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Tutor Talk: Do Tutors Scaffold Students' Revisions?

Abstract

This study explores the impact of tutor talk on students' revision practices. We applied Mackiewicz & Thompson's scheme for classifying tutoring strategies from their 2015 *Talk about Writing*, with some variation to suit our writing center context. With an exclusive focus on tutor talk, they did not assess the impact of tutor talk on the writing itself nor on the writer's responses to the conversation with the tutor. Thus, in our study we sought evidence of a relationship between the different types or patterns of tutor talk and the extent of revisions a writer made to their essay after a writing center session. Our mixed-methods study found that in 80% of sessions (n=8), students revised based on tutor talk, and in two sessions, students applied tutor talk to sections of their paper not discussed in the session.

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As early as 1984, Stephen North suggested that the best way for a writing center to "prove its worth"—beyond usage numbers or hours of tutoring offered—is to describe its talk: what "characterizes it, what effects it has, how it can be enhanced" (p. 444). That North connects a deeper understanding of tutor talk with demonstrating our "worth" speaks to a long-standing recognition in the field of the need to explain the unique aspects of the tutoring dynamic, as it is those aspects that demonstrate a writing center's effectiveness. Jo Mackiewicz and Isabelle Kramer Thompson take up the invitation to describe tutor talk in *Talk about Writing* (2015), and also in "Instruction, Cognitive Scaffolding, and Motivational Scaffolding in Writing Center Tutoring" (2014) and "Motivational Scaffolding, Politeness, and Writing Center Tutoring" (2013); in this body of scholarship, they demonstrate convincingly that tutoring sessions deemed satisfactory by both student and tutor use a combination of instruction, motivational scaffolding, and cognitive scaffolding in different ratios and at different stages of the session. Experienced tutors, the authors show, meet writers where they are in their process, using these strategies alone, paired, and in longer sequences to scaffold students' learning in a writing center session.

In our study, we respond to Mackiewicz & Thompson's (2015) call to examine the impact tutor talk has on the revisions writers make to the work they bring to the writing center (p. 175). Most writing centers presume, or hope, that writers revise in response to what is discussed in a writing tutorial. For example, tutoring handbooks often recommend a session end with a discussion of the writer's next steps, which usually draws on the work of the session (e.g., see Fitzgerald & Ianetta, 2016, pp. 66, 78), thus assuming the writer will continue to revise after the session ends. Yet the empirical evidence to understand whether and how tutoring strategies influence the writer's "next steps" is limited. In this article, we develop a method to examine whether what is discussed in tutoring sessions is applied by students as they revise.

Replicating the method of Mackiewicz & Thompson (2015), with some variation to suit our writing center context, our study extends their analysis to explore the impact of tutor talk on students' revision practices. We acknowledge that showing the impact of tutor talk on students' writing is tricky, in part because it is so difficult to account for the influences outside of a tutorial and to isolate how and where learning occurs. Some scholars might argue it is futile to try, as to do so might undermine what we know to be the situated, recursive, and socially constructed nature of writing. However, for writing center professionals to have empirical evidence that tutor talk supports writers' revisions on the page is surely useful as we examine our tutor education and our claims about the value

of the writing center to student learning. In our study of writers in ten sessions (n=10), we confirmed Mackiewicz & Thompson's (2015) finding that tutors used a range of strategies from across three broad categories: motivational scaffolding, cognitive scaffolding, and instruction. Scaffolding refers to a teaching strategy that enables students to achieve more than they are currently able (Wood, Bruner, & Ross, 1976). We further found that

1. 80% of writers (n=8) made changes that aligned with what was discussed in the tutoring session, suggesting that what was said in a tutoring session has an impact on what or how students revise;

2. of those who did make changes in response to tutor talk, two made changes to sections of their drafts not directly discussed in the tutoring session, suggesting additional tutor influence;

3. our tutors used more cognitive scaffolding (45%) than instruction (33%), a finding incongruous with that of Mackiewicz & Thompson, who found instruction used most commonly (44%), followed by cognitive scaffolding (34%). Our tutors' use of motivational scaffolding (22%) was comparable to Mackiewicz and Thompson's finding (22%).

Overall, our application of Mackiewicz & Thompson's coding scheme demonstrates the adaptability of this method to other writing center contexts.

We also offer a method for analyzing students' revision practices that avoids evaluating the quality of students' revision or invoking higher and lower order concerns and, instead, seeks to show to what extent students revise based on tutor talk. We were interested in if the tutor had an impact on what students did with their writing, wondering whether they would change parts of their drafts directly discussed with the tutor or change additional parts of the draft not directly discussed with the tutor but still apply concepts or strategies discussed in the session. We settled on this question to align with writing center philosophy that suggests successful writing center sessions help students become more independent writers by encouraging them to transfer techniques to future work. Our findings confirm the value of individualized writing pedagogy that supports students' revisions. And because our research also shows what actually happens in tutoring sessions at our center and what students do with what is discussed in the session, we provide evidence to show tutor talk can influence students' revision.

Assessing Tutor Talk, Quantifying Revision: Debates in the Field

As long as the writing center field has been interested in how to assess or quantify the value or impact of writers working with writing center tutors, scholars have also questioned whether such measurement is possible. In 2001, Casey Jones expressed concerns about the potential for measuring relations between student writing improvement and writing center visits, stating he had not found a "single 'hard' empirical study of writing center instructional efficacy" published after the late 1980s (p. 10). In an updated review article from 2012, Miriam Gofine found only two studies published in the period between Jones's article and her research—Luke Niiler (2005) and Roberta Henson & Sharon Stephenson (2009)—that quantified the quality of writing pre- and posttutoring (p. 44). With so few studies on writing change or assessments of quality, Terese Thonus (2002) argues instead that "it is imperative . . . to ask what factors students and (secondarily) tutors appeal to in accounting for the perceived 'success' of writing tutorials" (pp. 112–113). Yet, as Neal Lerner put it influentially in 1997, it is important for the field to "make beans count" in ways that align with our goals and philosophies: to show quantitatively (and qualitatively) that writing centers can make a difference and that they may support writers' improvement and the improvement of writing (p. 1). And more recently, there has been a growing number of scholars calling for the field to test our assumptions and lore about the value of writing center tutoring (Driscoll & Wynn Perdue, 2012; Kjesrud, 2015; Nordlof, 2014; Thompson, Whyte, Shannon, Muse, Miller, Chappell, & Whigham 2009). Like Jones, Thonus, and others, Mackiewicz & Thompson (2015) acknowledge that identifying the impact of tutoring on student writing "is not only vastly complex but also theoretically questionable" (p. 179). They propose researchers turn to student writing to observe whether and to what extent a tutor's advice is used to "shed light on a potential component . . . of conference success" (p. 175). In this proposal, the focus moves towards what writing centers are able to document: the relationship between tutoring and revisions.

Our study recognizes the complexity of measuring writing center efficacy and provides a method to understand the relationship between tutor talk and student writers' revisions. Because it is so difficult to quantify writing improvement, we sought to define revision such that improvement was not the focus. In the broader field of writing studies, scholars have developed taxonomies to describe revision—according to higher or lower order concerns (Sommers, 1980) or in terms of editorial moves such as addition, substitution, consolidation, permutation, and distribution (Faig-

ley & Witte, 1981). In 1987, Jill Fitzgerald synthesized the scholarship on revision, emphasizing its complexity and the elaborate decision process that underlies the visible behavior of revising: writers consider a range of potential changes at all points in the composing process, some of which may not be meaningful (p. 484; see Beach, 1976; Bridwell, 1980; Faigley & Witte, 1981; Flower & Hayes, 1981; Flower, Hayes, Carey, Schriver, & Stratman, 1986; Nold, 1981; Scardamalia & Bereiter, 1983, 1986).

Some scholars have looked directly at the influence of feedback on students' revisions, which is useful for our research. Dana Ferris (1997) examines the impact of instructors' written comments on multilingual students' revised writing; Jessica Williams (2004) examines revisions made by multilingual students on their writing by investigating the relationship between tutor talk, the type and extent of revisions made, and the writers' behavior during the session. Ferris (1997) used a subjective scale to assess the extent to which students applied comments on their drafts to their revisions and "whether the resulting change(s) improved the paper[s,] had mixed effects, or had a negligible or negative effect on the revision" (pp. 320, 322). Williams (2004) coded revised essays in the following categories: unchanged, new/substantial, revised/minor or no change in meaning, revised/major change with effect on meaning (p. 179). Even though these studies investigated whether student writing improves through revision and in response to instructor or tutor feedback, which is not part of our study's purpose, they are useful to our project because they validate the observation of the impact of tutor talk on student revision practices. Further, they gave us some models for coding student revisions, which we ultimately decided against for reasons we describe below.

Neither Ferris nor Williams focus on the role of motivation in the revision process, yet we know revision and motivation are intimately tied. Motivation is persistence with a purpose, with goals organizing the moti-vated behavior (Margolis, 2005, qtd. in Mackiewicz & Thompson, 2015, p. 223). Expert tutors support students' goals by supporting their confidence, creating surmountable challenges, sparking curiosity, and sharing control in the tutorial (Lepper, Drake, & O'Donnell-Johnson, 1997, pp. 126–127). Recent research on writing and motivation suggests motivation requires interest in the task (Mackiewicz & Thompson, 2015, p. 44), belief that the task can be completed, and a willingness to reflect on performance (see Boscolo & Hidi, 2007; Hidi & Boscolo, 2006; Pajares & Valiante, 2006; Zimmerman & Kitsantas, 2007). While there is limited research on student motivation and writing tutoring (e.g., DeCheck, 2012; Williams & Takaku, 2011), there is more scholarship on motivational scaffolding as a tutoring technique. Jennifer Cromley & Roger Azevedo (2005), for example, found that experienced tutors used fewer motivational scaffolding strategies

than cognitive scaffolding or instruction strategies, a finding our study and Mackiewicz & Thompson's (2015) research confirms. Consistent with James D. Williams & Seiji Takaku's (2011) findings, Kristy Elizabeth Boyer, Robert Phillips, Michael D. Wallis, Mladen A. Vouk, & James C. Lester (2008) also show that motivational scaffolding in tutoring potentially supports students' self-efficacy, but Boyer et al. note that learning outcomes were not immediately improved. Nevertheless, there is broad agreement that motivation is crucial to learning (e.g., Ames, 1990, p. 411).

The scholarly conversations on the challenges of quantifying improvement, the need to test our assumptions, and the relationship between motivation and revision all inform our study of tutor talk and student revision. We did not set out to test how tutors created or impacted motivation specifically, but we assumed the presence of motivation in the activity of revision: although an absence of revision may not indicate a lack of motivation, revision cannot happen without motivation. Responding to a number of open problems in the scholarly conversation, our research thus seeks to explore how tutors scaffold students' revisions by asking the following research questions:

1. To what extent do student writers revise in response to tutor talk?

2. How can we identify and categorize tutor impact on students' revision?

3. How can we document the extent and depth of students' revisions?

Research Methodology

To examine how student writers revise in response to tutor talk in a tutoring session, we collected and analyzed a range of data from tutoring sessions held in our writing center during the fall of 2015. Our study analyzes the tutor talk in 10 tutoring sessions each scheduled for 30 minutes, with one session running to 45 minutes. For each student participant, we collected an audiotaped tutoring session, an audiotaped interview with the student writer, an audiotaped interview with the tutor, and each student's initial and revised drafts. We then transcribed the tutoring sessions and the interview recordings and analyzed the drafts using a coding scheme we developed from the students' interviews.

We recruited participants taking the first-year writing course at our institution—an elite, private Research 1 university in the United States. At this institution, all first-year students are required to take first-year writing,

and our population is traditional in age. The study researchers visited writing classrooms to explain the research project and invite participation. Students who opted in volunteered to compose their first assignment using a Google document and to attend a writing center appointment. After students attended the tutoring session, which we recorded, we scheduled interviews with both the student and the tutor; we moved quickly to capture perspectives before the students moved on to the next writing assignment. In our initial recruitment, 74 students volunteered to participate. Many participants dropped out of the study because they did not schedule a tutoring session. In the end, 13 tutoring sessions were recorded. We eliminated three incomplete data sets when students did not submit their final draft or did not compose in Google. We completed the study with 10 complete data sets. Each set contains a draft essay, captured immediately before the tutoring session; a final version of the essay; a transcript of the tutoring session; and transcripts of interviews with the tutor and the student. In the interviews with students, we sought to learn more about individual relationships with writing and the revision process. We asked about how and where students learned to revise, how they typically revise, and how their tutoring session influenced their revision decisions. In an attempt to isolate the tutor's comments and potential influence, we also asked students both about their goals for this tutorial and about the feedback peers, the instructor, and the tutor gave students on this particular assignment. We interviewed tutors to capture their explanations and rationale for the comments they offered the writer; however, in this study, we found that analyzing their comments via the tutoring-session transcripts gave us enough information.

Tutors in this study were graduate students and professional lecturer tutors, although our center also has undergraduate peer tutors. We focused on the graduate and professional tutors because these tutors are available by appointment, and for recording purposes we needed to know in advance whether a tutoring session was scheduled with one of our participants.

Limitations of Methods

By limiting our participants to first-year writers working on their first writing assignment in their first term of university, we aimed to limit the variation in experience with college writing. However, we could not control for at what point in the writing process students came into the writing center; some had their tutoring session before they received feedback from their instructor, others came in after they had received instructor feedback. Although we used the interview responses to attempt to separate the feedback received from the tutor from that received from

an instructor and peers, this process was dependent on students' memory of the feedback received and how forthcoming or detailed students were in the interviews.

Because we assumed that the presence of revision implies the presence of motivation to revise, we did not directly measure students' motivation or self-efficacy. In addition, we did not control for students' help-seeking behaviors as a way to determine motivation: some of our participants visited the center simply because they wished to be part of a research study in their first term at a university that strongly encourages research. In the interviews, some students explained their highly intrinsically motivated revision process, and other students were externally motivated by instructor feedback or grades. All the students in our study describe themselves as highly motivated, and of course this motivation was demonstrated in their willingness to visit the writing center. In all, the students who participated in our study were motivated to learn and to do well; because of this, we decided that we did not need to differentiate them by motivation level.

Focusing only on tutor talk, at the expense of student talk, also limits our study, as we missed the opportunity to examine how dialogue can drive the direction and priorities of a tutoring session; where students engage, push back, or resolve issues; or where confusion can be clarified. In other words, examining the dialogue might explain some of the reasons the degree of influence is lower than we might hope. However, our study was interested in testing and extending *Talk about Writing*, which is likewise focused on tutor talk, because we wanted to generate findings that might contribute to empirically validated tutor education.

Another limitation of our study is that we did not take into consideration stages of the tutoring session, which Mackiewicz & Thompson (2015) did consider in their study (pp. 63–82). While we did calculate the ratio of instruction, cognitive scaffolding, and motivational scaffolding in each session, we opted not to code for when in the session each of these occurred so we could focus on the influence of types of tutor talk on students' revision choices. This focus also limits comparison to Mackiewicz & Thompson. Focusing only on our appointment-based tutors—professional tutors and graduate students—also potentially limits the relevance of our study to writing centers staffed by undergraduate tutors. However, while our findings might be different because of our staff makeup, our methods should be replicable for other centers.

Coding the Data

Tutoring sessions. Once we had all the data, we developed one coding scheme to analyze the tutoring sessions and a separate coding scheme to analyze the students' revisions. We started by completing a direct analysis of tutor talk using a version of the coding scheme developed by Mackiewicz & Thompson (2015). Recognizing the complexity of scaffolding dialogue, Mackiewicz & Thompson identify specific tutoring moves within the three broad categories of motivational scaffolding, cognitive scaffolding, and instruction (see Table 1). Tutors scaffold writers' motivation by making comments that support a student's action or interest, such as praising the student or reinforcing their ownership of the writing, among other moves; they scaffold writers' thinking (their cognition) about their work by helping them figure out answers for themselves, such as by "pumping," asking clarifying questions, or paraphrasing what they've read or heard, among other moves; and they instruct writers by giving an answer, explaining a concept or principle, or asking the student to complete a writing task during the session.

Table 1

Summary of Tutoring Strategies Identified by Mackiewicz & Thompson (2015) with Our Amendments

Motivational scaffolding	Cognitive scaffolding	Instruction
Showing concern	Pumping	Telling
Praising	Reading aloud	Suggesting
Reinforcing student writers' ownership and control	Responding as a reader or a listener	Explaining and exemplifying
Being optimistic or using humor	Referring to a previous topic	Assigning a writing task
Giving sympathy or empathy	Forcing a choice	
Other	Prompting	
	Hinting	
	Demonstrating	

Our coding scheme is close to Mackiewicz & Thompson's; however, we made some amendments to suit our writing center context and based on what the tutoring-session data were showing us. In the category of motivational scaffolding, we separated *being optimistic* and *using humor*, as we observed humor used for ends other than optimism, such as when tutors were self-deprecating. When tutors responded consistently to the students' ideas or explanations with a "right" or an "uh-huh," we saw this as a verbal tic that encouraged the student to keep talking (and coded this as *other* within motivational scaffolding). If the tutor responded to the student's follow-up with a "right," however, we coded "right" as *praise* or *reinforcing student confidence*. In the category of cognitive scaffolding, we noticed that *responding as a reader or listener* may involve moves that go beyond Mackiewicz & Thompson's focus on the tutor's paraphrase of the writer's text, and we had to make hard decisions about when paraphrase moved into instruction. For example, if a tutor said "what I hear you say is this" with an implied critique, they may also have been saying "maybe you don't need this point." If they said the latter explicitly, we coded it as *instruction*. In the category of instruction, we further clarified a distinction between *demonstrating* and *exemplifying*. As a form of cognitive scaffolding, demonstrating is context-specific: a tutor shows a writer how to do something by repairing a comma splice, for example. By contrast, when exemplifying, a tutor explains a grammatical or rhetorical principle and gives an example not related to the specific work at hand, which we coded as *instruction*. Another example of a type of tutor talk that crosses the strategy categories is constructive criticism. In Mackiewicz & Thompson's coding scheme, the one type of evaluative feedback discussed is "praise," a form of motivational scaffolding. However, in our study, if a tutor offered constructive criticism, we coded this as *motivational scaffolding* ("This sentence is nicely concise") or as *cognitive scaffolding* ("Can you see why this sentence could be more concise?") or as *instruction* ("This sentence is concise because it uses only as many words as it needs to make its point"). We developed a code book with examples and explanations for each of these specific strategies and used it to train all four researchers on the study.

Mackiewicz & Thompson (2015) coded by "thematic unit" (p. 61). We coded by clause, the "smallest unit of language [that] makes a claim," according to Cheryl Geisler (2004, p. 32). We chose the clause when we noticed in our sample coding that one unit could contain several tutoring moves, and we wanted to capture and count each of them (see Table 2 for an example).[1] We used Dedoose (an application for coding and analyzing

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1   Mackiewicz and Thompson (2015) opted for "maximum flexibility" when identifying the "type and size of the unit" demarcating one code from another: some units are one

qualitative data) to tag each clause with a code from our code book. We required ourselves to choose which single tutoring move was instantiated by a given clause; we did not code a single clause as instantiating more than one tutoring move. For example, this moment in a tutoring session was coded for five clauses:

Table 2
Sample Coding of Clauses in One Unit

Clause No.	One unit of tutor talk	Coding
1	And you might even want to think about, like,	Instruction
2	how does that build upon what he's already done, right,	Cognitive scaffolding—pumping
3	because he's sort of, now he took a complicated theory and articulated it verbally	Cognitive Scaffolding—Responding as a reader or listener
4	and now he's going to step back further	Cognitive Scaffolding—Responding as a reader or listener
5	and take an interesting concept and not just talking about it verbally but also doing a visual representation.	Cognitive Scaffolding—Responding as a reader or listener

In the example in Table 2, the tutor begins with instruction, telling the writer what he might think about (clause 1), then uses cognitive scaffolding to mitigate the instruction and pose a question (clause 2). In the next three clauses, the tutor is responding as a reader or listener; we know this because in the context of the session, we could see she was "saying back" what the writer had explained to her (clauses 3–5). Because we coded each

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sentence, whereas others span several sentences. They determined unit length based on the purpose of the utterance (p. 61), whereas we coded each clause (sometimes just part of a sentence) to highlight how one sentence might contain multiple tutoring strategies. We believe our coding permits us to capture the complexity of tutor talk in our writing center, and we acknowledge how the difference in our approach compared to Mackiewicz & Thompson's might lead to different outcomes.

clause and 100% of the tutoring session, we worked to make visible every countable tutoring move and to capture the nuances and complexity of tutor talk.

We coded the tutoring sessions collaboratively (Smagorinsky, 2008, p. 401) and by consensus (Saldaña, 2009, p. 28) as we talked through every clause of an entire transcript, coding and recoding until we reached complete agreement so as to be sure our coding was consistent among the researchers and among different data sets. Each tutoring session was coded by three of the four researchers (the writing center director, associate director, and two undergraduate writing tutors). Two researchers first coded independently in Dedoose. A third researcher, either the associate director or the director, reviewed the codes and discussed the coding with the two original coders, arbitrating discrepancies. If necessary, the researchers collaboratively recoded any passages where questions remained. Throughout our coding process, we reviewed the context of related clauses—looking before and after the coded unit to be sure our code reflected the context and our perception of the tutor's intended meaning.

Students' revisions. In order to connect the revisions explicitly to the tutor talk we analyzed in the tutoring sessions, we experimented with different ways to code students' revisions. We chose not to apply existing studies that code student revision, as in Lester Faigley & Stephen Witte's (1981) oft-cited revision schema or Sommers's (1980) studies comparing students' revision habits with experienced writers' because we were not looking to measure quantity of revision (which both Flower, Hayes, Carey, Schriver, & Stratman, 1986, and Paulus, 1999, found is not predictive of revision quality anyway) or quality of revision (because quality is so context specific). Instead, we were interested in how students revised based specifically on what was discussed in the tutoring session. We settled on an organic scheme drawing evidence from the tutoring sessions, the changes students made to their papers after the tutoring sessions, and what students said in the interviews about goals for the tutoring session and the feedback received from tutors. By triangulating our sources this way, we aimed not only to test for the consistency of our claims (Patton, 1999, p. 1193) but also to give voice to the students' own accounts, helping us make connections among what was discussed in the session, students' perceptions of the revisions made, and the revisions on the page. Using session transcripts and interview data to analyze the revisions also helped us isolate revisions students made in response to tutor talk from other revisions made in response to instructor or peer feedback.[2]

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2   In the interviews, the students also talked about feedback they received from their instructor and peers, which we did not code for in this study. Sometimes, when
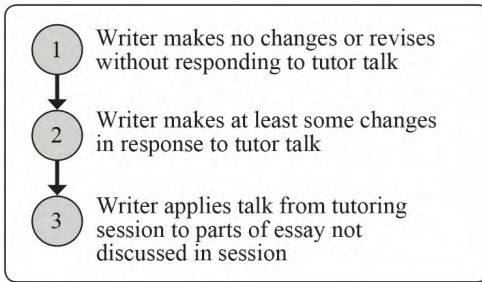
In the interviews, we asked students to describe the types of revisions they typically made on a draft and what students had done differently, if anything, as a result of meeting with a tutor. We were concerned exclusively with the type and extent of revision discussed in the session, which may or may not have coincided with the students' typical revisions. We then analyzed the tutoring-session transcripts to locate the tutor talk the students described as influential and then looked in the posttutoring draft for evidence of revisions that aligned with the tutor talk. For example, in her interview, Marie[3] described her goal for the session as well as the changes she made to the paper after the session: "When I came into the center, what I was really struggling with was my conclusion paragraph because I feel like a lot of times conclusions are just really bland and don't really do anything for the paper . . . so I felt like that was, um, what my problem was. . . . I like, completely revamped my conclusion paragraph after coming to the center . . . and I feel like it added a lot to my paper." We then looked at the tutoring transcript to see if, in fact, the conclusion was discussed. Marie said to the tutor, "I think my conclusion paragraph is kind of weak right now. Um, I think it's mainly summarizing my paper . . . and not really adding anything to it, but I don't really know what to say instead." In talking further with the tutor, Marie realized she needed to make her rhetorical analysis "relevant to a present-day audience." Track changes in Google Docs shows us what students deleted, added, and maintained. We see in Marie's revision that she replaced most of her conclusion with new language.

Through this process—of aligning the student's account of the session, the content of the session itself, and the revisions made to the paper after the session—we made a holistic determination of degrees of tutor influence, ranging from one to three, for each data set (see Figure 1 below). A holistic determination allowed us to assess the revisions made based on the tutor talk, which could vary widely across the 10 sessions, rather than on external criteria, such as a class rubric. It also permitted us to align our analysis of students' revision with our research goals and with the students' goals for revision, as they discussed them in the interview.

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the student's writing center session was after a conference with their instructor, the student's goals for the session related to the feedback they had received from their instructor. When the writing center session was before the instructor conference, students noted in the interview that tutor and instructor feedback aligned.

3   We use pseudonyms here and throughout.

Figure 1. Organically developed coding scheme for degrees of tutor influence

1	Writer makes no changes or revises without responding to tutor talk
2	Writer makes at least some changes in response to tutor talk
3	Writer applies talk from tutoring session to parts of essay not discussed in session

If after meeting with the tutor, students made no or minimal revisions to their essay or only made the types of changes they would typically make (which we determined by what they stated in the interview), we coded this as a *1*. Essays that were coded as *1* generally showed light revision: some addition or deletion of sentences, but usually just word, spelling, or grammar changes—what students generally referred to as "editing."

When a student made revisions to their work that directly corresponded to what was discussed in the tutoring session, we coded that as *2*. For example, Marie's case discussed earlier was coded as a *2*. Marie came into her tutoring session wanting to discuss her conclusion, she and the tutor worked on the conclusion, and then she revised the conclusion after the tutoring session. *Level 2* revision can also be described as a some-but-not-all application of tutor talk to revision. We see this occurring in two ways: one is when the student did not take on or apply everything discussed in the session to their revision (in this case, some of the talk was applied but not all). The second way is when the student revised one section of the paper based on tutor talk but did not apply that concept to other sections of their paper (in this case, the talk was applied to some but not all of their paper). For the former, for example, the tutor suggested the student develop their analysis and improve topic sentences; the writer worked on analysis but not the topic sentences. For the latter, a student may have wanted to improve topic sentences, discussed at least one with the tutor, and then revised that sentence but not all of the others.

If writers made revisions to their work that directly corresponded to the tutoring session and the writers also appeared to apply elements or strategies discussed about one section of their work to other sections not directly discussed in the session, we coded that as a *3*. For examples of *level 3* revisions, see discussion of the case studies in the penultimate section of this article.

Findings and Analysis

Tutor Talk

Because our initial goal was to understand whether certain combinations of tutor moves (different types of comments) led to different levels of revision (degrees of tutor influence), we calculated the overall number and percentage of tutor moves in motivational scaffolding, cognitive scaffolding, and instruction. Within each of these categories, we further calculated the number of specific subtypes of tutoring moves in the motivational and cognitive scaffolding categories but not the instruction category. While *Talk about Writing* (Mackiewicz & Thompson, 2015) does define three "tutoring moves" within instruction—telling, suggesting, and explaining—and we identified four in our coding scheme—telling, suggesting, explaining and exemplifying, and assigning a writing task—in the interest of focusing on scaffolding, we do not break down instructional moves in our analysis in this article.

Table 3
Total Numbers of Tutoring Moves and Percentage Breakdown Plus Degree of Influence, All Sessions

Session	Motivational scaffolding	%	Cognitive scaffolding	%	Instruction	%	Total moves	Degree of influence
1	38	31.7	41	34.2	41	34.2	**120**	2
2	29	19.3	76	50.7	45	30	**150**	3
3	42	22.7	54	29.2	89	48.1	**185**	2
4	35	24.5	57	39.9	51	35.7	**143**	1
5	102	20.5	218	43.9	177	35.6	**497**	3
6	34	16.1	112	53.1	65	30.8	**211**	2
7	35	20	74	42.3	66	37.7	**175**	2
8	25	20.5	50	41	47	38.5	**122**	2
9	58	25.6	134	59	35	15.4	**227**	2
10	29	22	75	56.8	28	21.2	**132**	1
Total	427		891		603			
Mean		21.8		45.4		32.8		

We offer Table 3 as a complete table of the number and percentages of tutoring moves for each tutoring session, as well as the degree of tutor influence we settled on, in order to show both the range and similarity of tutoring talk across the sessions. (We discuss our coding and analysis for determining degrees of tutor influence below.) What is obvious from the data here is that all three tutoring moves are used in all 10 sessions with a, perhaps, surprising similarity in terms of frequency and percentage of use across all sessions. Overall, cognitive scaffolding was used more often (45.4%) in these sessions than instruction (32.8%) or motivational scaffolding (21.8%); this information can also be seen visually in Figure 2. For cognitive scaffolding, usage rates range from 29.2% to 50.7% of the tutoring moves within a session; instruction usage ranges from 15.4% to 48.1% of the tutoring moves; and the use of motivational scaffolding ranges from 16.1% to 31.7% of the tutoring moves. By comparison, overall, Mackiewicz & Thompson (2015) found in their 10 sessions that instruction was used most frequently at 44% followed by cognitive scaffolding at 34%, basically the converse of our findings; the usage of motivational scaffolding at 22% was similar to our finding (p. 79). It's possible our decision to code individual clauses, shorter units than what Mackiewicz & Thompson generally coded for, resulted in a higher count of cognitive scaffolding.

Figure 2. Occurrence of scaffolding and instruction, all sessions
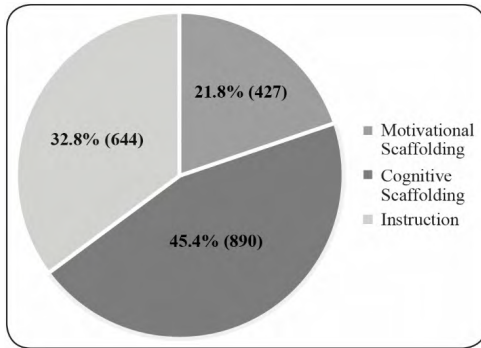
Figure 3. Occurrence of motivational scaffolding, all sessions
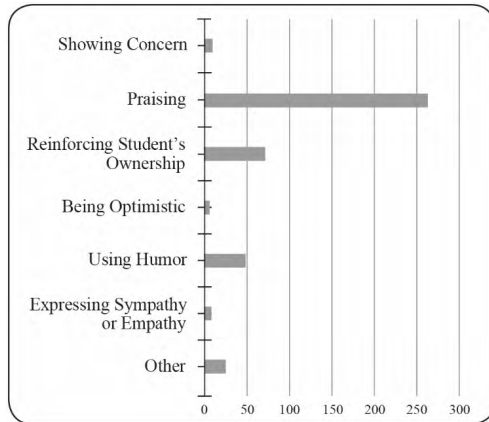
Figure 4. Occurrence of cognitive scaffolding, all sessions
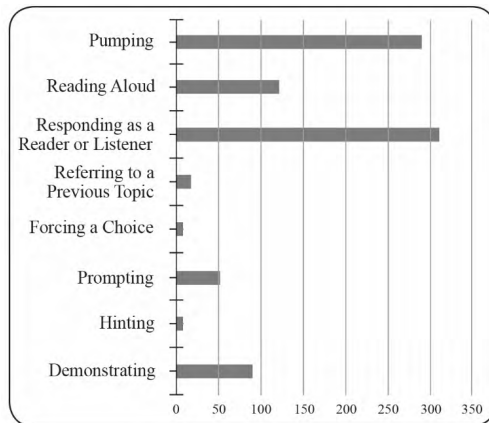
Within motivational scaffolding (Figure 3), by far the most common-ly used strategy was *praising*, followed by *reinforcing students' ownership*, then *using humor*, then *other*, a code we developed to capture tutors' verbals that indicated "I hear you . . . keep talking." *Showing concern*, *being optimistic*, and *expressing sympathy or empathy* were used minimally. Within the category of cognitive scaffolding (Figure 4), *responding as a reader or listener* was the most used technique, followed by *pumping*, then *reading aloud*, then *demonstrating*, and then *prompting*. The sessions used minimal *references to a previous topic*, *forcing a choice*, and *hinting*. We note that session 5 (disaggregated in Table

3) skews these total numbers of tutoring moves because it was a longer session with a tutor who held the floor for much of the session.

In contrast to Mackiewicz & Thompson (2015), we found our tutors used cognitive scaffolding more frequently than instruction or motivational scaffolding. We had hoped a finely grained analysis of the types of tutor talk used in individual sessions would give us a sense of how our tutors conducted tutoring sessions and how students revised, and to what extent, based on specific tutor talk; however, we did not find certain combinations of tutoring moves led to different levels of revision.

Degrees of tutor influence. After coding the tutoring sessions, we then turned to the students' compositions; track changes in the Google docs made visible the extent of revision. We coded two of the 10 sessions at a degree of tutor influence *level 3*, six at *level 2*, and two at *level 1* (Table 3). With two exceptions, sessions 4 and 10, we saw degrees of tutor influence at minimum in the *2* range, which indicates 80% of the writers made changes to aspects of their drafts that directly connected to what was discussed with the tutor.

Sessions 4 and 10 were at *level 1*, meaning that after meeting with the tutor, the students made no or minimal revisions to their essay or only made the types of changes they would typically make (which we determined based on what they stated in the interview). In other words, they did not make revisions in response to tutor talk. Of course, there could be other reasons tutor talk did not appear to influence change in the student's draft. For instance, the student may have been further along in their process and did not feel revisions were necessary, or maybe the tutor talk was persuasive but the student was unable or unwilling (due to lack of experience with revision or lack of time) to implement the suggestions on their draft before the due date. From the student interviews, we know that for session 10, Sean was a highly motivated writer who said he had already made substantial independent revisions to his draft prior to his tutoring session. In his session, we note a high use of cognitive scaffolding, at 56.8%, and the analysis breakdown shows a dominant use of pumping and responding as a reader or listener. This suggests the tutor was seeking to engage Sean by asking questions and invoking an audience, strategies a persistent tutor might use with a student who is less open to making further changes because the student already has substantially revised their essay. For session 4, even though Sarah did not make many revisions on the page, she described in an interview using a process of "reread[ing] with a critical eye" after her tutoring session. This session had a relatively equal balance of the three tutoring strategies, so what we can say about this session is that tutor talk possibly supported the student's motivation to return to the draft but not to make further changes.

The most common degree of tutor influence, occurring six times in our ten datasets, was *2*. In datasets that we code as *2*, we saw two main responses to tutor talk: students directly applying tutor talk, as we discuss earlier with Marie's example when she revised her conclusion based on tutor talk but did not make any additional revisions to her paper, or students applying at least some of the tutors' feedback to some sections of their work but not to sections not discussed in the session. With just six sessions, it is difficult to discern a pattern. All we can say is that despite what might have been discussed in the tutoring session, six students in our set of 10 were able to make revisions to their papers in some areas but were unable to take up all the suggestions or to consistently make revisions that applied lessons learned in their tutoring sessions to parts of their paper not directly discussed in the session. It is not surprising that *level 2* is most common; first-year students are learning how to revise their work independently and based on feedback, and they are balancing their motivation to do well in the assignment with often a limited amount of time to revise or minimal tools to manage their time effectively. In addition, first-year students may also not yet have the confidence to revise beyond what's been discussed with someone whose writing expertise or opinions they trust.

We coded two student revisions at *level 3*. We discuss these two examples more fully because we believe they illustrate success stories of writing center work: these two examples illustrate a widely accepted hope in our field that students will transfer strategies and lessons from the tutoring session to new sections of the writing.

Degree of Tutor Influence 3: A Case Study of Two "Successful" Sessions

In the two sessions we categorized as *level 3* degree of tutor influence, we found evidence of the student applying what was discussed in the tutoring session about some parts of their essay to other parts of their essay not directly discussed in the session. To discuss these examples, we start by looking at the tutor talk and then move to the students' interviews and revisions in order to examine the alignment among these three sources of data.

Tutor Talk

The first observation to note about tutor talk for these two sessions is how similar, or close to the average, the patterns of tutor talk are in comparison to the other sessions analyzed for this study. Motivational scaffolding is close to the average of 21.8% for these two sessions, with session 2 at 19.3% and session 5 at 20%. Instruction is below the average of 32.8% for session 2 (30%) and above average for session 5 (35.6%), but

not by much. And cognitive scaffolding is above the average of 45.4% for session 2 (50.7%) and slightly below average for session 5 (43.9%) in comparison to the other eight sessions analyzed in this study, but there are other sessions (for instance sessions 6 and 10) where cognitive scaffolding comprised more than 50% of the session.

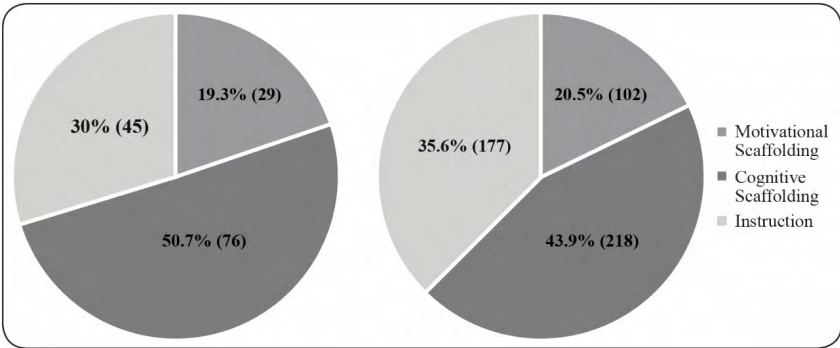*Figure 5.* Occurrence of all strategies, session 2, Tina, and session 5, Sam

Figure 6. Occurrence of motivational scaffolding, session 2, Tina, and session 5, Sam
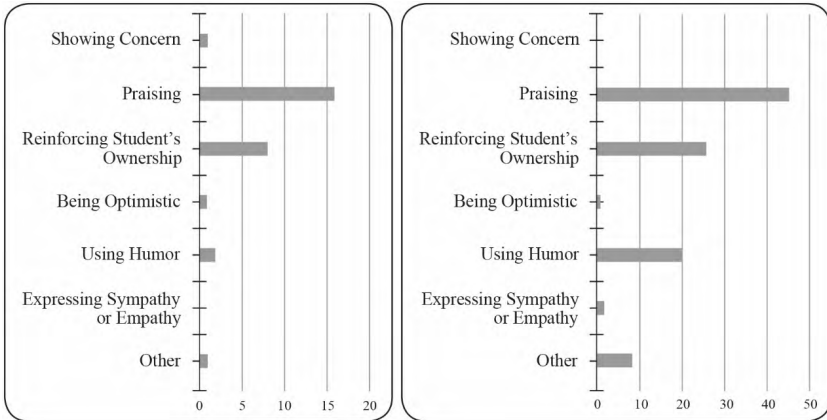
Figure 7. Occurrence of cognitive scaffolding, session 2, Tina, and session 5, Sam
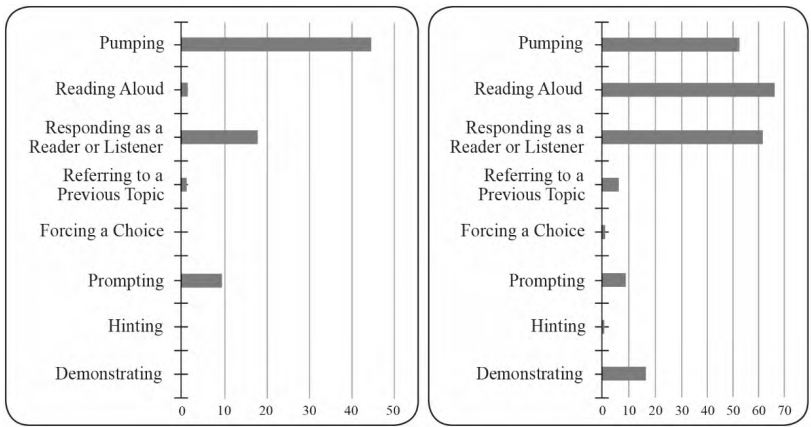
In the breakdown within motivational scaffolding, *reinforcing student ownership* is quite high in both sessions, after *praising* (which aligns with what we found across all the sessions). For cognitive scaffolding, in both sessions *pumping* is high, but for session 5, additional strategies like *reading aloud* and *responding as a reader* are used commonly also. Session 5 was a longer session, so there was more time to read longer passages aloud and for the tutor to respond to those.

Despite how average the tutor talk is, these writers described in the interviews the impact of tutor talk, suggesting it prompted them to apply tutor feedback more extensively than other writers in this study did. We returned again to the interviews with the students involved in these two sessions to understand more deeply their revision choices and their relationship to the tutor talk.

Session 2: Tina

Even though a tutoring session may focus on a limited portion of a work in progress, in this case, a thesis statement, Tina's reflection on her tutoring session and revision to her writing suggest tutor talk can influence students' revisions of other sentences beyond those discussed with the tutor, as well as the conception of revision. Tina came into the center to discuss her rhetorical-analysis assignment, which focused on a chapter of Sherry Turkle's *Alone Together: Why We Expect More from Technology and Less from Each Other* (2011). In the tutoring session we recorded, Tina met with the tutor, graduate-student Kevin, after she had conferenced with her instructor and after she had received peer feedback; in our interview

with her, she described the essay she brought to the writing center as "near final draft—ready."

We asked the students to describe how they typically revise and whether they followed a different revision process with this assignment. Tina said, "[I] typically look for things that don't sound right," "make sure that my points are clear," and "make sure that the essay flows," revision priorities and strategies many of our first-year student participants identified. This time, her revision process was different because, after she had met with her instructor, she realized the essay was "confusing . . . and not as direct[ly related], um, to rhetorical analysis as it should be." So, in addition to the usual approach, she worked to improve transition sentences between paragraphs, on "stat[ing] the exact thing early on that's being analyzed," and did "a lot of reading out loud, restructuring, re-outlining, restructuring." In addition to the feedback from her instructor, her classmates gave her feedback in peer review on grammar, paragraph structure, evidence, and the relationship between the thesis and essay.

Tina stated that her goal for the tutoring session was to improve the thesis statement, specifically to make it more precise and less verbose. She stated she and Kevin discussed the thesis, which he found somewhat confusing. In their session, according to the interview, they focused on reducing the number of prepositional phrases, combining sentences when possible, and translating her thesis into the active voice. However, after the tutoring session, Tina described how she kept going with the feedback she received from Kevin:

> Working on the thesis actually helped me revise later that night and the following day until my essay was due . . . I finished the thesis later on, like, um, constructing it and then went through and, like, looked for, like, sentences that had been like the one that were, had been in my thesis.
> There were still some spots where I would address a point and then not come back to it 'til the end . . . I had to be really, like, "Okay, if I had never read the paper, if I had never seen this before, like, what, what could be better? Even if, if I think it's okay enough, what could be better?," so that was where I kind of was at that point so I found, like, two or three places throughout the rest of the essay where I

> could just, like, move a sentence up or move a sentence down, and, like, compare . . .

Comparing her pretutoring draft with her final draft, we noticed Tina revised sentences in every paragraph of her essay. As we would have expected from her interview, she revised her thesis in the introductory paragraph to minimize the number of prepositional phrases and combined two sentences (see Sample 1).

Sample 1
Tina's Revisions

In Sample 2, from the main body of Tina's essay, we see evidence of almost all the revisions Tina talks about in her interview. She crafts a more specific topic sentence that addresses Turkle's rhetorical appeals. She drops a number of prepositional phrases (e.g., "before using Skype" and "through her video camera"), selects stronger or more precise verbs, and removes extraneous words.

Sample 2
Tina's Revisions

Tina made revisions discussed with the tutor to the parts of the paper directly addressed in the session, but we coded this session a degree-of-tutor-influence *level 3* because she also made revisions related to the tutoring conversation in other parts of the paper, such as the body paragraph in Sample 2. Tina describes her nuanced understanding of this revision process, which we understand is influenced by her interaction with Kevin: "I think revision is a very long process, and I don't think that you can underestimate it . . . it's a lot about holistic changes to make sure that your essay makes sense, but, um, a lot, a lot of those involve going in and being nitpicky about what you decide to include and how you decide to include [it]."

Session 5: Sam

In our second example of *level 3* tutor influence, we see tutor talk supported this student's understanding of genre conventions, which led to his revising parts of the paper not discussed in the session. Like Tina, Sam was in a technology-themed first-year writing course but with a different instructor. Sam's writing center visit occurred after he had met with and received feedback from his instructor. The focus of Sam's rhetorical analysis was a two-part blog post titled "The AI Revolution," written by popular technology blogger Tom Urban.

In his interview, Sam suggested that his revision plan was more focused for this assignment than for previous ones. In response to the question, "What do you usually do as you revise?," he answered vaguely that he "revises in stages." This time, however, because he had feedback from his instructor and from the writing center tutor, he had a more targeted plan for revision: "[I had] a really good plan of what I actually had to go and fix . . . [and] ended up just rewriting two paragraphs right off the bat and kind of went back and did my, like, piece-based revision."

We noted that his visit to the center helped him see more clearly his writing from a reader's perspective. For example, during the session, his tutor Danielle suggested he should define specialist concepts for his reader, such as Criswell's Law of Accelerating Returns. She further encouraged him to include Urban's visual of "the intelligence staircase" and to analyze it more thoroughly, again to provide context for his reader, which he ultimately did. Finally, Danielle gave Sam a concrete heuristic for rereading the text he was analyzing: What is the author doing? How is he doing it? How does it tie in with purpose or audience? Sam indicated in the interview that he used those questions to develop arguments in his body paragraphs, add analysis that refers back to the thesis, and extend the thesis to include audience concerns. He revised his essay so it is more pointedly a rhetorical analysis.

In his new thesis, revised in response to his tutor's feedback, he articulated a more precise conception of Urban's audience that recognizes its eclecticism.

Sample 3
Sam's Revisions

> Specifically, Urban examines the future of Artificial Intelligence (henceforth referred to as AI) in his two part post titled *The AI Revolution*. For an extremely complex topic fraught with technological impossibilities and ethical implications, Urban is able to ~~synthesize technical sources to~~ **provide background and make** ~~an argument~~**simple arguments through** ~~cartoon depictions~~**logical progressions that my grandma would understand. He** ~~clearly explains~~**defines** amusing ~~constructs which~~ explain **his thought processes** ~~by defining amusing constructs~~ **and** ~~depicting~~**depicts them in** goofy **cartoons and charts. We will examine** ~~the~~**his use of** ~~his~~**the construct of** the **"Die Progress** ~~Units~~Unit**" as well as his "Intelligence Staircase" analogy to convince the general public that AI will drastically change the world in the near future** ~~and is something to be both worried and excited about~~**for better or for worse and to engage a motley audience in a topic that has generally been limited to academics and enthusiasts.**

A body paragraph (Sample 4) was discussed generally with the tutor. After the session, Sam added a figure and explained the artist's choices related to the intelligence spectrum and their relation to Urban's purpose; he also speculated on the visual's impact on the audience. These revisions suggest Sam applied strategies learned from an earlier conversation with Danielle about how to present his analysis more clearly for his reader.

Sample 4
Sam's Revisions

> **To explain how we will get to this impossible future** with a simple analogy**, Urban diagrams what he calls the "Intelligence Staircase"**~~.~~**"** (Figures 1 and 2)—a cartoon depiction of the intelligence spectrum from ants to beyond humans. **Right now, humans are the most intelligent beings up on the top step with other terrestrial animals occupying the several steps below us. ASI that is able to improve upon itself may** ~~be~~**escalate to hundreds or thousands of steps above us**~~.~~ in a frighteningly short period of time. In ~~the~~**his** cartoons depicting the staircase, Urban portrays **humans as awkward stick figures** completely **unaware of the** ~~realm of the~~ **huge realm of superintelligence**—the possibility **that** ~~there are ways of thinking and concepts~~lies above them (Figure 1). He shows **that** our assumption of being at the absolute top of the staircase is naive and contrasts this view with the more realistic Figure 2, displaying how **we could never even start to understand the** ~~framework in which they are framed in.~~ideas and technologies resulting from ASI. **This thought is both humbling and dehumanizing.** The most striking aspect of Figure 2 is the total uncapped vastness of the intelligence spectrum and the fact that humans are grouped so closely together with chickens and ants—animals we view as highly unintelligent. Urban successfully invokes a sense of smallness and insignificance in his audience akin to the feeling of staring into the night sky and imagining just how big the universe really is. **Urban writes, "a chimp can become familiar with what a human is and what a skyscraper is, but he'll never be able to understand that the skyscraper was** *built* **by humans.**~~"~~**"** ("Our Immortality or Extinction"). **In the example of comparing humans to ASI, we are just chimps**—**unable to make mental connections that seem so obvious at a higher intelligence level.** While discussing this existentially frightening topic, Urban maintains a comical tone, making discussion surrounding AI digestible and enjoyable for everyone.

In addition, Sam added eight new sentences to the conclusion, a part of the paper not discussed with the tutor, which nevertheless synthesize much of what the session focused on, including Urban's rhetorical purpose and strategies. Throughout, Sam's revisions show he worked to explain more carefully how Urban presents highly complex and consequential science to a reader unfamiliar with AI and the blog post. We coded this session a degree-of-tutor-influence *level 3* because Sam made changes to parts of the paper discussed with the tutor as well as to many sentences and a number of paragraphs not discussed with the tutor.

This session ran long. At 45 minutes, there was a lot more tutor talk than in any of the other sessions (497 codes compared to the next-highest at 227), suggesting that the tutor was providing more detailed feedback or even perhaps that the dialogue between Sam and the tutor was more sustained. This extended session may explain why the degree of tutor influence is higher. He also came in with a clear goal for the session. Having met with his instructor before the tutoring session, he knew he needed to develop his body paragraphs and conclusion, but he wasn't sure how. His conversation with the tutor gave him the tools to move forward with the revision. In his interview, Sam explained that he learned from this experience that revision is more productive when you "think about what needs to change" before you begin to revise. In both cases, we see students articulate developed understandings of the revision process they describe as emerging in part from their interactions with the tutor.

Conclusion

Our study demonstrates the applicability of Mackiewicz & Thompson's (2015) coding scheme to new tutoring contexts, which helped us to understand not only tutor talk in our writing center but how that talk might influence students' revisions. One of the goals of a writing center session, in addition to getting the student to talk about their writing, is for the tutor to talk in such a way that the student hears the tutor and then applies what they heard to a subsequent draft. To observe such tutor influence, we developed a new method that measures tutor influence based on a degree-of-influence scale. The scale uses an organic coding method that draws on the student's account of the writing center session, the tutor talk in that session, and the students' documented effort to revise their work after the session. We show that what was discussed in the session in most (80% of) cases produced an observable effect on the student's revision, confirming that yes, students do revise based on what was discussed in the tutoring session; this finding confirms previous studies that also observe students' revision in response to feedback (Ferris 1997; Williams 2004). We

also found that, in some tutoring sessions, students apply feedback to other parts of their writing not directly discussed that still aligns with what was discussed in the session.

Williams (2004) has shown that "the focus of discussion is usually the focus of revision," that tutor scaffolding supports revision, and that active participation by the student in the session is important for revision to occur (p. 182). Our study strongly confirms the first two findings and suggests the third as well. Like Thonus (2002) and others, Williams acknowledges that measurement of writing improvement is an open question, but Williams nevertheless uses a taxonomy to assess her subjects' writing improvement and revisions in response to tutor feedback; her study was less concerned with student goals for their writing. By contrast, our study, informed by writing center theory that radically centers student concerns, questions, and goals, identifies revision outcomes from the perspective of the student's goals for the paper, as described in the interview, and from the talk in the tutoring session. "Improvement" in our study is the student returning to the text to continue to experiment and solve problems. We were interested in determining the tutor talk that supported this return.

We do not have sufficient data to claim a certain combination of tutor talk leads to more or less influence or revision, but we do feel confident in saying the combination itself—the individualized and situation-specific mix of cognitive scaffolding, motivational scaffolding, and instruction—can lead to revision. In our two sessions with the highest level of tutor influence, we identified more cognitive scaffolding in use in comparison to instruction and motivational scaffolding, but not at a higher rate than for sessions with less revision. Further study could examine whether cognitive scaffolding, as compared to the other strategies, is more likely to lead to higher tutor influence and therefore more revision. Further study might also investigate whether particular tutor moves within the category of cognitive scaffolding are more likely to correlate with higher degrees of tutor influence and more extensive and independent revision. Finally, further study might more deeply investigate students' motivation to revise and the relationship of their motivation to their experience in the tutorial and the types of tutoring moves made by the tutor.

More generally, our findings imply the usefulness of focusing on scaffolding as a pedagogy and vocabulary for tutor education and for assessing the effectiveness of tutor talk, as John Nordlof suggests (2014, p. 59–60). Directors and tutors alike can emphasize using a combination of cognitive and motivational scaffolding and instruction in tutoring sessions with the knowledge that a combination will impact a student's revision. Our study begins to show the value of this approach to supporting stu-

dent's revision above and beyond the sections of their writing discussed in a tutoring session.

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