Sydney's Story: Experiencing Disconnection

Using Relational Cultural Theory and the Listening Guide
to explore the experience of a woman engineering student

BRITTANY ARTHUR, PHD • COLLEGE OF COOPERATIVE EDUCATION & PROFESSIONAL STUDIES
UNIVERSITY OF CINCINNATI

INTRODUCTION

The field of engineering has been labeled the "last gender-equitable" profession in the United States (Pierrakos, Beam, Constantz, Johri, & Anderson, 2009, p. 1). Although women in engineering have been a research hot topic for decades, the field overall has made little progress in recruiting and retaining women since the mid-1990s (National Center for Science and Engineering Statistics, 2023). This single case study explores the co-op experience of a single woman undergraduate engineering student to better understand how relationships and connections impact women's experiences in engineering. The Listening Guide is utilized as the method of analysis through the lens of Relational Cultural Theory.

RELATIONAL CULTURAL THEORY LITERATURE

In many developmental models, self-sufficiency and independence are seen as the hallmarks of maturity, stating that development is based on separation and individualization (Miller & Stiver, 1997). However, recent research indicates that individuals grow through relationships with others (Jordan, 2014; Walker, 2020), placing relationships and connection at the center of human development. Modern neuroscience research supports the notion that the pain associated with disconnection is recorded in the brain the same way as physical pain (Banks, 2011). Theories such as Relational Cultural Theory (RCT) state that growth and development happen through relationships, not separation and independence (Banks, 2011; Walker, 2020). As stated by West (2005), RCT "is really speaking to a different paradigm entirely, one that appreciates and investigates a relatedness, an interconnectedness-one" (p. 101). The theory's ability to "focus on the interaction between macro issues and micro problems" (Adams, 2004, p. 151) makes it an ideal theory when exploring the experiences of women in engineering.

Jean Baker Miller, Alexandra Kaplan, Judith Jordan, Irene Stiver, and Janet Surrey developed Relational Cultural Theory (RCT) to fill in the gaps in our previous understanding around development, emphasizing connection and capturing the unique experiences of women. RCT highlights that growth and development do not occur independently or in a silo, but rather through "growth-fostering relationships" with others (Miller & Stiver, 1997, p. 16). RCT holds that only through "participating in growth-fostering relationships" (Miller & Stiver, 1997, p. 16) can growth and development occur, and challenges us to look at how connections with others play into our development. Connection is not merely just having an exchange with another person that makes you feel good, however; it is the act of being "heard and understood" (West, 2005). This helps us to create a sense of worthiness, where we believe our thoughts and feelings matter and are valid (West, 2005).

For women, experiencing a sense of connection with others is the central feature of development, as "women's sense of self and of worth is most often grounded in the ability to make and maintain relationships" (Miller & Stiver, 1997, p. 16). Although it is central to their development, women may find it extremely difficult to develop mutual growth-fostering relationships in a culture that views empathy as a weakness.

Patriarchal ideologies cause us to privilege masculine characteristics over those seen as feminine; however, "such priorities and preferences explicitly devalue core elements of our humanity and contribute to a decline in a familial and communal bonds and disconnection from oneself and others" (Way, Gilligan, Noguera, & Ali, 2018, p. 4). Chu (2018) reminds us that as long as having close connections and relationships is associated with femininity, boys' and men's desire to be in relationships will be seen as a weakness. In *The Crisis of Connection*, Way et al. (2018) refer to the disconnection many are experiencing—an inability to be in meaningful relationships and connection—as a crisis. Jordan (2004) suggests that it is more important to change the systems that prevent us from being in deep relationships with others rather than putting the responsibility onto individuals. According to hooks (1989), we must remain mindful not to disempower other people, but rather to be critical of disempowering ideologies and values. Recognizing that relationships cannot exist separately from the larger culture, relationships reproduce and represent the "cultures they are embedded" (Jordan & Walker, 2004).

RCT helps us understand how detrimental experiencing disconnection can be. Although disconnection can occur in daily interactions, chronic disconnection that occurs over an extended period of time without change can contribute to a sense of feeling small. When others cannot respond with empathy and mutuality, one can begin to believe that one's feelings and difficulties are all their own (Miller & Stiver, 1997; Walker, 2020). Additionally, when we begin to stereotype ourselves and each other, we begin to disconnect from ourselves and our common humanity (Way et al., 2018, p. 24.). Fedele (2004) observes that we all experience a basic paradox, where we are all yearning for connection while also developing strategies for disconnection. We often move away from connection in an attempt to protect ourselves, especially if we fear we may be met with a non-empathic response or if we sense we do not matter to the other person (Jordan & Walker, 2004).

Way et al. (2018) highlights the difficult choice that many women in engineering experience: "The choice they faced between having a voice and having relationships is psychologically incoherent, in that without a voice, there is no one present, there is no relationship, and without relationship or resonance, voices recede into silence" (p. 9). Women in engineering frequently experience disconnection from themselves and colleagues due to the masculine nature of engineering culture. Most significantly due to "the individualistic and meritocratic values of the profession" (Seron, Silbey, Cech, and Rubineau, 2018, p. 157), which are often adopted and go unquestioned. As such, I chose RCT as a theoretical lens for this study to examine the experiences of connection and disconnection in the engineering space.

METHOD

Sydney was interviewed using Josselson's (2013) relational approach to qualitative interviewing. Josselson (2013) highlights this relational approach to interviewing by suggesting that interviewing should be "moving *with* the participant" throughout the process (p. 8). Additionally, she states, "If we want to understand our participants' experiences in their own terms, we have to invite their narratives and get out of the way as much as possible" (p. 11). Josselson (2013) holds that "an interview is a shared product of what two people … talk about and how they talk together" (p. 1). She reminds researchers that "reality is socially constructed" and that as the interviewer we play a part in that construction.

During the interview, Sydney was asked a series of open-ended questions designed to understand her experiences as a woman in engineering. One initial question was asked from the interview protocol, and then the interviewer followed Sydney's thinking by asking thoughtful questions based on her answers. The initial question was, "Tell me a little bit about your co-op experience." Relational interviewing is often referred to as a dance, where the participant leads and the interviewer follows (Josselson, 2013). In the case of Sydney, that is exactly what happened.

Analysis Method—The Listening Guide

The Listening Guide was implemented to analyze Sydney's interview transcript. The Listening Guide provides a humanistic approach to analyzing and interpreting interviews by paying close attention to the voice and "exploring the interplay of inner and outer worlds" (Gilligan, 2015, p. 69). A voice-centered approach can be especially useful when working with marginalized populations who have historically been disenfranchised to have a voice. Gilligan (2015) explains, "Knowing that people often and for a variety of reasons do not say what they really feel and think, or don't know what they're feeling or thinking…The Listening Guide responds to this challenge as a relational problem" (p. 73).

The Listening Guide guides the researcher through three "listenings" or reviews of the data, where each of these listenings answers specific questions: "(a) What are the psychological features of this particular terrain? (b) How does

the 'I' or first-person voice move across this terrain? (c) What voices within the transcript or text speak to or inform the researcher's question?" (Gilligan, 2015, p. 69). In this study, the three listenings guided the development of the overall themes. Within the findings you will see the use of direct quotes and examples of the 'I' poems to assist with clearly communicating the themes from Sydney's perspective by using her own words.

TABLE 1: THEME CHART

THEME	SUB-THEME	REPRESENTATIVE QUOTE
The Battle of Multiple Identities	Female Identity	*I'm very confident in myself as a woman and as a person but I'm not confident in myself as an engineer.*
	Engineering Identity	*Already those things didn't fit together, being a woman and an engineer.*
The Challenge of Finding Balance	Finding a Balance Between Her Competing Identities (Female and Engineer)	*At first, they [coping strategies] weren't healthy. I would just ignore it because I felt like that was the only option I had.*
	Finding a Balance Between Being True to Herself and Combating Sexism Versus the Fear of Alienating Herself From Her Peers	*When I'm at work and I feel like I have to be professional and have to maintain a good image I don't want to just be the girl that calls everyone sexist.*
Discouragement Versus Assurance	Voice of Discouragement	*All the girls were like you're overreacting … You can't be the girl that's going to go around and call out harassment about everything.'*
	Voice of Assurance	*In some ways it makes me want to stay even more for reasons I mentioned earlier so I can be another percent in engineering field and another woman to help inspire more girls to go into it.*

The first listening involves listening for the plot as it "maps the psychological terrain" (Gilligan, 2015, p. 71). The first listening answers the question, "How does one establish where one is psychologically?" (Gilligan, 2015, p. 71). During the first listening one should pay attention to the landscape of the interview, who is involved, metaphors, repeated words, emotional triggers, gaps, and stories. **The second listening** requires the researcher to listen for the "I," or first-person voice, throughout the interview. The second listening helps us to understand how the individual acts or exists within the world. The second listening requires that we go through a transcript and review "I" statements (the "I" and the verb directly following it). These "I" statements can be combined to create I-poems; doing so can "evoke a voice that is speaking under a surface of dissociation" (Gilligan, 2015, p. 72). **The third (and fourth) listening** are listening for contrapuntal voices; as described by Gilligan (2015), "listening for contrapuntal voices thus picks up the tensions, the harmonies and dissonances between different voices, and underscores the musical aspect of listening where the goal is to listen for nuance, for modulations and silences (such as where 'I' turns to 'you' or drops out completely), to

resist binary categories, and to hear complexity rather than flatten the data" (p. 72). Together these listenings provide an analysis that allows for the research to stay closely aligned to the voice and words of the participant.

Limitations

This research study was designed as a single case study.

Therefore, as a single case study it is not possible to generalize the experiences of all women in engineering based on the experiences of one. Sydney is an able-bodied white woman in her early twenties. Future research needs to be conducted to explore the voices of women of color in engineering who are almost always lost in a sea of white women's experiences.

FINDINGS

Three overall themes were developed from the listenings. Each of the three overarching themes contains two sub-themes, which are shown below in Table 1. The main themes include: (1) the battle of multiple identities, (2) the challenge of finding balance, and (3) discouragement versus assurance. In addition to including direct quotations from Sydney's interview, I-poems are also shared that were developed as part of the second listening process.

The Battle of the Multiple Identities

Sydney talks openly about her two separate identities of being a woman and being an engineer. She explains that these identities are not only misaligned, but they are in fact contradictory; she speaks about how they have to exist separately for her. Throughout the interview she provides examples of how the process of trying to bring her identities together is difficult and something she is still trying to navigate. She discusses in detail how this is a struggle for her, as she is confident in who she is as a person; however, she is not confident in herself as an engineer. She explains:

> I think I tried to separate. Like I'm very confident in myself as a woman and as a person but I'm not confident in myself as an engineer. Already those things didn't fit together, being a woman and an engineer … it was really hard because I've never been one to struggle with confidence.

Sydney attempts to make sense of what she is feeling and experiencing. She goes back and forth between being confident, doubting herself, and trying to reconcile those two things. She makes it clear here and in other areas of the

interview that bringing together her identities is difficult and still a struggle. Through her response, we can hear that the culture of engineering has led Sydney to feel less confident in her abilities. Her response to these feelings was to separate her two identities, attempting to alleviate some of the difficulty and pain associated with being a woman in engineering. In another area of the interview she reflects: "So I definitely just turned down my personality, watered down myself. Which I got better about towards the end. It was kind of frustrating. It was something I didn't even really realize I was doing."

Sydney has an impressive ability to reflect on situations, even though it is still very real and fresh to her. She is able to articulate the inner dialogue that she has with herself, as she tries to understand herself and the situation better, continuously acknowledging it is something she is still trying to negotiate. Sydney's attempt at negotiating leads us to the theme, the challenge of finding a balance.

The Challenge of Finding a Balance

For Sydney, finding a balance means two different things: (1) finding a balance for herself between her two competing identities (female identity and engineer identity), and (2) finding a balance of being true to herself and combating sexism while also trying not to alienate herself from her male peers. She speaks candidly about how the concept of finding balance has been a journey for her and is still something with which she struggles very much.

When asked about the strategies she used to deal with sexist comments she received, she responded:

> At first they weren't healthy. I would just ignore it because I felt like that was the only option I had. I either had to completely ignore it so that it wasn't not only hurting me but that way my guy friends would still talk to me because if I dare say anything about it I would lose literally everyone because everyone there would be offended … when I'm at work and I feel like I have to be professional and have to maintain a good image I don't want to just be the girl that calls everyone sexist. I feel like that doesn't get me anywhere a lot of times.

In the above quote, Sydney describes a daily struggle. Sydney fears the consequences of speaking up against sexism in engineering and this often silences her. In reality she would like to speak up and confront those who make

inappropriate comments or gestures;, however, she acknowledges that her professional reputation could suffer if she confronts others. In other areas of the interview Sydney recounts instances when she did speak up and the consequence was that others disregarded her or brushed her off. She realized from this that even in situations when she has the confidence to be true to herself and speak up, using her voice, she is disregarded by her peers, rendering her once again voiceless and making her feel alone.

When asked, "What is it like to have both of these identities at play at the same time?", Sydney responds, "It's hard, I don't know if I've found that yet." She is honest in her struggle to find a "balance." She states, "so that's still definitely something I'm still working on, trying to find a balance between letting them get away with it and not screaming at them." Here she is expressing her frustration with the sexist comments that her male co-workers make, but also acknowledging she is unable to yell at everyone (even if everyone is making inappropriate comments).

Sydney is a positive, upbeat young woman. However, she notes numerous times in the interview that she has felt as if she has to "water down" her personality so that she can fit into her engineering role. Yet through all her struggles and negative experiences, Sydney remains optimistic about her ability to find a balance:

> I think that it is important to try to build those friendships with guys, which is something I struggle with because half of the guys I become decent friends with then make a horrible sexist comment and I'm like 'Well, I can't be friends with you anymore.' (laughing) Or more often than not they're so awkward to even talk to me. Which in some ways is almost an even worse form of sexism because I'm just another person, just speak to me, the fact that I'm a girl doesn't change anything.

Although in most of the interview, Sydney expresses frustration and confusion, she still manages to sprinkle in comments about her purpose within engineering and why she refuses to give up. In one instance she says, "It kind of inspires me more to really succeed because I saw that we really do need more women out there. I need to graduate and I need to get out in the field to help fix that, to help encourage women younger than me to pursue engineering." Later in the interview she reiterates her thoughts about her purpose: "In some ways it makes me want to stay even more

for reasons I mentioned earlier so I can be another percent in the engineering field and another woman to help inspire more girls to go into it." However, immediately following this comment she states, "But in some ways it makes me want to be, like, okay, I'll just get this degree and get out of engineering, just so I can go do things I'm better at. Which is not true. But it feels like that." This contradictory set of emotions expressed by Sydney helps us to see that she teeters back and forth between being a confident woman and being a woman disenfranchised by the engineering culture.

Discouragement Versus Assurance

Sydney is consistently in environments where she is one of the only women, both in classes and while on co-op. Sydney is an intelligent and confident young woman; however, many of her experiences have caused her to feel frustrated and discouraged. Sydney's voice of discouragement is often seen battling or in competition with her own internal voice of assurance. The I-poem below shows Sydney's feelings of discouragement and inadequacy.

> I was really discouraged
> I didn't
> I remember
> I didn't
> I felt like
> I didn't fit in
> Nothing I could do
> I couldn't do enough
> No matter how hard I tried
> I wasn't qualified

From the above poem we hear a deep sense of sadness in Sydney's tone as she struggles with various emotions, especially feelings of rejection and inadequacy. Sydney often feels as if she doesn't belong in engineering and that she isn't "enough." These feelings of inadequacy stem from feeling that her skills are misaligned with the male dominated culture of engineering that she has come to know. Although these feelings are expressed in various places throughout the interview, we often hear these feelings of inadequacy followed by a statement of empowerment or assurance. For example, "Sometimes I feel like those things aren't valued as much or aren't typical engineer (skills)." Here she is explaining how she believes her skills go against the stereotypical mold of what makes a good engineer. Following the above statement, she articulates, "But they are just as valued and just as important if not more important because that is

what is going to revolutionize the field and help us accomplish new things." Here we can hear her trying to validate herself and her feelings, especially her reason for staying in the field of engineering. At one point Sydney and I discussed her level of self-awareness, and I asked her to describe what it was like being a confident woman walking into the engineering space. The I-poem below is from this discussion, displaying the back and forth, showing the voice of discouragement in dialogue with the voice of assurance:

> *I think*
> *I tried*
> *I'm very confident*
> *I'm not confident*
> *My initial response*
> *I'm just*
> *I did*
> *I was able*
> *My personality*
> *I was confident*
> *I've never*
> *I wasn't*
> *I just felt*
> *I wasn't*
> *I guess*
> *I don't know*
> *I know*
> *I'm smart*
> *I've been*
> *I was*
> *I was*
> *I think*
> *I coped*

In the above I-poem we see the back and forth between discouragement and assurance, for example: "I think, I tried, I'm confident, I'm not confident" and then again with, "I guess, I don't know, I know, I'm smart." We can hear these voices bounce back and forth, almost as if they are battling one another.

The voice of discouragement is most often expressed as the voice of others, such as in the voice of her peers (both men and women) as well as the voice of engineering culture. Sydney provides in-depth observations of her experiences in interacting with her women peers about what she experienced on co-op:

> *Other women my age, whether in computer or*

> *whatever, they saw the same things on co-op. It was really interesting coming back and see how they processed it differently. Because I think I was the only one who came to the realization like, 'Oh, sexism is real and this is bad. Be more confident in yourself and that kind of thing.' Some of the other girls were like, 'Oh, you're overreacting,' like all the girls were like you're overreacting. Like, everyone is nice and no one is looking to harass you. You can't be the girl that's going to go around and call out harassment about everything.*

Through the above excerpt, we hear Sydney attempting to process the comments she has received from her women peers. Not only is she experiencing feeling "othered" by her male peers, but when she seeks validation from her women peers, she gets very much the opposite. Sydney states that some of the "worst backlash" she received was from women peers. She goes further to state that she believes the backlash and denial are used as coping mechanisms for her women peers, stating, "Honestly I think that is kind of a coping mechanism for them and they don't realize they're doing it. Because it is hard as soon as you accept that things are terrible. Your life is never easy after that." If we listen to this quote as a voice poem, extracting the pronouns and verbs, we can hear Sydney's ideas, by hearing her voice of self in dialogue with voice of others as she experiences it.

> *I think*
>
> *You accept*
> *Your life*
>
> *Coping mechanism for them*
> *They don't realize*
> *They're doing*

As Sydney describes her experiences with her peers, she sifts her pronoun from "I" to "you." Raider-Roth (2005) and Brown & Gilligan (1992) both suggest that the shift from "I" to "you" often signals a sense of disconnection from self. An example of Sydney feeling disconnected from her peers is heard here, but it can be suggested that this disconnection for Sydney is a conscious choice. She sees the way her women peers are living and, in an attempt to avoid living that way, she actively disconnects from them. Therefore, in order to not become them, she disconnects from them. However, by disconnecting from them she is consequently

also disconnecting from herself. The separation from her peers may also be a coping strategy for Sydney to preserve herself, since in her experience when she was authentic with her women peers, she was left feeling unsupported and unheard, leading her to feel further disconnected from her peers and the field of engineering.

We continue to see Sydney's struggle, being who she truly believes herself to be and being who society (in this instance her women peers) is telling her to be. Sydney feels othered by her peers, because they are not willing to accept the reality of the sexism they face. I hear her use of "honestly," almost as if this is the first time she has admitted this out loud. Later she profoundly states that once she realized the reality of the situation, "Your life is never easy after that." Again, Sydney shifts from the "I" to the "you" voice when referring to herself, suggesting again that Sydney chooses to disconnect from her peers, but by doing so she is also disconnecting from herself.

The voice of discouragement from society is also telling Sydney what it means to be a good and qualified engineer. She describes the stereotypical engineer as male, introverted, and nerdy, and reflects:

> In general, the culture was very introverted. People were very different from me. Felt like that was everyone ... I feel like specifically not because I'm the only girl but someone who is typically a little more extroverted and outgoing and that kinda thing, it's harder to be with people all the time who don't even really like to talk to me. (laughing)

Here we can hear that Sydney feels as if she does not fit in or belong in engineering. This feeling stems from the feeling that her personality does not mesh with the field, once again contributing to her feeling othered. Throughout the interview she recounts feeling othered for being a woman, but here we see the feeling of being othered stemming from her extroverted personality. These feelings are painful for Sydney. The characteristics that make her who she is—an intelligent energetic extroverted woman—are the qualities that are not accepted in the field of engineering. She goes further to describe that her male peers often suggest to her that the only reason that she was hired was because she was "filling the diversity quota" and Sydney confesses that sometimes that's exactly the way it feels. These comments are examples of discouragement and they continue to leave Sydney feeling alone.

These experiences and comments cause Sydney to feel isolated from her peers and the engineering field. When she asks herself, "Why are you here?" we can hear her internal dialogue. The I-poem from this segment highlights her frustration:

> It makes me feel
> I don't belong
> I will just go
> Somewhere I can succeed
> I don't know why
> Doesn't make sense to me
> I knew
> We were just as interested
> I never really understood
> I was just
> I remember
> I don't understand why
> I don't understand why
> I don't know why
> Confusing thing to me

The above poem captures the essence of Sydney's frustrations with the gender gap in the field of engineering that she too is experiencing, even as a sophomore student. Not only does this poem capture Sydney's frustrations, but also her disbelief, stating multiple times, "I don't understand why" and "I don't know why." In the poem, we also get a sense of rejection when she articulates, "It makes me feel, I don't belong, I will just go." In this poem, we can see Sydney go back and forth between not belonging yet succeeding, being interested yet not understanding, and wavering in an attempt to make sense of her experiences. Here we hear her rooted in the "I" voice, as she wants to ensure that she is not speaking for other women here, but only speaking for herself.

As previously described, Sydney is a confident and bubbly young woman. Although her experiences within engineering thus far have been filled with negativity, she attempts to provide herself with assurance—assurance in her choice of a major/field, assurance that she is smart enough, assurance that she is capable, assurance that her purpose is in engineering, and assurance that she can be successful. The voice of assurance often seems to be on the defensive in Sydney's stories, often elicited by a negative experience that occurred. The voice of assurance sounds like this: "I could figure them (problems) out and I could do them well ... I am well qualified for my job ... I know I'm smart." When reading the

interview as a whole, I can hear that the voice of assurance is what keeps Sydney going and motivated to succeed. When describing her co-op experience and how she was discouraged after seeing so few females at the company, she concludes by saying that she felt much more confident at the end of her co-op experiences after watching the final presentations of all the co-op students. Through these final presentations she realized that her presentation abilities and the quality of work she produced was more significant and meaningful than that of her male peers, and this gave her a boost in confidence. Although she was one of the only women at her co-op company and her male peers were unaccepting of her (negative aspects of the experience), she was still able to perform well professionally (the positive aspect). Below is another excerpt in which we can hear her internal dialogue, where she tries to overpower feelings of discouragement with assurance:

> But honestly I'm starting to realize that I think the only reason I thought I wanted to do that was because I was never confident enough to be like 'I can be the bubbly smart engineer'. So yeah I don't know. I think a lot that I've learned is that good communication skills can be really powerful in engineering.

Above she is discussing how she wanted to become an engineering manager due to the fact that she has strong communication and leadership skills. However, in reflecting deeper she recognizes that she believed that being an engineering manager was her only option in engineering because she strayed from the stereotypical mold of an "engineer engineer," insinuating that being an engineering manager isn't "real" engineering. Her most recent co-op experience has provided her with the assurance that "good communication skills can be really powerful in engineering," reiterating that her skills can be a valuable addition within engineering.

Sydney describes feeling a sense of purpose within engineering, which provides her with assurance about her decision to persist in the field. She expresses a sense of purpose in a few different areas of the interview; however,; each time it immediately follows a segment of her discussing feeling discouraged within engineering.

> It's confusing and frustrating and it makes me feel even more like I don't belong here because if women are doing everything else maybe this one [the engineering field] just has to be the guys' thing. I will just go somewhere else and find somewhere I

can succeed. I don't know why it is, it just doesn't make sense to me ... But getting into computer engineering specifically where the gender gap was so bad I remember just being confused and feeling out of place. Because I don't understand why, I don't understand why women don't go into it. It's not, I don't know why it's any different than any other medicine field or anything like that. Yeah, so it's kind of a confusing thing to me.

Sydney uses the term "confusing" multiple times to describe the way she feels. The feeling of disconnection from self and peers has contributed to this feeling by not allowing her to feel firmly grounded in her experiences and feelings. Let's take a look at the above except in poem form:

> makes me feel
> I don't belong
> I will just go
> find somewhere I can succeed
> I don't know why
> it just doesn't make sense to me \
> I remember just being confused
> I don't understand
> I don't understand
> I don't know
> a confusing thing to me

Above we see a powerful expression of her discouragement, saying specifically "I don't belong." But this poem also highlights her disassociation from what she knows, saying multiple times "I don't know" and "I don't understand." As previously explained, Sydney is a confident and intelligent student, but here we hear her struggling to find a voice of assurance. We hear her go into a dissociative state of not knowing.

Following her response above, I asked, "Does it make you feel differently about the engineering field? Or what your future will look like in the computer engineering field?" Sydney responds:

> Oh yeah! For sure because there still isn't women going into it which makes me think that, 'Why else would you not go into that field?' So yeah definitely it makes me think about that. In some ways it makes me want to stay even more for reasons I mentioned earlier so I can be another percent in engineering field and another woman to help

inspire more girls to go into it. But in some ways it makes me want to be like okay, I'll just get this degree and get out of engineering, just so I can go do things I'm better at. Which is not true. But it feels like that.

Sydney notes her purpose here as being another "percent" in engineering and inspiring younger women to go into the field. She sees it as her responsibility to change the field of engineering, to make it more equitable and accepting of women. Later in the interview she says, "I like to see how the things I'm working on are really helping people and really changing things." Again, we see the concept of helping and improving the lives of others. A sense of purpose provides Sydney with the assurance she needs to persist in tumultuous situations. When we move the above segment into a poem, it further strengths this argument:

> *makes me think*
> *definitely it makes me think*
> *makes me want to stay*
> *I mentioned*
> *I can be another percent*
>
> *it makes me want to be like okay*
> *I'll just get this degree*
> *so I can go do things*
> *I'm better at*

Here we can hear the voice of assurance facing strong opposition by the voice of discouragement. We hear the struggle in Sydney's tone: she wants to succeed in engineering, but she also doesn't want the rest of her career to be difficult. We hear Sydney present in the "I" voice, suggesting that she knows both sides of herself here, as if she is aware of this back and forth within her.

Throughout the interview we understand that the voice of assurance helps Sydney persist in engineering. The voice of assurance provides Sydney with encouragement and positive reinforcement in difficult times. Sydney also reflects, as if she herself is trying to bring her experiences and feelings into alignment. I hear her trying to sort her experiences, to uncover the truth of her feelings. Even as she answers certain questions, her responses are filled with equal parts encouragement and equal parts discouragement, which can be seen in the previously described themes. She appears at some points to be trying to convince herself that she will be able to overpower the reality of her experiences. Although these voices of discouragement and assurance are prominent throughout the interview, it is still obvious in Sydney's words that these voices are evolving and changing.

Summary

Taken together, the themes (the battle of multiple identities, the challenge of finding balance, and discouragement versus assurance) highlight the complexity of Sydney's experiences and the tangled process of negotiating identities. Sydney struggles to bring together her competing identities of being a female and an engineer, articulating that this is still something she is trying to navigate. An internal struggle develops for Sydney when she is faced with sexist comments, as she wants to speak out, but recognizes there are potential consequences to her career for doing so. Finding a balance between speaking up and being silent is something Sydney explains she is continuously trying to achieve, but even more important is finding a balance that allows her to feel as if she is being true to herself in the engineering space. Sydney's experiences thus far have been discouraging, leading her to feel as if she doesn't have a place within engineering. When we look at the voice poems specifically, we can hear the discouragement in Sydney's story. Additionally, within these poems we can hear the dangerous consequences of discouragement, a loss of connection with self. This loss of connection with self causes Sydney to feel unsure and go into a dissociated state of not knowing. Sydney's voice of assurance is resiliency and her attempt at keeping herself intact, despite difficult experiences and disconnected relationships.

THINKING ABOUT SYDNEY

During our one-hour interview Sydney invited me to look through the window of what it is like to be a woman in engineering. Sydney displays authenticity and vulnerability as she reflects on her experiences as a co-op student in the engineering field. Her ability to articulate her multiple identities, as a woman and an engineer, helps us understand the complexity of her experiences and the formation of her individual identity as a woman, as an engineer, and as an intersection of the two. Throughout the interview she describes how these identities are competing and how she has to negotiate between them, trying to find balance while also staying true to herself.

Sydney has taught me that the development of a professional identity is complex, messy, and sometimes difficult. Negotiating the competing expectations of her identity as a woman versus her identity as an engineer can prove to be overwhelming and exhausting. Navigating these seemingly

competing identities, however, is crucial to creating an identity and a life where a person feels they are able to achieve what they aspire to do—in Sydney's case, create an impact as a woman engineer. Sydney reflects on the difficulty of her experiences but expresses that she will continue to fight to find a balance among all the aspects of her identity as a woman in engineering.

What I find most profound from the interview is Sydney's ability to reflect on becoming aware of the situation/reality for women engineers in the midst of attempting to negotiate her multiple identities. She notes, "[I]t is hard as soon as you accept that things are terrible. Your life is never easy after that." The tone of her voice in this response conveys that she knows the difficulty she is describing from personal experience. We hear her deal with discouragement throughout the interview, by trying to display resiliency despite the pain of discouragement. The discouragement she experiences causes a disassociation from what Sydney knows. While Sydney is aware of the reality of being a woman in engineering, she is still trying to negotiate a life within engineering that allows her to feel as if she is still holding true to all aspects of her identity as a woman and as an engineer.

Discussion: Sydney through the lens of RCT

Throughout the interview we see Sydney refraining from sharing her authentic feelings with her male peers and colleagues, but also from other women. RCT suggests that if we find it difficult and dangerous to share our feelings and thoughts with others, we begin to find methods to protect ourselves, typically by choosing to not share our feelings and emotions. Miller & Stiver (1997) warn that "if we don't have other people in our lives who can resonate and respond, we become less and less able to state our feelings and thoughts or even to know them" (p. 54). In the long term, these experiences could have lasting consequences for Sydney, as she may retreat from sharing her authentic feelings in the future with colleagues and peers. By withholding from sharing her authentic feelings with others, her ability to create meaningful relationships with others will be impeded.

Within engineering, women often feel as if they are not recognized by their peers and are at risk of developing weaker identities as engineers, and, therefore, feel excluded within the field of engineering (Tonso, 2006). Sydney expresses feeling that her identity as an engineer is not recognized by her peers. She goes as far to say that she has even considered leaving engineering, because she often feels that the skills she possesses are misaligned with engineering. Within engineering, traits traditionally associated with women are generally seen as weaknesses and as unfit for the profession (Seron et al., 2016). Women within the field of engineering are often associated with being emotional, insecure, and irrational, perpetuating the concept of gender binaries that associate rationality with masculinity and emotionality with femininity (Bastalich, Franzway, Gill, Mills & Sharp, 2007). RCT highlights that society often regards the strengths of women as weaknesses (Miller & Stiver, 1997). Chu (2018) warns us that when we are socialized to "privilege masculinity and discount femininity" (p. 100), it can lead to a crisis of connection.

Throughout the interview, Sydney describes regularly experiencing disconnection from colleagues and peers in the engineering field. When Sydney attempts to speak up against the sexism she faces, she is met with backlash. It has been noted that one of the common dynamics and practices in engineering is sanctions for challenging offensive behaviors (Faulkner, 2009), helping us to begin to understand why women quickly stop speaking up about injustices within engineering. After prolonged periods of perceiving their feelings as illegitimate, women stop sharing and begin internalizing these feelings. They then isolate themselves from others and from their feelings, which perpetuates the cycle of disconnection. Sydney experiences disconnection from her peers—especially her women peers—when she shares her negative experiences and they respond by downplaying her experiences. RCT suggests that over an extended period of time without any change, disconnection can cause an individual to believe that their distress is illegitimate, since each instance contributes to a sense of being "small." When others cannot respond with empathy and mutuality, a person begins to believe that their feelings and difficulties are all their own (Miller & Stiver, 1997). Sydney is feeling "small" when sharing her feelings because her experiences are not met with empathy and understanding.

The values and norms of engineering, which include aggressive displays of self-promotion, self-confidence, and technical ability (McIlwee & Robinson, 1992), help create a culture that does not emphasize relationships and connection. In fact, it does the opposite. It can be argued that the culture of engineering discourages individuals from engaging in empathetic relationships, since such relationships go against the ideologies of the field.

We all develop strategies that help us stay out of connection with others. These strategies are developed in an attempt to

ward off experiencing further rejection or wounding; these are strategies of survival (Walker, 2020). Within engineering we see that women often dissociate from other women as a mechanism of survival (Bastalich et al., 2007), attempting to make themselves appear less feminine by adopting masculine qualities and rejecting feminine qualities (Seron et al., 2016). Sydney describes engaging in such behavior by explaining that she chooses not to "really do much with my hair and makeup," but rather to wear natural colors and try not to draw attention to herself. She goes on to admit that this was not her style, but that she was "unconsciously watering down my personality and myself to try to fit in more." Sydney states that she struggles with where to draw the line in these situations of being her true self and not making things more difficult for herself. Sydney is engaging in role playing, which Miller and Stiver (1997) describe as one of the main strategies used for staying out of relationships. Role playing encompasses "a range of behaviors that reflect efforts to please, control, or gain the attention of significant people" (Miller & Stiver, 1997, p. 111). Sydney attempts to control the situation by not drawing attention to herself and trying not to be seen as feminine, but in the process makes herself feel even more disconnected from herself and her peers.

Within the undergraduate engineering space, perceptions and opinions of peers is vitally important to how student sees themselves (Godwin, 2016). RCT reminds us that we "cannot develop a sense of worth unless the people important to us convey that they recognize and acknowledge our experience" (Miller & Stiver, 1997, p. 33). Research stresses that relationships during the college years are essential to a sense of belonging and psychological well-being (Robinson-Wood, 2015). Throughout the interview, Sydney describes attempting to share her experiences with others, but these attempts are often met with disdain. When describing the way she feels about her male peers, she offers, "It's just really frustrating that I have to deal with an emotional burden every day that they don't even know exists." RCT reminds us that when an individual has attempted to engage in a connection with another person and this attempt has resulted in feeling unheard and misunderstood, they will be left feeling disconnected (Walker, 2020). These encounters leave Sydney feeling more alone, isolated, and unseen. It is through these experiences that Sydney begins

to internalize the idea that sharing her true self with her peers is no longer an option. She also attempts to hide her feelings to avoid being seen as emotional and feminine. RCT scholars remind us that hiding our feelings is a common technique used to prevent pain but that keeps us out of connection, hiding feelings in an attempt to gain "relational safety" (Walker, 2020).

As mentioned earlier, the discouragement Sydney experiences causes her to dissociate from what she knows. Therefore, Sydney is not only feeling disconnected from her peers, but she is also dealing with the consequences of discouragement by experiencing a dissociative state of knowing. This dissociation from what she knows also contributes to Sydney disconnecting from herself as an attempt to keep herself intact. Prior research (Raider-Roth, 2005) suggests that if relationships are compromised, our ability to know ourselves is compromised, and therefore our ability to know is compromised. This has significant implications for the co-op learning experience. If a woman's ability to know is compromised due to a lack of meaningful relationships, then her ability to contribute and grow is also compromised. The results of this compromise can have a lasting impact on women's ability to learn and grown during co-op as well as during her career as a full-time engineer.

Future Directions

Additional studies are necessary to explore the diverse experiences of women in engineering. It is recommended that feminist forms of analysis be utilized to ensure researchers stay true to the voices of participants and celebrate the complexity of their experiences. Only by understanding the diverse experiences of women in engineering in their own words can we truly begin to explore the sexism and masculine culture that is embedded in engineering. Judith Jordan (2004) reminds us, "We need to complain. With encouragement from others, complaints become protest. When protest is supported by community, it becomes social action. When communities join together to protest and take social action, social revolution is born" (p. 23). Let me be so bold as to say we need to complain. We need to hear other women complain and we must support them; only then can we find our way back to connection.

REFERENCES

Adams, R. (2004). The five good things in cross-cultural therapy. In Walker, M. & Rosen, W. (Eds.), *How connections heal: Stories from relational-cultural therapy.* The Guilford Press.

Banks, A. (2011). Developing the capacity to connect. *Zygon: Journal of Religion & Science, 46*(1), 168-182.

Bastalich, W., Franzway, S., Gill, J., Mills, J., & Sharp, R. (2007). Disrupting masculinities: Women engineers and engineering workplace culture. *Australian Feminist Studies, 22*(54), 385-400.

Brown, L. M., & Gilligan, C. (1992). Meeting at the crossroads: *Women's psychology and girls' development.* Harvard University Press.

Chu, J. Y. (2018). Boys' nature, boys' culture, and a crisis of connection. In Way, N., Ali, A., Gilligan, C., and Noguera, P. (Eds.), *The crisis of connection.* New York University Press.

Faulkner, W. (2009). Doing gender in engineering workplace cultures. I. Observations from the field. *Engineering Studies*, 1(1), 3-18.

Fedele, N. (2004). Relational movement in group psychotherapy. In Walker, M. & Rosen, W. (Eds.), *How Connections heal: Stories from relational-cultural therapy.* The Guilford Press.

Gilligan, C. (2015). The Listening Guide method of psychological inquiry. *Qualitative Psychology*, 2(1), 69-77.

Godwin, A. (2016). The development of a measure of engineering identity. In *123rd American Society for Engineering Education Annual Conference & Exposition* (p. 15).

hooks, b. (1989). *Talking back.* Boston: South End Press.

Jordan, J. & Walker, M. (2004). Introduction. In Jordan, J., Walker, M., and Hartling, L. (Eds.), *The complexity of connection.* The Guilford Press.

Jordan, J. (2004). Toward competence in connection. In Jordan, J., Walker, M., and Hartling, L. (Eds.), *The complexity of connection.* The Guilford Press.

Jordan, J. (2014). Relational-cultural theory. In D. Coghlan, & M. Brydon-Miller (Eds.), The *SAGE encyclopedia of action research* (pp. 680-683). London: SAGE Publications.

Josselson, R. (2013). *Interviewing for qualitative inquiry.* The Guilford Press.

McIlwee, J. S. & Robinson, J. G. (1992). *Women in engineering: Gender, power and workplace culture.* State University of New York Press.

Miller, J. B. & Stiver, I. (1997). *The healing connection: How women form relationships in therapy and life.* Beacon Press.

National Center for Science and Engineering Statistics. (2023). *Women, minorities, and persons with disabilities in science and engineering.* Arlington, VA: National Science Foundation.

Pierrakos, O., Beam, T. K., Constantz, J., Johri, A., & Anderson, R. (2009). On the development of a professional identity: engineering persisters vs. engineering switchers. In *2009 39th IEEE Frontiers in Education Conference* (pp. 1–6). IEEE.

Raider-Roth, M. B. (2005). *Trusting what you know: The high stakes of classroom relationships.* Jossey-Bass.

Robinson-Wood, T. (2015). The relevance of non-colorblind talk between white women and non-white children in the United States: A discussion. *International Journal of Child, Youth, and Family Studies*, 6(4.1), 646-661.

Seron, C., Silbey, S. S., Cech, E., & Rubineau, B. (2016). Persistence is cultural: Professional socialization and the reproduction of sex segregation. *Work & Occupations*, 43(2), 178-214.

Seron, Silbey, Cech, and Rubineau. (2018). "I am not a feminist, but…": Hegemony of a Meritocratic Ideology and the limits of critique among women in engineering. *Work and Occupations*, 45(2), 131-176.

Tonso, K. L. (2006) Student engineers and engineer identity: Campus engineer identities as figured world. *Cultural Studies of Science Education*, 1(2), 273-307.

Walker, M. (2020). *When getting along is not enough: Reconstructing race in our lives and relationships.* Teachers College Press.

Way, N., Gilligan, C., Noguera, P., & Ali, A. (2018). Introduction: The crisis of connection. In Way, N., Ali, A., Gilligan, C., and Noguera, P. (Eds.), *The crisis of connection.* New York University Press.

West, C. (2005). The map of relational-cultural theory. *Women & Therapy*, 28(3-4), 93-110.