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Abstract
We examine how Berkeley freshmen use communication technologies to manage their relationships with other individuals and groups. Different kinds of relationships demand different levels of interaction, and students make many conscious and unconscious decisions when choosing to use these technologies. We use two metaphors to help describe this selection process. First, virtual spaces give the students a sense of presence despite the physical distance between the people they communicate with. Second, a relationship spectrum helps students determine the effort and types of communication technologies they use when communicating.

Who, What, Where, When and What

I admire people and systems that are, have economical lifestyles that are efficient that can vary their personal interaction as the situation dictates.... So, and in a sense I think that's how person should behave but I suppose I definitely want technology to behave like my personal ideal personal   Amy

As Amy says, certain situations call for different levels of interaction. Trying to analyze the impact of time, space, relationships, and subject matter on communication use is incredibly complicated because every student values each technology, time, space, relationship, and subject matter differently. For example, many students said that they primarily keep in touch with their parents via the telephone. For other students, they may use instant messaging to chat with their parents. Some of the phone using students were hostile to the idea that their parents would invade IM, a technology they confine exclusively to friends.

We want to illuminate the complexity of the decisions that the students make about communication. The seemingly simple action of picking up the phone to call a friend subsumes many decisions and experiences you've had with that friend and with technologies. Similarly, students decide who to communicate with, what the topics of discussion will be, where they are when the communication takes place, when the communication occurs, and what medium to use. All of these aspects combine to form a decision about how to manage this specific exchange with the other party. Two metaphors can help digest this very complex relationship management problem – virtual spaces and the intimate/business spectrum.

Virtual Spaces
Technologies let students occupy virtual spaces where even though they may be separated by thousands of miles, they can feel as though they were right next to each other. These virtual spaces are ones where students can communicate with their friends, families, and other people and transcend the physical places where each person is communicating from. Some virtual spaces are closed off to other people and other groups. Examples of these private virtual spaces described below include parents using IM, a roommate using a webcam, or access to another student's blog. Private spaces are often “weird” to encounter, similar overhearing one end of a phone conversation.

The dichotomy of real spaces versus virtual spaces was a theme repeated throughout our interviews. Many students implied they wanted technologies that let them best recreate face-to-face relationships. For others, they enjoyed the comfort of knowing they have the immediate attention of the other party,

1 Please know that I've cleaned up the quotes, removing colloquialisms like “like” and “ya know” to improve their readability.
as in a phone conversation. The idea that students could get in touch with their friends at any time, anywhere is very much like having your friend sitting right next to you, ready for a chat whenever you want. This idea of virtual spaces is best explored through the stories that the students tell themselves.

The Intimacy/Business Spectrum

This negotiation of relationships with technologies can be seen in the range of technologies students use to keep up with their various relationships. You can imagine a spectrum ranging from “intimate” for the closest relationships and moments to “business” for impersonal or infrequent communication. For intimate relationships, students may dedicate time or unique communication channels for those people. For business relationships, students might use communication methods that they perceive as less demanding, less time consuming, or more formal.

To clarify this concept, think about some of your friends. For your closest friends, you may offer them special ways to contact you – your cell phone number or an email account that you reserve for personal reasons. You may even go to great lengths to contact them when something special happens, like a birthday. For other friends, you might not give them your personal email account, and it may be weird if they somehow obtained it. As a friendship grows, you may eventually offer your personal email account as if they passed an imaginary friendship threshold.

These two metaphors provide a deeper understanding of the ways students use technologies in the context of their relationships. Even though some technologies and groups are lumped together below, they are offered only as examples of using that technology in the context of that kind of relationship. They are not given as absolutes since these judgments vary greatly from student to student. The examples below walk the intimacy/business spectrum from the most intimate to most business-like communications.

Intimate Communication

For every person, you often speak with one person more than any other. Thankfully, the technologies available to the students support this level of communication.

“The person I IM with most] used to be my best friend before we stopped being friends.”
Kim

“I text message most often] with my boyfriend and with my two best friends.”
Eve

“I email the most with...] Lets see it's something between like, a couple of my old close high school friends. And then my parents.”
Luke

“The last time I IMed was] Just right now .. My boyfriend. [We IM] probably everyday.”
Eliza

With close relationships, students choose technologies that they believe closes the distance between them – a virtual space where they feel close. To explain by contrast, many students mentioned that a major flaw of modern communication technology was the lack of seeing the other party in the conversation. As Amy and Mike explain, face-to-face communication offers feedback that other methods lack.
“I would rather socialize with people in person or on the phone because I find instant messenger again impersonal. You can’t find inflection. You can say, just kidding and actually meant the biting insult but you just typed across to them... I think being in person and talking with someone when they’re on the phone you can hear people’s inflections and pauses or when you talks with them in person it requires more honest expression. In instant messenger you can deceive the other person.” Amy

“You talk to somebody online. Sometimes they'll say something but you don’t know if they're joking about it or if they're is serious until you really know the person or observe their online habits... When you're talking to someone directly you get more information. You get like the tone of their voice and facial reactions and things like that.” Mike

Being in college means that many students are far from their families and friends. We asked our interviewees about how they keep in touch with their closest friends and family. Sometimes technology limits these interactions, such as free cell phone minutes or being around a computer to use IM.

“I would say I get at least maybe 10 to 15 phone calls and talk on the phone for at least 5 hours a day. Yes. It’s kind of bad but... we [boyfriend and I] only talk after 9 because of free minutes.” Eve

Students may hold their close friends to different expectations of when they're available as opposed to they're other friends. In this quote, Erin complains about a friend that she can never seem to get a hold of, citing the physical space separation as a reason.

“I use it [mobile phone] when I really have to get a hold of someone but it depends on who. My friend Terry, she does not pick up her cell phone ever, ever, ever. She doesn’t check her voice mail until the end of the week once every week and I don’t even know if she texts people... I get frustrated with her sometimes because we don’t live together.” Erin

James describes these expectations a little clearer. A ringing phone is easy to notice – a sign that one of his close friends is requesting his virtual presence. Other technologies like IM don’t have the same immediacy as a phone; in fact, that's a disadvantage when dealing with close friends.

[With my close friends,] Not so much of email.. more IMing than calling. I think calling is more if we're in the same place and find, like, if it’s more immediate. Just because going online isn’t dependable. Like, that must be a drawback. Because on the phone, it’s ringing, you can’t ignore it but if it's online, it is a flashing window. That you don’t have to do anything about. James

To make the difference between close and other friends clear, some students described their different circles of friends and how they expected each to stay in touch. Joe makes it clear that his closest friends can call him, but other friends must use IM and aren't guaranteed a reply.

“[My close friends would] call me.... [Friends at other universities] have to message me first. My best friend is at ASU Arizona State. He'll call me, and that’s not a problem. Close friends, like close girlfriends, stuff like that, they call me. It’s not a problem. But other people, just message me. I'll get back to you.” Joe
Eve talks with her brother regularly and expects to talk with him on the cell phone, on his drive home. Since she talks with her family less frequently, she expects her brother to relay any information to her parents. This could be another expectation on close friends – to be information bridges between you and groups you keep in touch with less frequently.

“My brother is my best friend… So I talk to him everyday…. And he always calls me when he's driving home… it’s a good 20, 30 minutes drive so he always calls me on the way home… I don’t talk to family that much. It’s sounds kind of horrible, but I always trust my brother is gonna relate this.” Eve

**Webcam**

One technology in particular was used in the context of intimate communications – the webcam. Using a webcam, students have the closest virtual spaces they can with family members, boy- and girlfriends, or other special relationships. As stated earlier, face-to-face communication is the densest communication method; therefore, webcams are one of the best technologies for mitigating physical separation. Students we interviewed with families overseas used webcams more than any other group, and Raj explains why.

“It’s pretty neat to be able to see my brother, my family twelve thousand miles away over the sea.. I just use Skype [Internet telephony software] for the voice capability and my webcam has some inbuilt software….. It’s nice to be able to see each other and talk at the same time.” Raj

Several students noted that these features – video and voice chat – are not available on all instant messaging systems. AIM was mentioned by our international interviewees only when talking about friends in the United States. MSN Instant Messenger is very popular overseas and especially popular for webcam users because it has video capabilities built in.

“I mainly used MSN [Instant Messenger] for talking to people internationally. My family and all my relatives are in China and so we use web cams and mikes and just MSN to talk to them or Yahoo because it’s international and AIM isn’t.” Sarah

Although nobody we interviewed did this, a few students mentioned they knew or lived with people who used webcams for maintaining long distance relationships with a significant other. Before talking about webcams in relationships, Jenny points out that webcams break down a wall that IM provides – a look at your true reaction. Sometimes the restrictions of technology mediated communications can be beneficial.

“I don’t really want to get one because then I’d always have to watch what I look like... They can just see everything you're doing or if they write something funny and you don't think it's funny but you know they want you to think it's funny you just write LOL anyways. But if they have a web cam then you know that... I think its more of a couple-y thing too. I have, for example, the guy that lives right here uses it constantly... he only uses it with his girlfriend basically.” Jenny

Amy tells about her experiences with her roommate's webcam. The intimacy that it affords her roommate is invasive to her. This is one example of closed virtual spaces. Amy feels like her physical
space is being invaded by her roommate's webcam-enabled virtual space.

“A suitemate of mine does [use a webcam]... to speak with her boyfriend. I think it’s really intrusive. It’s always on. People who walk in the room are always videotaped by the web cam. It's slightly awkward. But then, I guess, I am just not used to that sort of thing. It could just be me. I’d say 80 percent of the time it is broadcasting. She is in a long distance relationship so I suppose it offers her some sort of emotional fulfillment seeing her boyfriend and his reactions... So, it’s just sometimes awkward.” Amy

Close relationships are complicated to manage when in close proximity. When distance is mixed in, technologies provide mitigation against the stress of physical separation. When other individuals get involved in these spaces, it’s hard not to feel weird about it. Are you invading their space or are they invading theirs? That may be too hard a question to answer, but it is something to keep in mind the next time you overhear a person having a very personal conversation on his cell phone.

**Run-of-the-mill Relationships**

Technologies support the day-to-day relationships students have with friends and family. On the intimacy/business scale, we've now moved from the intimate end towards the business side. For family, students often treat them differently from close friends for reasons that will be apparent shortly. Berkeley friends are treated differently from high school friends (who often attend other universities) because of the physical distances.

**Family**

Communicating with family members is very important for UC students. Every student we interviewed said they speak with their parents via the telephone. Others mentioned email and instant messaging as other methods used to contact family members (more on email later). Some students implied that they would use IM or email with their parents except that their parents couldn't use those technologies.

“She [mom] calls me. Well, I am supposed to call her but never do. Since… my mom doesn't know how to navigate the computer.” Eliza

“Mostly phone. It's the easiest way. I don’t think my parents can ever use IM. It would be kind of weird. I tried to have my mom do that when my brothers went to college, tried to use it. Just like, 'oh, I'm done typing. What do I do to send?' ‘You press enter.’” Sandra

Like the quote says, many students said seeing their parents use IM would be an unusual experience. As suggested earlier, the virtual space of IM is for friends, not parents. All of these quotes demonstrate that sentiment, some more vociferous than others.

“I think it's weird when parents go on AIM but I have a couple of friends with moms that are on AIM or dads too. I think it's weird.” Joan

“It’s just weird. It is a friend thing. I have my sister on there and a few cousins and whatever but I would never, my parents don’t even know my screen names.” Jenny

“Oh no. Because if they, I don’t know. If they started instant messaging me through any of
those programs, I'd probably kinda freak out. They're my parents and that's my world online. I don't want them to invade it.” Kim

While students overwhelmingly associated parents with phone communication, technology use with siblings was not as clear. One explanation is that we focused on siblings in the context of adoption rather than sustaining relationships. With that as a caveat, students seemed more likely to use IM as one method of keeping up with like-aged or younger siblings rather than older siblings. This could be because older siblings weren't exposed to IM when they were younger and therefore never adopted it.

“I call mom a lot, talk to her over the phone. But for my brother, it's AIM – that's how I talk with him. Because he comes home from school and he is online... He's a Freshman in high school.” Anita

As a contrasting example, Joe is the youngest sibling in his family and the only family member who uses instant messaging. He knows he's unique in his family for this reason.

“My siblings do not use AIM. They only use email. As far as like Internet is concerned or the phone. My parents: no technology whatsoever. Yeah, no email, no AIM, no Internet, any of that. So I guess you can say that I'm the ground breaking person of the family, you know, just trying out all these different methods of engaging.” Joe

This difference of using technology with older versus younger or close aged siblings could simply be because of generational gaps in technology use, an issue discussed in the Business section below. The sibling sentiment presented here is not conclusive and deserves more research. This does not detract from the importance of using technology to keep up with family members. Students are willing to accommodate their parents and family, using technologies in ways they might not use with their friends.

Friends in general

In every interview, we discussed how students use technologies to support friendships. A couple of students reflected on how methods of communication change as friendships change over time. This varies from student to student, as Eliza and Joe show. Here, Eliza says that these communication technologies help friendships grow. As friendships get closer, they get access to more intimate communication methods.

“I still talk to my best friends on the phone. Friends that I would usually talk to more, I guess they are casual friends, we talk online. And I guess that’s how a lot of my relationships built. You don't really know the person but then you start talking to them on AIM, and then you see them at school, then you become closer friends, I guess. And then it moves on to the phone.” Eliza

Joe discusses how he uses instant messaging as a filter for determining whether or not he wants to develop a friendship with someone, giving them access to other communication methods. He's happy that the virtual space of IM lets him get away with “be[ing] a slob,” something he couldn't do if this was a face-to-face interaction. Note that the highest level conversation setting he mentions is face-to-face.

“I was to meet someone new and you know AIM is a very good start for meeting someone
new. It’s very laid back and you can do it at your own will. You can sit there, eat, and be a slob. The other person won’t know about it. You can just talk on AIM. But after good conversation [you ask], ‘hey, what’s your phone number?’ That’s when I would feel comfortable asking for what their phone number is. And then if the conversation is still good, you just go offline and talk to ‘em in person... [Otherwise] you would just like keep on the AIM buddy list.” Joe

**Friends at UC**

Students offered examples of how they interact differently with their friends at U.C. versus those at other universities. Many U.C. students communicate with their peers for help with their assignments or to organize group work, all of which is discussed in the Education section. For more casual contact, technologies are used to find their friends, see how they're doing, and arrange dinner plans among other coordination activities. These coordination activities are often done to support face-to-face communication, a characteristic very different from long distance relationships. As an example, Anita says that finding friends for dinner is managed better via IM than finding them in person or via phone.

“To coordinate going to dinner, I would just I walk out to doorway and [say], 'anyone’s coming for dinner?’ and [they would say], 'yeah.' Or someone would call you… It took more planning, I felt. You would [say], 'it's 5 o'clock. Do I want to get dinner? Let's see who is around. Does anyone want to get dinner?’ Now, it's 5:30, dinner, and you just type 'dinner,' and people [reply] 'yeah, I'll meet you in the hallway in 5 seconds.' It is just faster, I guess, with AIM.” Anita

Joan emphasizes that IM is a coordination tool with respect to her U.C. classmates by offering some examples of how she uses it.

“It’s [IM] never for.... like fun. It’s just like planning mostly and.... like homework and planning.... 'Do you wanna go to Crossroads [cafeteria] after I get off of work?’ or 'are you going to the concert on Saturday night? When should we buy tickets?'” Joan

Likewise, Cat says she uses IM for planning tasks where she'll meet her friends later.

“We plan what we're gonna do like when are we gonna meet, when are we going to go to dinner…or walk to class... just like that.” Cat

Some students talked about lazy situations where they would call or IM dorm-mates down the hall rather than go over and talk to them. Sometimes this is very convenient when they can't be certain where their friends are. This shows how the phone virtual space can overcome limitations of physical space even for people living on the same floor.

“I call people a lot more or I even call people down the hall if I don’t want to walk there... I live in the dorm, so a lot of times people’s doors are closed, so, I just call them instead of having to go find where they are.” Sarah

A couple of students admitted IMing their roommates rather than talking with them, sitting only a few feet apart. This was usually done for humor's sake.
“So, like sometimes we mess around like that. Me and my roommate, she will be right next to me when we talk to each other – IMing each other.” Erin

“Sometimes, I find it funny, but sometimes I think it’s more for like comedy sake but my roommates will be right next to me and we will be IMing each other. Some things, it is usually more funnier when you type it.” Raj

Sometimes the physical constraints of living with roommates can make these students seek private virtual spaces for their conversations. Kim uses IM to chat with one roommate to hide the conversation from the other roommate; she seeks refuge in an IM virtual space.

“I and my roommate were sitting next to each other and we didn’t want to talk. Seriously, I do that. I get too lazy to open my mouth to talk to them. My roommate's like 'I'm sitting 3 feet away from you.' I'm like 'I don't feel like opening my mouth - we're talking online.' Or when there's three of us, you don’t wanna bother third person or we don’t want the third person to know what we are talking about.” Kim

Joan likes IM for a similar reason. Overcrowded dorm rooms limit the places students can go to have intimate conversations, so IM provides a private substitute.

“I don't really use my phone in my dorm... That’s also why IM is really handy because that’s why I use it so much in college... With two people in everybody’s room, someone is always there. You can't talk on the phone and you don't want to go in the hallway.” Joan

**Friends from high school**

Much of the communication between UC students was either about schoolwork or coordinating activities, subjects that usually lead to future face-to-face communication. In contrast, many students previously had those kinds of relationships with their high school friends. Since coming to Berkeley, they've realized that being separated from those friends has changed the dynamics of their relationships. In the past, some students didn't need communication technologies to maintain those ties because school and other activities meant they saw each other daily.

“Yeah, I think most of them did [friend have email], it’s like, they would have some sort of email account. But then why send emails when you see them everyday? It’s like, 'oh, yeah, did you get the email I sent you?’ And [I'd say], 'no, I didn’t check.' Oh, I'll tell you what’s in it.' “ Danielle

“I didn’t really have a point back then [using email]. I mean, I saw everyone that I wanted to talk to everyday anyways.” Jenny

As friends moved apart and eventually on to college, some students saw technologies were useful for maintaining their distant friendships. These technologies let the students keep up with these friends as they want – dedicated or multitasking, frequently or infrequently, long or brief.

“With instant messenger, it kind of removed the need to email for me, just because I’d be seeing them online all the time. And instead of having to write like an email which you know like, you'd send may once a week, giving me an outline of what you done. you would
literally be seeing these people online everyday. You know, you could get little updates that way.” Raj

As Laura points out, one benefit to technologies like IM is that you can multitask. This is a more unusual aspect of virtual spaces – it belies the physical reality of a face-to-face conversation that you have the full attention of the other participant. From our interviews, students accepted this as the reality of instant messaging.

“Well when I talk to friends who don’t come to Cal, it's mostly... everyday happenings. With friends I don’t talk to too much, its mostly small talk... It's easier to talk online and multitask then it is be on phone in multitask so that’s one reason I know most people talk online – that’s usually it's just an understanding between us we doing other things and we are just multitasking, faster, quicker.” Laura

As Eve says, many students could tell that the distance has grown between them and their old friends. The subject matter of conversations is different without the frequent interaction they once had.

“I talk to them less... If I do talk to them, I want it to be more interesting stuff. So if my friend called me after not talking to me for a month, I wouldn't be like, ‘Oh, I showered this morning.’ I'd be like, 'I had a lovely day. I did something really fun but I can’t think of.' “ Eve

Cat has a similar feeling about her conversations with high school friends.

“I talk to them on the phone and then email them every now and then... With people here, talk to them about everyday stuff that you can’t talk to people from high school about anymore because. Its not so much daily stuff to talk about, like homework or when are we are gonna go out for dinner... I still talk to them just not as often. It's more it is like catch up on how they're doing and stuff.” Cat

**Blogs**

Because the students don't have regular interactions with high school friends, they use technologies that help them stay connected despite the distance. For UC friends, students choose technologies that better support face-to-face interactions. In both cases, students often use other means to keep track of their friends, specifically blogs.

Blogs represent a passive way of communicating with friends. After a student publishes a blog entry online, the entry is there for his peers to read at their leisure. Email is also a passive technology where you can be reasonably assured your letter will arrive at the destination and be read by the recipient at some point in the future. Contrast that with active communications like telephone or instant messenger which require immediate attention to the conversation or it ends.

Blogs are used across the relationship spectrum. In the context of maintaining friendships, blogs are often used for making the reader feel connected to the life of the writer. For many students, blogs are how they keep up with news from high school friends – either friends still in high school or friends who are now attending other universities. Joe gives a very pragmatic answer to why he uses a blog. He knows it's probably the only way he can keep up with his high school friends since he's arrived at
I realized that if I am not gonna talk on the phone because I am not that close to friends, and I don’t go on AIM that often so I wouldn’t talk to them then. And you know if they are still in high school... if Myspace [a blogging service] is their way of connecting to me then, sure, why not, send me a message or leave me a comment... Myspace is reserved for more like high school friends.” Joe

Many students find out about their peers’ blogs via an AIM profile. An AIM profile is a part of the text that displays when hovering the mouse arrow over an AIM user's screen name. AIM profiles are another passive means of communication. Students often check these profiles out of boredom and use their own to “announce” things to their friends such as blog posts.

“I read blogs] probably once a week or something. High school friends. Just because it’s on their [AOL] profile and I am bored. Because there is a link and so I just click on that link… A lot of my friends that I don’t keep in touch as much. So, it feels like I still know what’s going on in their lives, maybe.” Eliza

At UC, some students read blogs to learn more about each other and to solidify friendships. These communications reinforce face-to-face relationships.

“Sometimes I feel like that's a way I get to know them, outside of me just talking with them. Everyone's kind of curious about the peoples' private lives – it’s always private but it’s just I feel like I get more insight into what's happening to them that they're not telling me.” Kim

In yet another example of private virtual spaces, many students who blog said they make their writing available only to their friends (via services provided by the blogging website). Some of those students were worried about the wrong people reading their entries, as Sandra describes. Making it private allows the writer to control who can read it, as opposed to a public entry. In this case, the technology ensures that the virtual space is kept private unlike phone conversations that can be overheard.

“You can mark your entries private and then who ever subscribes to your Xanga [a blogging service], they could read it... I started privatizing them when I realized if I got mad and I would write something bad about someone. But I was like, 'oh, what if someone saw that,' then I would like privatize that entry.” Sandra

In some cases a student would read a blog entry and then chat with the writer to follow up, often over IM.

“[blogging is] Another mode, yeah... If I read something interesting that I am curious about, I would AIM them or something like, ‘hey! What happened?’ ” Anita

Overall, blogging habits differ greatly from student to student. Sarah believes it differs between groups of friends.

“[blogs are] Just personal preference. Some of my friends are really into it. Most don’t use it. I don’t know if its outside or whatever. I just feel I needed to use it.” Sarah
Feelings about blogs are very mixed. For each student who likes using them to keep track of their friends, as many thought they're pointless – people begging for attention or writing useless statements. Sandra expresses this feeling through examples.

“I stopped using it [blogs] ‘cause it’s kind of pointless now. Most people will say, 'today I ate a hot dog’ or, 'it was yummy. I feel like eating hot dogs again...’ And some people will only put down their thoughts like, 'what’s the meaning of life...’. Some of them are pretty pathetic like... 'I like this one guy but it seems he doesn’t like me back, so I wrote him a letter, and he is such a jerk because he doesn’t like me.” Sandra

Sarah summarizes the reason why many people dislike blogs very succinctly.

“I prefer talking to them rather then reading their online Live Journal.” Sarah

Blogs are one way friends keep up with each other with lower effort and maintenance. As we move towards the far end of the intimacy/business spectrum, the communications become less frequent and more impersonal.

**Business communication**

Many students prefer certain technologies for business-like communications. Class communication is discussed with Education aspects of technology. However, you should know that many students have a virtual space for school communications, like a berkeley.edu email address, that they keep separate from their personal email. Many business communications are very narrow in subject matter and require only a brief reply. The virtual spaces for these communications are more ephemeral than ones for friends or family.

**Email**

Email was seen by most students as the most business-like technology. One student suggested that there's an understanding about email that the conversation could terminate at any time. A similar sentiment was repeated by other students about instant messenger – you might not get a reply, but that's fine.

“Email, you can initiate a conversation and the person can either chose to reply back you and continue this conversation or not and you wouldn’t feel awkward about it... Imagine if I was on phone... I’ll ask you a question. The person on the phone has to basically say something back. In email, that’s not the case and when I use email, I don’t expect them to reply back to me. So I think it reduces the whole pressure of 'you got to get back to this person.' ” Joe

Email also makes a great tool if you're unsure about the person you're contacting or not comfortable using other methods.

“I don’t really use my email. Once maybe [in a week]. Well I just sent a bunch because I didn't want to call about apartments. They're like, “Yeah, you can come and look at it at 3:00.’ ” Eliza
Part of the “business” attitude towards email could be its association with another generation of users. Students recognize the value of email for its ubiquity and ease, but almost all preferred other ways to keep in touch with their close friends. Anita explains this sentiment.

“Because everyone has email but not everyone has AIM. AIM I think is more student population because email is professional, businesses, family, adult, younger generation…. So communication-wise. email is probably for all around the best and then, the Internet as a whole that is definitely useful.” Anita

Several students mentioned that they use email for school clubs – organizing events and communicating news to each other. Even though these may be student groups, these messages differ from day-to-day interactions and call for other non-friend communication methods. Remember that school communications sometimes occur in a different virtual space, like a separate email account, as opposed to other communications.

“I have also use email for business transactions because the running club – we’ve been looking around… to get banners so I have sent emails of the business like including what we want and something like that.” Joe

Some students use email as a secondary communication method with their parents, writing about business-like or low priority news.

“I send her [mom] probably two emails a day... Not because I’m trying to keep up with her... I call her to keep up with her... If there is something that I need, something that’s going on, something that I need done or something that she needs from me, then we send e-mails.” Ben

Angus summarizes the sentiment that many students mentioned about email – it's more formal.

“I email with the team [a student group], I email with friends who don’t have IM I guess. And like with my family if they have like questions about like finances or something... [For] something like more serious and more businesslike, I will probably email them. It feels more formal to email.” Angus

As detailed as this may have seemed, this barely scratches the surface of the nuanced decisions students make when considering how to incorporate technologies into their relationships. Even generalizing intimate versus business communication is dangerous since that measure oversimplifies some of these decisions. Just remember that this scale and the concept of virtual spaces are mechanisms for understanding how students judge their relationships and choose appropriate technologies for communication.

**Conclusion**

The metaphors of virtual spaces and the intimate/business spectrum help explain the many considerations students take into account when establishing and maintaining relationships with other people and groups at Berkeley. However, these metaphors present an inherent danger. The spectrum shows how students value different technologies for different reasons and relationships, but that spectrum differs student to student, situation to situation, relationship to relationship. For every student who uses instant messaging to chat with a parent is another student who despises that IM use. You
may be willing to IM your friend about trouble with a loved one, but you might not use a phone for that same conversation since someone else might overhear it.

Virtual spaces are useful for understanding the physical space transcendence that occurs using these technologies, but they don't give a sense of what within that virtual space is important for that communication. A student may appreciate the virtual space created when talking on the phone to a friend, but that same student may value speaking with their best friend on the phone more. This measure of a virtual space requires an understanding of the value of each relationship, of each conversation.

Together these concepts help explain how Berkeley students manage their relationships. However, much more work still needs to be done in understanding these relationships. In particular, I recommend two future research goals. First, we did not collect much information on communication with siblings. Because of age and (potentially) generational differences, communication habits between siblings can differ greatly. How do siblings manage communication between each other? How does this change over time? The importance of siblings is also addressed in Megan's adoption research, but there she also realizes the lack of research in this area. Siblings cannot be overlooked in the lives of these students and is a topic worthy of future research.

The other area of future research I recommend is to study relationships and how communications change over time. Our interviews provided a very static view of the students' technology use. I suggest doing studies over a period of years, observing how these changes happen in real time. Having students reflect on them was useful in the context of adoption but lacked the detail that they recalled from their high school and college experiences. Capturing these experiences when they occur would be invaluable.

Using technology, students seek a delicate balance between physical and virtual presence to maintain their relationships as they see fit. The next time you make that call, think about what motivated you to use the phone in that moment, with that person, wherever you are, to carry out the conversation you're about to begin. When it happens, you'll understand the importance how you choose technologies to manage relationships in your life.