the lab group becomes even more apparent in the next example, which takes place two weeks later. Before Example 3 begins, the students have been in the middle of an experiment when Molly accidentally spills acid on her hand. She runs to the sink and starts washing her hands while Christie and Bill remain at the workbench, out of view of the camera. Still at the sink, Molly calls out to her lab partners to keep working. Christie and Bill do not do so, however, and approximately a minute later the following interaction unfolds:

Example 3. "Inequality," Honors General Chemistry Lab, November 1, 2007, 1:08:45–1:09:19

- |    |           |                                     |                                                                                                                                                   |
|----|-----------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Molly:    | It started <u>b</u> urni@ng.        | <i>&lt;standing at sink, rubbing hands with soap while turned toward Bill, smiling and looking at hands; Christie is looking at workbench&gt;</i> |
| 2  |           | So that's why I,                    | <i>&lt;Christie turns&gt;</i>                                                                                                                     |
| 3  |           | threw that stuff at you and said,   | <i>&lt;Christie joins Molly and Bill&gt;</i>                                                                                                      |
| 4  |           | "U:h.                               | <i>&lt;Christie pushes up jacket sleeves&gt;</i>                                                                                                  |
| 5  |           | Do this."                           |                                                                                                                                                   |
| 6  | Christie: | <i>&lt;creaky voice&gt;</i> {Yeah.} | <i>&lt;moves to sink&gt;</i>                                                                                                                      |
| 7  | Molly:    | So that's why I'm saying,           | <i>&lt;Bill turns toward workbench; Molly looks at Christie&gt;</i>                                                                               |
| 8  |           | <u>y</u> ou have to keep working?   | <i>&lt;Bill turns toward Molly; Molly looks at Bill, nods twice; Christie soaps hands&gt;</i>                                                     |
| 9  |           | That would be <u>g</u> ood.         | <i>&lt;nods twice; looks at sink&gt;</i>                                                                                                          |
| 10 | Christie: | We will.                            | <i>&lt;washing hands&gt;</i>                                                                                                                      |

11	Bill:	Get <u>w</u> orking.	
12	Christie:	Shut up Bill.	
13	Molly:	@@	<looks at Bill, rubbing hands>
14		I'm o@nly allowed to yell at you _gu@ys:.	
15	Bill:	####	<turns to workbench>
16	Christie:	I think I should be allowed to yell at Bi:ll.	<looks at Molly; Molly smiles>
17	Molly:	O@ka@y.	<tilts head back, looks at Bill>
18	Bill:	####	<turns partly toward Molly, smiling>
19	Christie:	@@@:	
20		[@@@]	<Bill turns back to workbench>
21	Molly:	[@@@]@:	<Bill moves to his lab manual and reads>
22		@@	<Molly turns toward sink, still rubbing hands>
23		We're like an inequa:lity.	<turns head toward Christie and Bill, smiling>
24		@@@@@@:	
25		Bi@ll is le@ss than Chri@stie,	
26		which is le@ss than °Mo@:lly.°	<leans toward Christie; Christie and Molly look at each other>
27	Christie:	h:	<turns away from Molly>
28		(2.5)	<Molly laughs silently; Christie reaches for paper towel, shakes head slightly, smiling>
29	Molly:	Ya::y,	
30		I lo@ve inequal@i[ti@es!]	<jumps up and down twice, clapping hands>
31	Christie:	[h: ]	<turns to right, drying hands; Bill turns head to look at Molly>
32		I don't.	<Molly turns to look at Bill>
33	Molly:	He missed it.	<Molly looks at Christie; Christie turns to Bill>
34	Bill:	I <u>h</u> ate you guy:s.	<Christie smiles at Bill>

In lines 7 through 9, Molly, who often assumed a leadership role in the group's lab activities, admonishes her partners to keep working while she attends to her (minor) injury. After Christie acquiesces to Molly's instructions, Bill playfully issues a command to Christie as well. In the joking power struggle that ensues, Molly ultimately claims authority over both Christie and Bill, and Christie claims authority over Bill (ln 12–17). Molly then formulates the group's interaction in terms of a basic mathematical relation, an inequality, a move that indexes her scientific identity as well as allowing her to humorously reassert her superiority over her lab partners. Her extensive display of appreciation of her witticism, however, does not receive strong alignment from either Christie or Bill. Molly's final remark to Christie, *He missed it* (ln 33), thus serves in part to realign the two women by excluding Bill from the joke; once again, as in Example 2 above, this act of exclusion is accomplished both through the mocking content of the comment and through the use of the third person to refer to Bill, a grammatical strategy that withholds full participant status from him. In turn, Bill's stance-taking retort (*I hate you guy:s*; ln 34) resists Molly's teasing but further reinscribes the division between himself and the others by referring to them in the second person plural. As before, Bill's marginalization is also carried out through the participants' embodied activities, as Christie physically aligns with Molly by joining her at the sinks while Bill stands at the workbench, separated from the others. Here and throughout our data, even when Bill resists the women's teasing or attempts to tease them in his own right, his efforts do not alter his standing within the group, for neither Christie nor Molly grants these contributions full uptake.

The above examples trace the process through which Bill's classroom identity was transformed from an ordinary member of the lab group to a problematized and marginal figure within the span of a few weeks. This shift is evident not only across class periods but also within a single lab session (as seen in Example 1 vs. Example 2), and the interactional roots of the shift are visible and audible within each example, as Bill's lab partners



subjected him to overt evaluation and withheld from him the status of fully ratified participant through both linguistic and embodied resources. The stances and participation frameworks that Christie and Molly jointly constructed through their habitual teasing of Bill were sometimes accompanied by another resource that enabled their work of social positioning. This resource, intertextuality, introduced yet another scale of temporality, as a popular culture text from the students' childhoods was recirculated within the lab setting.

### Intertextual Figuration and Social Marginalization

The recontextualization of texts, together with the accompanying resignification of their interactional function and ideological meaning, is the fundamental mechanism of intertextuality (Bakhtin 1981; Briggs and Bauman 1992). Moreover, this process is also one of intertemporality, because recontextualization necessarily involves the insertion of the past into the present. Widely shared cultural texts may carry special resonance, importing not only previous discourse but also the previously established personae associated with them. Thus, intertextuality can be interactionally exploited for identity work through *intertextual figuration*, the recontextualizing practice of semiotically linking a familiar persona or character to a participant in the interactional here and now (for a related phenomenon, see Wortham 1994). Such figurations are often, but by no means always, ironic in their intent. This was the case with the instances of intertextual figuration in our data. As part of the larger teasing practice described above, Christie in particular intertextually figured Bill as the persona of "Bill Nye the Science Guy," the host of a 1990s-era public television program that aimed to make science more appealing to children. The program originally aired when these students were in elementary school, and it was thus a widely available cultural reference for U.S. college students during the fieldwork period, especially its distinctive theme song, in which Bill Nye's name occurs frequently. In the lab, the name of the student Bill provided an opportunity for his peers to forge a humorous association between their classmate and the figure of Bill Nye.<sup>3</sup> Throughout the term Christie and other students linked their classmate Bill to Bill Nye; often, but not always, this intertextual figuration functioned ironically as part of a negative stance toward Bill the student's academic performance.

This phenomenon emerged as early as the second week of class, in the same lab session from which Examples 1 and 2 are taken. Example 4 occurs only a minute or so after Example 2, in which Christie and Molly complain about Bill's failures as team leader. Here the three have been standing at their workbench talking to another group about their grades.

Example 4. "What Kind of Science Guy," Honors General Chemistry Lab, October 18, 2007, 00:27:51–00:28:13

2	Christie:	Okay. <to Bill> Scoot.	<i>&lt;Molly is drying flask&gt; &lt;Bill looks down at lab manual; Christie moves past Bill, touching him lightly on the arms as she does so&gt;</i>
3		(1.3)	<i>&lt;Bill steps aside; Christie stands on Molly's left side&gt;</i>
4	Bill:	[ <sub>1</sub> (First—) <sub>1</sub> ]	<i>&lt;looks at Christie; then to front of room&gt;</i>
5	Christie:	[ <sub>1</sub> If you're not <sub>1</sub> ] going to help,	<i>&lt;smiling slightly&gt;</i>
6		then just do:n't [ <sub>2</sub> stand in the (way). <sub>2</sub> ]	<i>&lt;Christie picks up plastic tubing; Bill looks down at lab manual&gt;</i>
7	Bill:	[ <sub>2</sub> I'm,	
8		<u>try</u> ing to <u>h</u> elp, <sub>2</sub> ]	

9		but I'm reading what to do.=	
10		Just tell me what to do: (then/okay).=	<tosses pen on workbench>
11	Christie:	No!	
12		Read what to do.=	
13		You're [ <sub>3</sub> our leader. <sub>3</sub> ]=	<smiling>
14	Bill:	[ <sub>3</sub> (That's ri:ght./I'll try:). <sub>3</sub> ]=	<Bill picks up pen>
15		[ <sub>4</sub> (I'll do it./Good.) <sub>4</sub> ]=	<Bill picks up lab manual and puts it in front of him>
16	Molly:	[ <sub>4</sub> If ↑you're <sub>4</sub> ] the leader,	
17		(0.7)	<Molly leans forward, looks at Bill; Bill leans forward>
18	Bill:	Well,	
19		I'm,	
20		reviewing,	
21		'cause I (won't),	
22		have time.	<looks up and nods toward wall clock; Molly steps back>
23		(0.5)	<Bill looks down at lab manual>
24	Christie:	<whisper> {O:h,	
25		Bi:ll.	
26		<tongue click>	<turns around>
27		↑Oh,	<Bill jerks head downward>
28		Bill.}	
29		(3.8)	<Christie shakes head slightly, moves to other bench; Molly sets down flask; Christie brings notebook back to workbench>
30	Christie:	What kind of sci:ence guy's ou:r Bill?	<Molly dries beaker; Christie moves to Molly's right side, sets down notebook on workbench>
31	Molly:	n@@@	

In this exchange, Bill's silence and motionlessness are framed as idleness by both women, in implicit contrast to their own rapid, bustling activity, which serves as an embodied assertion of their efficiency and seriousness of purpose. Christie's imperative to Bill in line 2 (*Scoot*) is not in itself a problematizing move, but the account that she offers after he steps aside is, in that it characterizes him as both unhelpful and in the way. At this point, Christie has already literally marginalized Bill by directing him to the sidelines of the experimental area. In response, Bill rejects Christie's complaint against him by providing a different interpretation of his stationary activity: that it is not idleness but engagement in the joint experimental task by finding out "what to do" (ln 9). He goes on to propose, in an aggrieved tone, that she give him instructions as an alternative to his reading the lab manual, but Christie forcefully objects. Where before she imposed the minimal requirement that he "just" not "stand in the way" (ln 6) so the others can do the work, she now insists that he assume his role as leader, a move that receives alignment from Molly (ln 16). When Bill again attempts to justify his reading activity, Christie twice sighs in a display of condescending exasperation, "Oh, Bill" (ln 24–28) and issues a rhetorical question: *What kind of sci:ence guy's ou:r Bill?* (ln 30). This allusion to Bill Nye the Science Guy serves as a negative assessment of her lab partner: unlike Bill Nye, "our Bill" has questionable scientific abilities (the possessive pronoun further enhances the patronizing tone of her remarks). Christie's intertextual quip ends the discussion and elicits a chuckle from Molly as Bill continues to read. Here, Bill is repeatedly positioned as ineffectual and as a mere adjunct to the women's experimental activity; intertextuality serves to cap this positioning move.

Once a semiotic resource becomes available in discourse, however, it may serve multiple functions. In the next example, the previously established intertextual link between

Bill the student and Bill Nye is discursively deployed for positive rather than negative evaluation. Example 5 occurs two weeks after Example 4 (and on the same day as Example 3, about 25 minutes earlier). Before it begins, Molly and Christie are reading the instructions in their lab manual for how to conduct the weekly experiment while Bill is looking at a graded quiz that the teaching assistant has just handed back. When Molly goes to get a particular chemical needed for the experiment, Christie comments on Molly's industriousness:

Example 5. "Bill Nye the Science Guy," Honors General Chemistry Lab, November 1, 2007, 00:42:52–00:43:25

- |    |           |                                                                        |                                                                                                                      |
|----|-----------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| 1  | Christie: | Molly is on <u>top</u> of this:.                                       | <turns to Bill, who is watching another group work>                                                                  |
| 2  | Bill:     | That is good.=                                                         | <camera pans to Molly getting chemical from shelf>                                                                   |
| 3  |           | Because I have not been paying attention for a long time.              | <Molly reaches into back of shelf>                                                                                   |
| 4  |           | [ <sub>2</sub> I've just been thinking about my,                       |                                                                                                                      |
| 5  |           | <u>D:s.</u> <sub>2</sub> ]                                             |                                                                                                                      |
| 6  | Christie: | <raised volume> [ <sub>2</sub> {Bill,                                  | <Molly picks up bottle>                                                                                              |
| 7  |           | you're gonna have to <u>report</u> on] <sub>2</sub> ] this.            | <Molly walks back to workbench>                                                                                      |
| 8  | Christie: | Aw[ <sub>3</sub> :: <sub>3</sub> ]                                     |                                                                                                                      |
| 9  | Bill:     | [ <sub>3</sub> ↑I know. <sub>3</sub> ]                                 | <looking downward>                                                                                                   |
| 10 |           | ↑Bi:ll,                                                                | <places left hand on Bill's shoulder, tilts head; Molly stands on Christie's right side>                             |
| 11 | Bill:     | [ <sub>4</sub> (Wo:w.) <sub>4</sub> ]                                  | <looks up at Christie>                                                                                               |
| 12 | Molly:    | [ <sub>4</sub> This is number <u>4</u> ] three.=                       | <extends right arm>                                                                                                  |
| 13 |           | [ <sub>5</sub> This is number <u>three</u> ,                           | <Molly touches test tubes on workbench with right hand>                                                              |
| 14 |           | <u>right?</u> <sub>5</sub> ]                                           |                                                                                                                      |
| 15 | Bill:     | [ <sub>5</sub> This is <u>not</u> <sub>5</sub> ] <u>good</u> .         | <smiles slightly; Christie removes her hand from Bill's shoulder; Molly adjusts lab goggles; all look at test tubes> |
| 16 | Bill:     | (@@/Uh [ <sub>6</sub> huh. <sub>6</sub> ])                             |                                                                                                                      |
| 17 | Christie: | [ <sub>6</sub> Yeah. <sub>6</sub> ]                                    |                                                                                                                      |
| 18 |           | (2.2)                                                                  | <Molly unscrews dropper on bottle; Bill watches Molly; Christie looks down at lab manual>                            |
| 19 | Christie: | [ <sub>7</sub> <u>Wait</u> .                                           |                                                                                                                      |
| 20 |           | ↑Actually? <sub>7</sub> ]                                              | <flips through lab manual>                                                                                           |
| 21 | Bill:     | [ <sub>7</sub> At least my <u>quiz</u> was <sub>7</sub> ] really good. | <looks downward>                                                                                                     |
| 22 | Christie: | Three?                                                                 | <watches Molly's hand with dropper>                                                                                  |
| 23 |           | <higher pitch> (( <u>What</u> are we doing here?))                     | <looks down at lab manual; Molly draws dropper out of bottle>                                                        |
| 24 | Molly:    | Yeah.=                                                                 | <drops chemical into test tubes>                                                                                     |
| 25 | Christie: | Yeah.                                                                  |                                                                                                                      |
| 26 |           | °Three.°                                                               | <closes lab manual>                                                                                                  |
| 27 |           | (1.9)                                                                  | <Molly moves dropper to test tubes; Christie and Bill watch>                                                         |
| 28 | Molly:    | Just—                                                                  | <Molly adds chemical to test tubes>                                                                                  |
| 29 |           | just a few drop:s.                                                     |                                                                                                                      |
| 30 |           | (0.7)                                                                  |                                                                                                                      |
| 31 | Christie: | .h                                                                     |                                                                                                                      |
| 32 |           | You're Bill Ny:e,                                                      |                                                                                                                      |
| 33 |           | the science [ <sub>8</sub> gu:y. <sub>8</sub> ]                        | <looks at Bill>                                                                                                      |
| 34 | Bill:     | [ <sub>8</sub> I should <u>s</u> ] <u>definitely</u> have,             | <Christie watches Molly>                                                                                             |
| 35 |           | <[dəv]>,                                                               |                                                                                                                      |
| 36 |           | done Chem one oh <u>o</u> :ne.                                         | <tightens lips>                                                                                                      |
| 37 |           | n@::=                                                                  |                                                                                                                      |

38	Christie:	No:	<Bill looks up toward front of classroom>
39		[ <sub>9</sub> No. <sub>9</sub> ]	<looks up toward front of classroom>
40	Molly:	[ <sub>9</sub> No. <sub>9</sub> ]	<Molly places dropper back in bottle; Bill glances up at Christie and Molly>
41	Christie:	<tongue click>	
42		[ <sub>10</sub> You're in the right plac:e. <sub>10</sub> ]	<Christie tosses head and looks at Bill; Molly leans over counter and looks at test tubes>
43	Bill:	[ <sub>10</sub> Well,	<looking downward>
44		no::	
45		No,	
46		definitely should have done	<smiles slightly; Molly adjusts test tube>
		[ <sub>11</sub> Chem one oh one. <sub>11</sub> ]	
47	Christie:	[ <sub>11</sub> ↑No. <sub>11</sub> ]	

When Christie praises Molly, Bill comments on his own lack of involvement in the lab activity, admitting that he has not been taking notes in his assigned role of recorder but has instead been preoccupied with his low grades (*my D:s*; ln 4–5) in the class. At first Christie chastises him for failing to fulfill his tasks as a team member, but then she aligns with him in response to his troubles talk by displaying sympathy through both speech and gesture (ln 8, 10). As Molly sets up the experiment, Bill downgrades his self-recrimination, noting that his quiz grade “was really good” (ln 21), and Christie, after an exchange with Molly about the experiment, encouragingly responds, “You’re Bill Ny:e, the science gu:y” (ln 32–33).

Here the intertextual link to Bill Nye does the work of positive evaluation by positioning Bill as a competent science student. Bill in turn persists in his self-deprecation by suggesting that he should have taken a less challenging chemistry class; both women reject his suggestion, and Christie affirms that Bill is “in the right plac:e” (ln 42). In contrast to other examples in which Bill the student is intertextually linked to Bill Nye, here Bill is the one doing the stance work of negative evaluation. He employs various self-deprecating tools: invoking his low grades, confessing to not participating in the lab activity, suggesting he should be in an easier class, and countering every effort to reassure him. Conversely, the women, who regularly negatively assess and disparage Bill, here step in to praise and comfort him.

Yet this supportive stance toward Bill is short-lived. A mere ten minutes later Christie returns to negatively (and intertextually) assessing his scientific skills. As the next step in the experiment that Molly set up in Example 5 above, the students must add sodium hydroxide, or NaOH, to the solution in their test tube; according to their lab manual instructions, the solution will then turn pink. Before the example begins, Molly has asked her partners to add four drops of sodium hydroxide to the solution, but when they do so there is no color change. Christie proposes that they add more, and Bill does so; this time the solution turns pink (Example 6):

Example 6. “Not Very Good at Science,” Honors General Chemistry Lab, November 1, 2007, 0:53:52–00:54:09

1	Christie:	<off camera> Brilliant.	<Molly picks up pen and hurries across room>
2	Bill:	<off camera> Okay,	
3		so NaOH is just a waste of time.	
4	Christie:	You only added two more drops: =	<camera pans to Christie and Bill looking at test tube>
5	Bill:	No,	<turns toward Christie>
6		I added a lot more than that.	<Christie holds mouth open and looks at Bill>
7		n@:	
8	Christie:	n@ @ .h	<Bill turns back to shelf; Christie looks at shelf>
9		O:h Bi:ll.	<Bill reaches into shelf>

10		(2.3)	<Bill closes chemical bottle; Christie tightens lips, then opens mouth>
11		You're not very good at science.	<Bill turns to Christie, holding test tube; Christie turns and looks at Bill, smiling>
12	Bill:	Ye-	
13		well,	
14	Christie:	[### ]	
15	Bill:	[I'm just trying to get a] color change.	<Christie crosses her arms>

The two students take different stances toward the chemical reaction they have produced: Christie displays strong satisfaction, while Bill concludes that sodium hydroxide is ineffective given how much of the chemical is required to produce the desired outcome. When Christie counters that Bill only added “two more drops” of sodium hydroxide to the solution (ln 4), Bill corrects her, saying that he used “a lot more than that” (ln 6). Christie’s response shifts from evaluating the experiment to evaluating Bill, through her exaggeratedly shocked and rueful facial expressions (ln 6, 10), laughter tokens (ln 8), her by-now signature patronizing exclamation *O:h Bi:ll* (ln 9), and a characterization of Bill’s scientific abilities: *You’re not very good at scienc:e* (ln 11)—despite the efficacy of his experimental action. This pronouncement on Bill’s lack of scientific talent is intertextually tied to Examples 4 and 5. Now the two are back on familiar footing, with Bill in the one-down position.

The itinerary of identity establishing Bill’s social position as a poor science student and a marginal group member culminated at the end of the quarter in the more public circulation of this identity—including the intertextual figuration of him as Bill Nye the Science Guy—within the classroom. In Example 7 the three lab partners are giving a formal class presentation on the results of an experiment they carried out for their final project. The title slide of their PowerPoint presentation is projected on the wall behind them, and before Example 7 begins, Molly and Christie laughingly show Bill that they have listed his name as *Bill “Nye the Science Guy”* and his last name. Before they start the presentation, Molly points to the slide, calls the class’s attention to the list of names, and laughs. However, the class does not audibly react to the joke until the lab partners formally introduce themselves, as they have prearranged to do:

Example 7. “Bill! Bill! Bill!,” Honors General Chemistry Lab, November 29, 2007, 00:05:58–00:06:13

1	Christie:	↑Okay.	<stands upright from leaning position; looks at PowerPoint slide>
2		So um,	<shifts weight to right leg>
3		<tongue click> we u:h,	<looks toward Bill and Molly; Bill turns toward audience>
4		Our project was “Titration of Antacid ↑Tablets?	<Bill looks toward Christie; Christie looks toward audience, smiling, then back to slide>
5		Project Two:?”	
6		I’m Christie,	<touches chest with right hand>
7	Molly:	I’m Molly,	<Christie extends arm, pointing and smiling at Molly or Bill; Molly touches chest with right hand, looking toward Bill, smiling>
8	Bill:	I’m Bi:ll.	<waves right hand, looks at audience>
9			<Molly steps toward laptop and extends right arm toward keyboard>
10	Male:	<chanting> {Bill! [1 Bill! Bill! Bill! Bill!] 1}	
11	Molly:	[1 @@@ ] @@ .h	<turns toward Bill, smiling; Christie looks toward Bill, smiling>

12		We didn't do it.	<taps chest with left hand>
13		[ <sub>2</sub> He did it. <sub>2</sub> ]	<points toward audience with left hand>
14	Student:	<singing "Bill Nye" tune> [ <sub>2</sub> Nar nar <sub>2</sub> ] nar nar [ <sub>3</sub> nar nar. <sub>3</sub> ]	<Molly changes slide; Christie looks toward slide>
15	?:	[ <sub>3</sub> @ <sub>3</sub> ]	
16	Male:	Bi:ll.	<Molly steps back>

The women smile during their self-introductions, apparently anticipating the payoff of their joke. When it is Bill's turn to introduce himself, several students in the audience display their recognition of the intertextual allusion, bursting into the "Bill Nye" theme song, while Molly rapidly disavows responsibility for this audience reaction. This public teasing continues later in the presentation, when Christie lists "Bill" as one of the sources of "systematic error" in the experiment. Bill himself is assigned a marginal role in the presentation, and even so, he frequently stumbles over the information he is trying to convey. His struggles contrast with his more confident and competent student persona in the earlier group presentation in Example 1.

Over the course of the class, then, Bill's imposed identity became entrenched as his lab partners negatively evaluated him in their stance taking, physically and linguistically sidelined him from their participation frameworks, and targeted him through intertextual figuration. Although this outcome was by no means assured—as the positive evaluation of Bill in Example 5 suggests—the itinerary of identity established within the group's interactions made it increasingly unlikely that he would be positioned or could position himself as a successful science student.

To be sure, Bill's own actions also contributed to the transformation of his identity. He generally did not display himself as hardworking in his talk or actions, nor did he participate in decision making within the group. Moreover, he often disengaged from his lab partners' activities, focusing instead on his own work and apparently not attending to their discussions. Part of Bill's more laid-back orientation was no doubt attributable to the fact that, unlike the others, he was not a chemistry major and therefore did not have the same level of commitment to the class.

By contrast, Molly and Christie habitually projected scientific personas characterized by efficiency and effort through their actions, including rapid movement and frequent talk about time and tasks, a common characteristic of science classrooms (Baquedano-López 2009). Molly and Christie's teasing of Bill was also a resource for their own identity work. By positioning Bill as ineffectual, as well as through their other talk and actions within the lab, they claimed identities as good science students. At the same time, the tone of this teasing was largely good-natured, and the group members were friendly with one another throughout the academic term; although we were unable to collect data of the group in other settings, they reported spending time together studying and socializing outside of the lab, and they remained friends after the class ended. Moreover, there may have been an element of mild heterosexual flirtation in the cross-gender teasing reported here, as well as gender solidarity between the two women. We are not suggesting, then, that Bill was either a hapless victim of peer cruelty or an aimless slacker taking advantage of his partners' stronger work ethic. As the preceding analysis indicates, social marginalization is not entirely imposed by others but is intersubjectively accomplished over time through the actions (and inactions) of all participants.

## Conclusion

In this article, we have argued that tracking the trajectories of student identities in classroom settings involves attention both to the unfolding of time within and across interactions as well as the ideological linking of semiotic resources across contexts and

activities. The results of such an approach may challenge established assumptions of power and agency. In the instructional chemistry lab considered here, the trajectory of the male student's classroom identity, guided by the actions of his female lab partners, runs counter to conventional scholarly understandings of the role of gender in scientific interaction. However, this finding does not indicate that gender is no longer relevant in scientific or educational settings. Rather, these students may be participating in the well-documented trend toward the increasing feminization of higher education, with female students gaining the upper hand both numerically and academically even as a college education becomes less highly prized and prestigious in the culture at large (Leathwood and Read 2009).

As we have argued, the analysis of identity requires a consideration of multiple time-scales, from the on-the-ground level of turn-by-turn interaction to larger units of hours and weeks, months and years, as well as the temporal units imposed by institutions, such as the marking of educational time via lab activities, class periods, and academic terms. No single interaction can in itself accomplish the work of social positioning, which must be constantly enforced to have effect, for at any point, itineraries of identity can be disrupted or rerouted. Yet even within the span of a few minutes, a great deal of consequential identity work can be interactionally carried out. In addition, the institutional structuring of time itself provides social actors with further restrictions and possibilities for forging identities in relation to institutional expectations, as tasks must be completed in accordance with an imposed classroom and university schedule that confers academic identities based on classroom performance. Identity work is also fostered through other temporal resources, in particular the simultaneity of past and present induced through intertextuality. The phenomenon of intertextual figuration anchors identity to a fixed and familiar set of characteristics, creating an ideological shortcut for further identity work. In all these ways, the trajectories that identities trace over time map out ideologically shaped itineraries that route and regiment social subjectivity.

Although the social consequences of such processes are contingent, rather than inevitable, and sometimes even unexpected, over time interlocutors' stance taking, participation, and other practices of intersubjective positioning gradually crystallize into more stable identities. One crucial advantage of an analysis that examines discourse across timescales, then, is that it locates power neither in single interactional moments nor in a priori theoretical constructs. Rather, this perspective finds the workings of power in temporally linked discursive practices. Such habits of discourse bind participants into situated yet durable roles and identities through the cumulative force of social actions taken within specific cultural events and activities.

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1. Molly's full pseudonym, which she herself selected, is Molly B. Denum. This punning allusion to the chemical element molybdenum is one index of her identity as a chemistry major.

2. The following transcription conventions are adapted from various sources, including the practices of conversation analysis (e.g., Atkinson and Heritage 1984) and the Santa Barbara transcription system (Du Bois et al. 1992).

Each line represents a single intonation unit.

.	end of intonation unit; falling intonation
,	end of intonation unit; fall-rise intonation
?	end of intonation unit; rising intonation
!	raised pitch and volume throughout the intonation unit
∞	lower volume
↑	pitch accent
<u>underline</u>	emphatic stress; increased amplitude; careful articulation of a segment
:	length
=	latching; no pause between intonation units
—	self-interruption; break in the intonation unit
-	self-interruption; break in the word, sound abruptly cut off
(n.n)	measured pause of greater than 0.5 seconds
@	laughter; each token marks one pulse
n@	nasal laughter
h	outbreath (e.g., sigh); each token marks one pulse
.h	inbreath
[ ]	overlapping speech
[ <sub>1</sub> ]	overlapping speech in proximity to a previous overlap
( )	uncertain transcription
/	alternate hearings of uncertain transcription
#	unintelligible; each token marks one syllable
< >	transcriber comment; nonvocal noise
{ }	stretch of talk to which transcriber comment applies
< [ ] >	phonetic transcription
" "	reported speech or thought

3. Because this intertextual figuration plays on the shared first name of Bill Nye and Bill the student, we sought and received permission from Bill to use his real first name in this article.

## References Cited

- Agha, Asif, and Stanton E. F. Wortham, eds.  
2005 Discourse across Speech Events: Intertextuality and Interdiscursivity in Social Life. Special issue, *Journal of Linguistic Anthropology* 15(1).
- Atkinson, J. Maxwell, and John Heritage, eds.  
1984 *Structures of Social Action: Studies in Conversation Analysis*. Cambridge: Cambridge University Press.
- Bakhtin, M. M.  
1981 *The Dialogic Imagination*. Austin: University of Texas Press.
- Baquedano-López, Patricia  
2009 Chronolects of Classroom Talk: How Teachers and Students Temporalize Talk and Action in Classroom Learning Activity. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, April.
- Bergvall, Victoria L., and Kathryn A. Remlinger  
1996 Reproduction, Resistance and Gender in Educational Discourse: The Role of Critical Discourse Analysis. *Discourse and Society* 7(4):453–479.
- Briggs, Charles L., and Richard Bauman  
1992 Genre, Intertextuality, and Social Power. *Journal of Linguistic Anthropology* 2(2):131–172.



- Bucholtz, Mary, and Kira Hall  
2005 Identity and Interaction: A Sociocultural Linguistic Approach. *Discourse Studies* 7(4–5):585–614.
- Cashman, Holly R.  
2008 Accomplishing Marginalization in Bilingual Interaction: Relational Work as a Resource for the Intersubjective Construction of Identity. *Multilingua* 27(1–2):129–150.
- Conefrey, Theresa  
1997 Gender, Culture and Authority in a University Life Sciences Laboratory. *Discourse and Society* 8(3):313–340.
- Du Bois, John W.  
2007 The Stance Triangle. In *Stancetaking in Discourse: Subjectivity, Evaluation, Interaction*. Robert Englebretson, ed. Pp. 139–182. Amsterdam: John Benjamins.
- Du Bois, John W., Susanna Cumming, Stephan Schuetze-Coburn, and Danae Paolino, eds.  
1992 *Discourse Transcription*. Santa Barbara Papers in Linguistics 4: University of California, Santa Barbara, Department of Linguistics.
- Goffman, Erving  
1981 Footing. In *Forms of Talk*. Pp. 124–159. Philadelphia: University of Pennsylvania Press.
- Goodwin, Charles, and Marjorie Harness Goodwin  
2004 Participation. In *A Companion to Linguistic Anthropology*. Alessandro Duranti, ed. Pp. 222–244. Oxford: Blackwell.
- Goodwin, Marjorie Harness  
2002 Exclusion in Girls' Peer Groups: Ethnographic Analysis of Language Practices on the Playground. *Human Development* 45:392–415.
- Hill, Catherine, Cristianne Corbett, and Andresse St. Rose  
2010 *Why So Few?: Women in Science, Technology, Engineering, and Mathematics*. Washington, DC: American Association of University Women.
- Leathwood, Carole, and Barbara Read  
2009 *Gender and the Changing Face of Higher Education: A Feminized Future?* Berkshire: Open University Press.
- Lemke, Jay L.  
2000 Across the Scales of Time: Artifacts, Activities, and Meanings in Ecosocial Systems. *Mind, Culture, and Activity* 7(4):273–290.
- Lytra, Vally  
2009 Constructing Academic Hierarchies: Teasing and Identity Work among Peers at School. *Pragmatics* 19(3):449–466.
- Ochs, Elinor  
1990 Indexicality and Socialization. In *Cultural Psychology: Essays on Comparative Human Development*. James W. Stigler, Richard A. Shweder, and Gilbert Herdt, eds. Pp. 287–308. Cambridge: Cambridge University Press.
- Silverstein, Michael, and Greg Urban, eds.  
1996 *Natural Histories of Discourse*. Chicago: University of Chicago Press.
- Tapper, J.  
1999 Topics and Manner of Talk in Undergraduate Practical Laboratories. *International Journal of Science Education* 21(4):447–464.
- Wortham, Stanton E. F.  
1994 *Acting Out Participant Examples in the Classroom*. Amsterdam: John Benjamins.  
2005 Socialization beyond the Speech Event. *Journal of Linguistic Anthropology* 15(1):95–112.  
2008 The Objectification of Identity across Events. *Linguistics and Education* 19:294–311.