The benefits of both undergraduate research and study abroad are well-established (Brew, 2013; Dwyer & Peters, 2004; Johnson, Behling, Miller, & Vandermaas-Peeler, 2015; Martin, Katz-Buonincontro, & Livert, 2015). Linking them together provides an opportunity to combine two high-impact practices through course-integrated research. The first author is a faculty member who has taught study abroad courses and mentored undergraduate research in Ireland, France, Italy, and Malta. The second author is an undergraduate student who participated in the French study abroad program and research projects. Together we share our perspectives on our experiences, with the aim of encouraging the greater inclusion of undergraduate research into linguistics courses at the undergraduate and introductory levels, and the greater embedding of undergraduate research within study abroad, which has particular relevance to the social and language sciences, although they are of course relevant to many other fields.

Combining the Impacts of Undergraduate Research and Study Abroad

Engaging in mentored research as an undergraduate is an experience that can make students’ learning more active and deepen their engagement with course concepts and curricular or program goals (Brew, 2013; Johnson, Behling, Miller, & Vandermaas-Peeler, 2015). Across disciplines, research practices may look very different, and even within the same field, research paradigms often include some version of both lab-based experimentation and in-the-field data collection, such as cell cultures and ecological surveys in biology and auditory perception experiments and field documentation in linguistics. Each format offers its own opportunities and challenges to incorporate into undergraduate learning. For example, lab-based projects may require significant resources in terms of space, equipment, and staffing, but offer maximal control over the objects and methods of study, giving students the opportunity to practice important research skills in their field. Fieldwork allows for the study of a wider array of phenomena that can’t be contained in the lab, but may be more difficult to implement, especially in an undergraduate or general education setting, due to logistical or accessibility concerns. We suggest that study abroad may present a unique opportunity to incorporate field-based research into undergraduate curricula by piggybacking on existing institutional logistical infrastructure.

Our institution’s global programs have a somewhat unique structure, in which short-term study abroad experiences are embedded within semester courses, with travel taking place during university breaks (e.g., spring break and fall break). Courses are delivered in a hybrid format, with students studying course materials online in preparation for the study abroad experience, completing in-person experiences and assignments during the travel component with their instructors, and then completing additional online components after returning home.
We conceptualize both research and study abroad as continua, in which traditional study abroad programs (i.e., semester- or year-long courses abroad) and undergraduate research experiences (i.e., one-on-one mentored original research projects) are but one point along a spectrum of activities which incorporates international travel and research inquiry into the curriculum.

Although short-term study abroad experiences such as ours may not deliver all of the same benefits at the same levels as longer study abroad programs (Dwyer, 2004), we nonetheless believe that they are worthwhile because they make these benefits available to a greater number of students, many of whom may otherwise never take part in study abroad or international travel, due to issues of access and affordability. Our courses go beyond simple tourism by linking travel experiences with disciplinary course objectives and combining cultural and academic learning.

Likewise, the umbrella of undergraduate research includes a range of activities, from research-based learning to assisting with team-based or faculty-led research projects to original, student directed inquiry. In our courses, students enter with a range of preparation for research. By taking a collaborative approach, we find a way for every student to contribute to knowledge generation. Incorporating research into these introductory courses takes students one step beyond simply consuming information about the discipline and the destination, and into making their own inquiries. This kind of experience can be a bridge between classroom learning in the discipline and future, full-fledged undergraduate research inquiry by these students, with the study abroad component serving as an important catalyst which motivates and inspires students to pursue their ideas. Incorporating these research activities into our study abroad courses also increases the reach of the study abroad experience to include those students who haven’t (yet) studied abroad, because we bring home data that forms the basis for team-oriented research in the lab, or research-based learning activities in non—study abroad courses.

Learning about Culture through Study Abroad
Study abroad has a long history in foreign language learning (Freed, 1995), although the evidence is somewhat mixed as to whether study abroad experiences increase second language fluency more than other teaching methods (Dewey, 2004; Freed, Segalowitz, & Dewey, 2004). However, for linguistic attainment, there is likely a high-degree of interaction between the students and the context (Pellegrino, 1998), much as there is in cultural learning during study abroad (Martin, Katz-Buonincontro, & Livert, 2015). In addition, study abroad adds an indispensable cultural dimension to language learning. Benefits of study abroad include not only educational attainment, but also personal growth and intercultural development which have long-lasting impacts (Deardorff, 2000; Dwyer & Peters, 2004). Crucially, students who may initially be least open to experiencing new cultures may stand to gain the most from the experience (Martin et al., 2015).

Student Perspective (Sofi Teitsort): The Eye-opening Experience of Study Abroad
As a student, visiting other countries provides an opportunity to see history at every turn – history which may often be ignored at home. The experience of seeing a new place as a foreigner can cause students to see even their own country in a new light. As a student in global programs courses, I have found that navigating a country whose language you do not speak is a humbling experience and makes you grateful for every helpful stranger. Learning to communicate past language barriers by smiling and utilizing courtesy opens doors otherwise blocked to outsiders, meaning that students learned not only course concepts, but became more connected to the academic community and the wider world.

Taking Students into “the Field”
Both linguistic and cultural barriers impact researchers’ ability to collect data abroad, and this is particularly relevant to linguistics/language sciences. This challenge is also an opportunity to create
synergy between study abroad and undergraduate research, because they share the pedagogical goals of increasing active and experiential learning. Both also result in learning that is potentially more:

1. student-directed, in that the student makes more, and the instructor makes fewer of the decisions about how the course/project will proceed, relative to a classroom setting;
2. open-ended, in that many aspects of the course or project are not predetermined by the instructor;
3. indirect, in that much of what is learned may not neatly fit or even relate directly to the learning objectives for the course or the motivating questions for the research.

Linguistic research is, of course, only one way of integrating undergraduate research into study abroad. Fieldwork is important across disciplines but may not be as common at the undergraduate level within the social sciences and linguistics as in natural sciences. Fieldwork is often considered at the graduate level after students are more advanced. Notably, linguistic fieldwork is included in undergraduate curricula at some schools, but primarily for linguistics majors. This could be made more accessible to a wider array of students by introducing it into general education courses, much as how laboratory sections of science courses are offered to all students. Although integrating fieldwork at the introductory level could be an effective active-learning experience for undergraduate linguistics students, it is not without challenges for the student and instructor. The primary value in conducting field research for our students has been in giving a wider view of the research process, including a greater appreciation for the value of data and its impact.

The greatest limitation to conducting linguistic research (and likely for any social science) abroad is the language barrier. In our program, students without prior experience don’t have time to master the language of non–English-speaking destinations, either during the online pre-travel portion of the course, or once at the destination. For this reason, we adapt our research practices to match our ability to communicate with our informants. For example, in English-speaking destinations (Ireland), or in places with a high proportion of second-language English speakers (Malta), or where we have a reliable translator who sometimes may be a student, we are able to conduct more in-depth research, such as interviews. In locations where we are less fluent in communication, such as France, Italy, we instead focus our research on working with informants who we can identify and work with beforehand, or conduct research that can be done with less conversational interaction, such as visual analysis.

Faculty Perspective (Dr. Evan D. Bradley): The Value of Data and the Enterprise of Research
Having taught both lab-based and lecture-based science classes, I have noticed that there is a danger in lecture classes of students taking data for granted. Although we discuss the results of many experiments in the classroom, this does not always adequately convey the amount of work that goes into collecting data, and all the difficulties standing in the way of getting really reliable data. There is a great deal of benefit in getting students hands dirty (literally and/or figuratively) by getting a taste of the real process of human subjects research, as messy as it may be sometimes.

In linguistics, this results in a better appreciation for the work that goes into collecting the data that forms the basis for theoretical work, and an appreciation for the researchers who collect data on less-studied languages. In France and Italy, our students got their feet wet by working in an environment that, at times, approached monolingual, and where they certainly had to navigate cultural barriers. Of course, these destinations are not the most challenging in which to collect linguistic data, but appropriate for students at this level, who were just being introduced to the concept of language documentation.
Students working on these languages have encountered many of the same kinds of challenges and excitement as real working linguists:

- Students were bewildered to be surrounded by Irish language signage while having trouble finding a native or fluent speaker, much like the protagonist in a short film we had watched (O’Hara, 2003). They also encountered a tendency for some speakers to exaggerate their fluency in Irish, as we had observed in a documentary film on linguistic fieldwork (Kramer, Miller, & Newberger, 2008), but perhaps had not believed was likely).
- In a reverse case, our tour guide in Catania had undersold his fluency in Sicilian, but was later able to provide us with the translations we were seeking.
- After struggling to find speakers, our primary Nissart informant, who was excited to help us translate and record a language sample, informed us that he had become too intoxicated at the party he had organized for us and would have to email it to us later, which he never did.

Mentoring students through this research was a challenging process due to both the projects themselves and the structure of the course and study abroad process. Before departure, students read and studied examples of research on the languages in which we were interested, and which used the methods we would be employing in the field. The preparatory course assignments not only taught course concepts but also doubled as practice for the research tasks we would deploy in the field: phonetic transcription, making audio recordings for online presentations, and learning phrases in the target languages. Students received feedback from the instructor before the trip.

Once we had arrived at the destination, we managed the course of research and mentored students primarily through daily breakfast meetings at which we checked in with each other to gauge progress, share difficulties, and adjust strategies, including resolving personal conflicts or difficulties which arose.

Even in the simplest of circumstances, it is not always possible for one research mentor to provide everything that a student requires. Recent research on multi-mentoring suggests that students may be best served when multiple individuals act in mentoring roles for different purposes, including not only the named advisor or mentor, but also other students (Bradley, Bata, Fitz Gibbon, Ketcham, Pollock, & Nicholson, 2018; Nicholson et al., 2017). That arrangement is also a key to effective mentoring in our program. Before departure, students received support from global programs staff, librarians, and technical support in addition to the instructor. While traveling, students received support from the course instructor, the instructors of other courses, who were traveling with us, along with their peers and our travel guides, especially when it came to resolving challenges or difficulties.

Given all of these challenges, not every research project goes as planned, much as they do not always go smoothly even for experienced faculty researchers. Sometimes, we struggle to collect enough data, but learn a great deal in the process; sometimes we collect data that eventually form the basis for presentations and publications by students. Not every student conducts original research, but some excel and ignite the spark of research inquiry, and all contribute to a team-based undergraduate research enterprise. This enterprise extends beyond our travels, paying dividends for future students by providing data for future inquiry, both by the students who collected it, and students who will later enroll in linguistics courses at our home institution.

The Impact of Research
Another difficulty faced by scholars in all disciplines is communicating to students how their research topics, which may seem dry and esoteric from the outside, matter to the world and to their broader disciplines. We are attempting to bridge that gap in linguistics by conducting our research on
languages while experiencing the cultures in which those languages operate. The role of study abroad is to enhance the research experience by making its relevance more apparent to students, compared to what they experience at home in the lab or classroom.

One way we have accomplished this is by studying not only the dominant languages at our destinations (i.e., English, French, and Italian), but also important minority languages (e.g., Irish, Occitan, and Sicilian), each of which has its own important history and unique modern challenges. Concepts like language attrition are made more real to students by meeting and speaking to real people affected by these issues – or sometimes, struggling to find the speakers of these languages in the first place. As the instructor, I have been amazed by the enthusiasm of speakers and activists involved with these language communities when someone, let alone a foreigner, shows an interest in their language and culture, because they are often used to being somewhat ignored, at best by the majority in their own country. This also helps students notice subcultures that would otherwise be invisible, and to understand why there are sometimes gaps in our knowledge, due to shortages of data on some languages but not others.

Students have reported that what most helped them learn in their study-abroad courses was the ability to immediately apply what they had learned through the process of preparing, conducting, and analyzing research samples. One noted that their “enthusiasm for linguistics” was enhanced by “being able to apply what we learned while in Ireland,” while another emphasized that they “loved being able to learn from real life situations,” and that “taking pictures of languages that we later analyzed” was key to the benefits of the study-abroad experience. Some students were so inspired by the experience that continued working with their faculty mentor on data collected during the trip, and eventually presenting and publishing the research data.

Examples of Global Linguistics Research Experiences
Linguistics is well-suited to study abroad, since every country and region has unique languages and history. Linguistics provides programs with ways to incorporate science courses abroad and increases awareness among students who would otherwise never enroll in linguistics courses. Fieldwork teaches methods that can only be simulated at home (e.g., working in a monolingual environment – by which linguists mean working in the target language, rather than that of the researcher). By studying them in the field, potentially dry subjects like linguistic theory are made more exciting by discovering them as a sort of real-life mystery to be decoded from clues collected along the way. During our courses, students were able to see the modern traces and consequences of linguistic history, such as a stone with ogham inscriptions alongside an Irish road, or an obelisk covered in hieroglyphics in Rome. Here, we highlight successful activities emphasizing methods or content better appreciated in the field than in the classroom.

Dialectology
Language variation is one of the most compelling topics for introductory linguistics student – why do speakers of the same language speak differently in different places? Our dialectology assignments have included comparisons of home and destination, in the case of English-speaking destinations, like Ireland and Malta, and different sites within the destination country, such as the different cities
in Ireland, or the islands of Malta & Gozo. This can be accomplished through a combination of data collection and comparison to published data, as in France where we visited cities (i.e., Marseille and Nice) where the local dialect differs from published descriptions of French from Paris.

Phonetic Data Collection
A simple activity we have deployed during each course is to collect samples of languages by recording their speakers reading a short text. Often this is the North Wind and the Sun story included in the handbook of the International Phonetic Association (Decker, 1999) in many languages. The class works together to create a pool of data we can all use to conduct analyses, such as the dialect comparison discussed above.

Collecting our own data in the field creates a sense of ownership beyond canned data. Students are motivated to collect better data so that they can conduct a successful analysis. If we are investigating a minority or lesser-studied language, this can be a challenge. Even when we don’t have prospective hypotheses, data collected for these projects can be used for later analysis by future students for research projects. Students from our lab have participated in several presentations and publications resulting from such studies (e.g., Bradley et al., 2016; Bradley, Schmid, & Teitsort, 2017; Schmid, Nicosia, & Bradley, 2016).

Linguistic Landscapes
A linguistic landscape is an analysis of language that appears in the visual environment (Tufi & Blackwood, 2015). Audio data is very appealing, but transcription can be time consuming and require quite a lot of practice by students. Visual projects are also appealing because they require a lower degree of proficiency in the field than interacting with informants in real time, and they generate textual data that can be analyzed later with the help of dictionaries, grammars, and online resources. Students only need their cameras and can collect samples anywhere. Students have used these projects to examine the language of advertising in different countries, explore the way that minority or foreign languages are represented (or not) in public spaces, and compare official language policies to the real situation on the ground.

Institutional Framework
Our institution’s study abroad courses have a unique structure. The courses take place during the standard semester. Students complete coursework online throughout the term, but the travel for the program happens for only one week during fall or spring break. This structure could be viewed as a disadvantage (Dwyer, 2004), such that shorter travel means less time for engagement at the destination. Although semester-long program durations have distinct advantages, there are many other important factors in determining what students learn on study abroad (Vande Berg, Connor-Linton, & Paige, 2009). Thus, we maintain that our program has several advantages for the population of students who we serve, some of which are similar to those identified by Lewis and Niesenbaum (2005).

1. The cost is typically lower than a full-semester program, making it more accessible to a greater number of students who would otherwise not study abroad at all.
2. Students’ other courses for the semester are unaffected, allowing them to continue to make normal progress toward their degree with little disruption or advance planning.
3. Because the non-travel portion of the course is delivered online, students from any campus of the university system can participate.
4. From an institutional perspective, the university does not have to develop infrastructure or partner with foreign institutions to deliver a full semester of course material in another country.
In addition to these factors, the most distinct advantage to this structure for undergraduate research may be that it mimics, in miniature, a field researcher's work that includes 1) pre-travel preparation, in which the destination is studied and goals are defined, 2) an intensive period of data collection in the field, in which challenges are encountered and adjustments are made, and 3) a post-travel period of analysis, in which the data collected and the challenges faced are digested. Of course, these phases could be a part of any study abroad experience, but in this case, they are all brought within the purview of the course instructor and the potential research mentor for the semester. Of course, this is not at all on the same scale as a professional scholar or a graduate student who engages in high-level research in the field after years of advanced study. However, we argue that beginning this process in the undergraduate or the introductory years is worthwhile, because it makes this experience available to more students, some of whom may become more likely to pursue further study in this or other areas, and enables them to be more prepared to do so. Even for those who would not, it is still valuable to instill appreciation for the research enterprise, and to break down artificial barriers between those students who are researchers and those who are merely consumers of research.

**Pre-Travel**
During the pre-travel portion of the course, students learn general materials on the subject of study -- in this case, linguistic theory and concepts, as well as the tools and methods used by researchers in the discipline. Here, there is a balance to be struck between general course objectives (i.e., things that every student should know about the subject) and the particular content which is most relevant to the destination.

In most general education or survey courses, there is more material than can be covered in a single semester. Therefore, in these courses, I tip the scale slightly further in favor of quality over quantity by focusing on the particularities of languages and cultures of the destination that make it an interesting place to visit. Rather than a survey of all possible languages and linguistic issues, I focus on going a little more in-depth on those that tie into the course, because I can illustrate the general concepts of phonology and syntax with references to Celtic languages as easily as I can with Romance languages.

**Travel**
During the study abroad experience, our focus changes from reading and studying about our subject to interacting with it directly. There is a danger in all fields, particularly the sciences, for the consumers of knowledge, who are often but not always the students, to view research data as a resource to be mined, with little appreciation of the effort researchers put into collecting it. One of my goals as an instructor is to use research as a pedagogical tool, even in introductory classes, in order to prevent students from taking research for granted, and to prompt them to think like a member of the discipline.

In lab-based sciences, this is often accomplished through lab exercises or demonstrations in which students collect their own data. Linguistics students can do this, too, but often do not appreciate the real challenges of fieldwork in their familiar home environment, where they speak the language and interact naturally within their own culture.

Both the audio and photo projects we have completed by documenting the language(s) we encounter on the trip provide students with data they can take home, a sort of academic souvenir which can help make their experiences more concrete. This even pays dividends for future students and for students who don’t have the opportunity to study abroad, because we can archive this material for future use after we return.
Post-Travel
For many students (and sometimes their professors), the study abroad experience can be a bit of a blur, especially during a short-term program. A benefit of embedding the travel experience within the semester course is that the post-travel period provides an opportunity for students to further process the excitement, challenges, and learning experienced abroad.

Academically, this means processing the experiences and data they collected and relating it back to the course concepts introduced before traveling. For students in our courses, this also means sharing their work at local and professional conferences, as well as archiving data and creating reports which can serve future students. This could include students in future study abroad courses, who can use these data as an example and practice for their own research experiences, or students in traditional, non-travel courses, who can have the benefit of working with a large collection of data from various languages and places.

Opportunities and Challenges
Student Perspective (Sofi Teitsort): Challenges and Growth
As a student, studying abroad for the first time was an incredibly valuable part of my undergraduate experience, both academically and personally. I found the integration of research into my first study abroad experience helped me focus and crystallize what otherwise might have been an overwhelming experience. It helped me make sure that I was experiencing not only the numerous intangible benefits of traveling in a new country, but that I was also attuned to experiences related to my chosen course of study, linguistics.

I had worked on laboratory-based psycholinguistic research as an undergraduate already. But doing research in this setting was another learning experience. Once I actually began conducting research, I experienced first-hand the personal and technological challenges associated with conducting rigorous research. In France, we gained a new dimension to our learning when our improperly patched microphones recorded more fuzz than voices, when weather interfered with our plan, and when participants did not understand directions no matter how clearly we tried to explain them.

The ability to exercise our creativity to make decisions about the projects and coursework made the work not only more enjoyable, but also memorable. In Marseille, the students gathered to plan our own route to several museums and places of note. We found ourselves having more fun than on any of our guided tours. We decided in Nice to wander with no destination in hopes of finding friendly people to participate in our linguistic experiment. Engaging with people, despite the difficulties, was one of the more fun times we had while traveling. Having the freedom to explore Marseille and Nice on our own, we learned quickly to not be daunted by any obstacle, like trying to get directions from strangers. Rather, we became impervious to failure. Ordering the wrong dishes, taking the wrong turn, walking into the wrong building, we began to shrug off failure in pursuit of our goals.

Faculty Perspective (Dr. Evan D. Bradley): Managing Learning and Inquiry
As the instructor, my biggest challenge in managing research during study abroad courses was the amount of distance mentoring involved (Stephenson, 1997; Wilbanks, 2014). As a professor, I had already developed some skills in online teaching, but encountered a new challenge in conveying not
just course concepts, but research skills in this unique format. These were especially hard to demonstrate and give feedback on in an asynchronous online format. This led to a lot of learning on the fly once we actually arrived at the destination. All research mentoring involves a process of “letting go” and allowing students to try out new skills, fail, and persevere. But this was happening on an accelerated schedule, and led to numerous frustrations and low quality on the first few attempts of tries. However, the growth process also seemed to be accelerated, because we needed to collect our data before the end of the trip.

For these reasons, I have actually moved from higher tech to lower tech over the course of several courses. During the first course, I traveled with several tablets preloaded with specialized software for students to use to present stimuli and record audio. This meant that there were a learning curve, technology glitches, and worries about losing or breaking equipment. In our most recent course, I brought only small lightweight microphones which students could use with their cell phones and put more stimulus material on paper. Given that students often have networks of mentorship that extend beyond their instructors or assigned research supervisors (Bradley et al., 2017), I have also enlisted and promoted resources to assist students in their preparation, especially from library and technology services.

Summary
Undergraduate research is an important approach to teaching skills and methods of inquiry in many disciplines. Study abroad exposes students to additional perspectives and modes of learning that they might not otherwise experience in their typical learning environment. Combining the two, although logistically daunting, has the potential to maximize the objectives and strength of both through the guided inquiry into novel environments and subjects. In linguistics, this results in the examination of a wider range of languages and allows for more in depth case studies. Further, it helps students observe and perhaps participate in the interaction between language and culture. By taking advantage of the travel opportunity to go beyond simply observing or passively experiencing the destination, we instead explore actively by developing research questions, investigating them in collaboration with faculty mentors and other students, and reflecting on the experience in terms of course objectives, and disciplinary skills, and global engagement.

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