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Editorial

Dear Readers,

The latest issue of the LIFE newsletter begins with an interesting article by Zurich alumnus Jan Höltge at the University of Hawai'i at Mānoa, Honolulu. He reports on the essence of resilience from a Hawaiian perspective. Because of the beauty of his surroundings, we took the opportunity to use photos of Hawai'i to illustrate this issue. They were were all taken by Karoline und Jan Höltge.

The second contribution comes from UVA alumna Laura Getz, now at the University of San Diego. She provides an overview of her exciting work on audiovisual integration and top-down influences on perception, following up on her dissertation research.

UM faculty Laura Zahodne then answers our 10 questions and provides information about her neuropsychological research on cognitive aging that also takes account of psychosocial and socioeconomic factors.

We have more new faculty and fellows at all LIFE sites to introduce than ever. Welcome to LIFE to you all!

The publication list, which focuses on the fellows' output, is diverse as usual and shows the breadth of topics being worked on in LIFE. In the news section reports on what members of the LIFE community are up to.

Finally, special thanks are due to all our contributors!

Julia Delius

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Reminder

Fellows, alumni, and faculty, please keep us informed about your LIFE-relevant news (e.g., awards, career moves)! Fellows and alumni, please check that your web profiles are up-to-date—they are often the first thing that pops up when your name is googled! Send your updates to delius@mpib-berlin.mpg.de

LIFE Website: https://www.imprs-life.mpg.de

Mastodon: @imprs_life@social.mpdl.mpg.de

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The Essence of Resilience: ’A’ohe hana nui ke alu ’ia*

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Aloha e LIFE community**,

Don’t we all enjoy stories of people who seem to be able to deal with any challenge on their own? Aren’t they the perfect role models to keep yourself motivated in your daily life? These people have beaten the odds just by having a dream, optimism, mindfulness, grit, courage, and perseverance, not to mention trait resilience. Even though they grew up in poverty, had criminal parents, experienced conflict, were stigmatized, or experienced all kinds of abuse, they still became successful, well-known, and rich. What we can learn from them is that all you need to thrive despite your adverse experiences or deal with your daily challenges is a strong will. Next time you go to a book store, take a look at the literature on resilience. Listen to some motivational speeches by prominent figures that are available online. It is obvious: You can do it! Your mindset, attitudes, motivation, traits, personality, etc. is all you need, it is so simple. So, why isn’t everybody resilient when it is clear that anything that lies beyond the individual is just secondary if it is needed at all? Are the people who are not resilient weak personalities? According to these motivational speakers and the literature, it is your own fault if you are not resilient.

For example, a recently published book by an eminent resilience scholar focuses on the flexibility mindset that encompasses optimism, seeing adversity as an opportunity for positive change, and self-efficacy (Bonanno, 2021). Being flexible means that you try out something to change your adverse situation, you evaluate it, and if it doesn’t work, you try out something else until you find the approach that changes your situation for good. Sounds doable, right? But, how can flexibility be of any use if there is nothing to choose from? Maybe there is nothing meaningful in an impoverished, war-torn context that can help you, or your cultural group is stigmatized so that the system won’t make any meaningful resources available and accessible to you. So, you need to turn to dysfunctional ways of surviving and resilience such as drug abuse, being a member in a violent gang, stealing, or depression—also signs of flexibility. For example, women in certain communities in Nigeria are at risk of being raped the second they leave their house, so in order to be protected, they join the same violent gangs whose members would have raped them. From the perspective of social-ecological, multisystemic resilience researchers and practitioners, putting the affected individuals first in line when it comes to resilience is victim-blaming. Yes, personal agency is a contributing factor to resilience, but it is by far not the whole story.

Surfing in Hawai’i

Living in Hawai’i brings two examples related to surfing to my mind that can give you an insight into how we need to change our thinking about human resilience. But before that, I want to mention that one of the very first key scientific studies on resilience took place here in Hawai’i, on the island of Kaua’i, with about 700 impoverished children (Werner & Smith, 2001). This started in 1955! And guess what the most decisive factor between resilience and maladaptation for these children was? No, not the individual, but a single caring, emotionally stable, competent adult who was often not even their parent (see also National Scientific Council on the Developing Child, 2015)! Thus, it is surprising that the predominant focus has been and still is on the individual in resilience science and practice. Well, it is mostly being conducted in Western contexts, so, it is not very surprising after all(!).

Duke Paoa Kahanamoku (*1890–†1968), a Native Hawaiian, the ambassador of Aloha, shattered world-records in swimming during a time when Indigenous people were still treated as third-class citizens who could not be better than Whites. He was a Waterman, a person who is an expert in any water sport. It was he who made surfing a sport

* No task is too big when done together by all (Hawaiian proverb #142).

** I want to thank Julia Delius for giving me the space and joy to share some of my knowledge about resilience with you.

Figure 1. Memorial to Duke Paoa Kahanamoku.

known worldwide, which is remarkable because the colonizers tried to ban surfing. Duke had one problem. He was the best at swimming in the ocean, by far. It was in the ocean that he first beat world records that had been set in pools. However, to go to the Olympics in 1912, he had to swim in pools, where he lost his advantage. A swim coach from the mainland, who was not Hawaiian but White (unusual at that time) showed him how to swim in pools with Duke's technique and that finally gave him what he needed to become the best swimmer of his times, for years in a row. And it should not be forgotten that Duke couldn't afford to go to the Olympics. His Hawaiian community, even the poorest families, donated funds to make their joint dream come true.

Jon Kabat-Zinn, a world-renowned expert on mindfulness-based stress reduction, said the following: "You can't stop the waves, but you can learn to surf." Which basically means that if you cannot stop the roots of your stress, you can learn how to handle it. All you need is more mindfulness in your life. If you just say this to people, what does this sound like? It is all on you, the individual. But what do you need to learn surfing, to stay in the metaphor? Well, a board. Where does that come from? Do you know how to build one? Do you have the funds to buy one? Then, you could try surfing on your own and might manage, maybe you're a natural. However, most likely, having a teacher or at least other people to watch would be advantageous and would help you progress toward being able to surf, classical social learning theory. And if you're a greenhorn, a lifeguard is essential. There are more nuances to that scenario, but I think you get the picture. Way more is necessary to deal with adversity and being resilient than your willpower and mindfulness.

Resilience: An outcome and a process

The main question we ask in resilience research is: Why do people who had the same adverse experience or live in the same stressful environment show different trajectories in their development and well-being? When we hear terms such as trauma, adversity, risk, etc., we naturally tend to think about the negative consequences. As resilience researchers, we focus on the positive developmental trajectories in adverse contexts. And we rather talk about challenges than adversity because it includes the opportunity for positive development. Before we get an insight into the often overlooked and unspoken factors and processes that contribute to this positive development, let's talk about what resilience means and how it is being used in science and the public. Broadly, the term resilience is regarded as an outcome and as a process.

The outcome definition of resilience is the more widespread use of the term. It relates to the statement that "you are resilient" because, even though you had an acute adverse experience such as having lost a significant other, or you live in a chronic high-risk context like homelessness, you are beating the odds, you show an unexpectedly high level of well-being, functioning, thriving etc., you are developing positively, you have bounced back (Höltge & Ungar, 2022). In research, standardized, negative indicators of well-being such as depression, post-traumatic stress disorder, and grief are traditionally used to indicate resilience as an outcome. However, according to Bonanno (2021) resilience might not be as unexpected as one might think. He and other researchers have shown

in numerous longitudinal studies on events such as natural disasters, military deployment, 9/11, or accidents, that about 60% of the studied samples show a stable trajectory with a low level of pathology over time, which is known as the resilience trajectory (Galatzer-Levy et al., 2018). If you add the about 10–20% of individuals who show a recovery trajectory over time, then you are left with about 20–30% for the commonly observed negative developmental trajectories of chronically high or increasing pathology. However, these numbers are not universal (Theron et al., 2023)!

As a process, resilience is being used to talk about how to show a positive development within an adverse context, focusing on the protective and promotive factors and processes that make you resilient (Ungar, 2019). Here are some examples for the vast majority of items from traditional measures of resilience as a process: "I am able to adapt to change," "I tend to bounce back quickly after hard times," "I am able to depend on myself more than anyone else," and "I enjoy dealing with new and unusual situations" (for an overview of scales see Windle et al., 2011). Thus, resilience as a process refers to the things that we use to explain resilience as an outcome.

Even though the majority of research has been done on the psychological promotive and protective factors and processes of resilience for decades, and social support is gaining more attention, science is still not able to sufficiently predict resilience based on this mainly single-system approach (Bonanno, 2021). Resilience is a science of change and adaptation, so it should also change and adapt itself, too. We need to stop defining resilience as a predominantly subjective, internal psychological construct that functions independently of its environment across adverse contexts.

Multisystemic resilience: A science of complexity, context, and relationality

Today, scientists are beginning to include a more complex, multisystemic perspective into their definition of resilience (Ungar & Theron, 2020). Multisystemic resilience is based on a social-ecological understanding (Fig. 2). The individual is embedded in interacting systems that are found in its environment; thus, the environment crucially impacts your psychological assets. Is optimism easy in an environment that does not provide any reasons to be optimistic? The systems of the environment can provide meaningful resources such as social

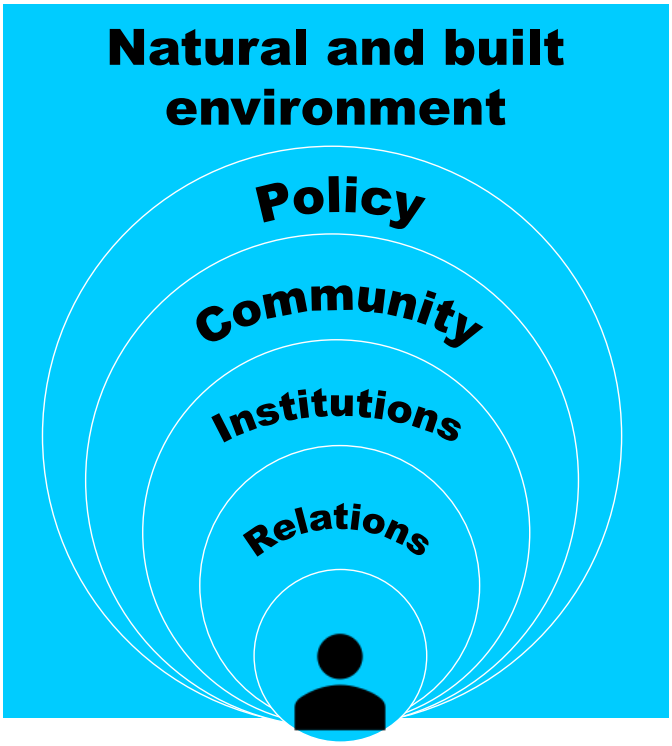

Figure 2. Social-ecological model of resilience. The individual with its biological, psychological, and spiritual characteristics is embedded in multiple social-ecological systems. Relations: social relations such as family, friends, peers, colleagues, etc. Institutions: educational, health care, social service, work place, religious, etc. Community: culture- and place-based norms, values, traditions, etc. Policy: national and international laws and regulations. Natural and built environment: the physical space, climate, air quality, etc.

support from family and friends, cultural traditions and practices, healthcare and social services, infrastructure, natural environment, safety, money, leisure activities, etc. Thus, the study of multisystemic resilience makes us see beyond a single dimension of a person's life to improve our explanations of resilience. With that social-ecological understanding, resilience comes down to two central processes: navigation and negotiation (Ungar & Theron, 2020). Navigation means that whoever is in need has to go out and find resources. However, if the environment does not provide resources, then there is nothing to choose from. So, it is first up to the environment to give opportunities. And in situations where people cannot take care of themselves, such as in major depressive disorder, it is up to the environment to take action. Negotiation means that the resources cannot be provided to people in need in any way, but that they must be provided in contextually and culturally meaningful ways. There is no room for one-fits-all approaches and generalizations, which brings the next layer of complexity.

Multisystemic resilience stresses that resilience is not a trait that makes anyone resilient in any context, as it has been predominantly researched in the past. You might be a soldier who underwent resilience training that prepared you for war and thus you have an about 60–80% likelihood to show resilience after your deployment (Bonanno, 2021). However, that does not necessarily guarantee that you show resilience when your family and you become poor and homeless. Thus, the type and severity of risk makes a difference, and the norms and values of your culture influence which resources are acceptable and meaningful to you. Living as an Indigenous person in a colonized place where the norms and values of the colonizers structure everyday life and your cultural practices are forbidden or forgotten, you will rather survive than be resilient. And finally, context not only shapes the necessary resources, but also the outcomes that indicate resilience. Native Hawaiians have never talked about depression with me. For them, a resilient person is someone who can give Aloha no matter what the stressful circumstances: a person who places the needs of others above their own, who cares for others; and fights for the survival and revival of their culture.

Two further crucial aspects of multisystemic resilience are relationality and interdependence (Höltge et al., 2020), core concepts of systems theory. As an initially Western trained researcher, I was used to look for independent effects and linearity. Risk is usually the cause, and depression is the outcome, the end. In between are resources that function as explanatory variables for why the same adversity leads to different developmental trajectories of the outcome. Traditionally, we are interested in the resources with the strongest independent effects on the risk-outcome relationship. This approach has its meaning, especially in practice, due to the limited funding that is often available when carrying out resilience interventions. Nevertheless, systems theory complements this approach by respecting (1) the relationships, i.e., interdependency, between resources within and across resource systems, and (2) circularity instead of linearity. Focusing on relationships means that we are interested in how the entire system works as a whole, and which resources have leverage, i.e., which resources can lead to cascade effects or chain reactions within the multisystemic resource network. Intervening on leverage resources leads to positive effects on other resources throughout the network, which finally makes more meaningful resources available and accessible. This is a different approach compared to focusing on a few effective resources that might not be able to explain resilience again and might not bring lasting change. And circularity makes us aware that whatever we treat as the outcome can always be the beginning of another risk, resource, or outcome. We think in loops, and these loops tell a story that explains why a system has a certain outcome.

Finally, multisystemic resilience makes us aware of an aspect that we recently experienced during the COVID-19 pandemic: the resilience of one system, such as the person, depends on the resilience of other systems, such as healthcare, and vice versa. Now, we are not only interested in how well the individual or a community is doing within a risky context, but the more resources are needed from another system, then this other system gets stressed, too, and needs to be resilient. During the COVID-19 pandemic, healthcare systems across the globe needed to be resilient in order to serve the high demand for people's medical support. The resilience of the healthcare systems was dependent on e.g., the ability of the research system to adapt to what needed to be investigated, and on a political system that made the support of healthcare and research a priority. International logistics were negatively affected, and certain goods that are essential for everyone's daily living were no longer available in grocery stores. Resilience is not a single-system issue anymore, but the larger and more severe the adversity, the more systems are affected, which are all interdependent in their resilience.

So, the next time you tell people at risk to be strong and to believe in themselves, to be optimistic and breath three times, have a look at their environment and see how it affects their resilience and how you can use it to their advantage, or bring needed change. And the next time you think about the roots of your own resilience, appreciate not only your internal resources such as your physical body, biology, psychology, and spirituality. Appreciate that (hopefully) your basic needs such as food, a safe home and community, a job, people who care about you, stability/routine, and transportation are met. That you have access to activities that fill your cup with joy and love. And that in times of need, you live in an environment with services that are accessible and meaningful to you. And if not, do something about it together

with your community as long as you are in a position to do so. Opportunities must still be created so that they will exist when they are needed. Resilience is also about personal, community, and political agency. Native Hawaiians know all about it.

A glimpse at the resilience of Native Hawaiians

For Native Hawaiians, and Indigenous people at large, there is no such thing as Post-Colonialism. Ever since the first contact with Europeans, colonization has never ended for them. Historical and transgenerational trauma are common terms in this context and indicate the long-term negative effects of the colonization of past Native Hawaiian generations on contemporary generations. Very briefly, the main injustices that happened to the Native Hawaiians during their past colonization were a population decline from between 800.000–1.000.000 to 45.000, they were forbidden to speak their Native language, dance hula, and perform any Native spiritual and other traditional practices. One of the most severe adversities that happened to them was the Great Mahele: the privatization of land. One must know that the Native Hawaiians had no concept of ownership, especially in relation to natural spaces. They see themselves as caretakers of the 'aina (= that which feeds), because they know that without healthy nature, they cannot be healthy. Nobody can own natural space. And even today, you find this perspective in them. This was, and still is, so difficult because their identity is bound to place, but they were, and still are, forced to leave. Back then, this was due to the power of the colonizers, and today, because of the high costs of property and living. Also, the Native Hawaiian culture at large was one of sharing, caring, and love, but they fought, too. The colonizers brought competition, capitalism, and anxiety.

How would you feel if you were told that you are a savage, worthless, dumb? And when you go to school, all you read in your history book is that your culture was, and is, weak, and you can consider yourself lucky that the colonizers brought civilization! What's more, the colonizers installed the rule that if you are not at least 50% Native, you do not have access to land that was reserved only for Native Hawaiians during the Great Mahele. In a melting pot such as Hawai'i, it is just a matter of time until nobody has these 50% anymore. What this has created are people who are ashamed of who they are, internalized racism and oppression, and a dispute about who is a true Native Hawaiian and who is not within the Native Hawaiian community. Identity was and still is a core issue of Native Hawaiians due to this history.

My research team and I talked story (a culturally appropriate way of doing interviews) with Native Hawaiian adults about their perception of how the past and ongoing colonization negatively affect their lives and that of Native Hawaiians at large. While research on Indigenous people is traditionally problem- and deficit-focused, and was historically biased to find proof for the self-appointed superiority of the colonizers, we used a strength-based approach to show their culture's beauty and to figure out what makes them resilient in this context.

Here are some of the key resource systems that came up in almost every talk story session: a family-community system, selflessness and care of others, cultural revival and renormalization, a strength-based perspective on history, and becoming aware of your roots. The first cultural experience I had when I immersed myself into the local culture was that all keiki (Hawaiian for children) call any adult aunty or uncle, and that adults say brother or sister to each other, even though they are not biologically related. You hug a person you've never seen before, and you exchange your breaths of life by putting your foreheads and noses together (the honi). And this relates to a family-community system. The word that is used in this context is hānai, which can be translated as foster, such as in foster family. This basically means that everyone knows and trusts each other, and cares for each other. The Hawaiians were not used to our modern Western nuclear families, the whole community was the family. A child did not only have its own parents, but a whole cohort of parents. This means that you've got plenty of resources just because of this community system. And why do they value this system so much? Because they have always known that the well-being of others influences their own well-being, and vice versa. They see themselves and all others as part of a system, and not as an independent individual. Hence, being selfless and having joy and fulfillment in taking care of others and the land (kokua and mālama in Hawaiian) is natural and contributes to their well-being. From a Western perspective, you would say that this is their central meaning in life, they call it kuleana: it is their responsibility and privilege to be of service to others. Here you can see the sig-

nificant role that culture plays, because in a Eurocentric worldview, we are used to looking after ourselves and are not culturally expected to take care of our elders for example. We have retirement homes so that we can concentrate on our individual lives.

Cultural revival and renormalization are highly significant to Native Hawaiians, which is connected to their freedom, self-determination, social justice, and identity. This process didn't start on its own, but it was up to the Native Hawaiians to get that going. However, a surprising development has taken place over time. While past generations were ashamed of being Native Hawaiian, and several Native Hawaiians still are today, you can find a significant proportion of Native Hawaiians today who do not feel Hawaiian enough because they cannot speak the language, cannot dance hula, do not have knowledge about how to use plants for healing, etc. So much for internalized oppression. So, even though this revival and renormalization is essential for their resilience, it is also creating a risk, an example of the aforementioned circularity. The last two resources are a strength-based perspective on their history and finding your roots. Both aspects are strongly related to their identity. History books must talk about how Native Hawaiians managed to still be here today, and the things that they made happen so that they can practice their culture again. Finding your roots means that you look back at your ancestors, who they were, what they did, and where they lived, that is, the genealogy and lineage of your family. Traditionally, Native Hawaiians, as do many other Indigenous people, live based on a seven-generations principle: They look back at what their past generations did so that they have the privilege to be here today with today's opportunities. They want to live a life that makes their ancestors proud and values what they have accomplished. This also applies to the future: they want to make the world a better place for the next seven generations.

Figure 3. The Polynesian Cultural Center is a tourist attraction and living museum located in Laie, on the northern shore of O'ahu, Hawai'i. It encompasses eight osimulated tropical villages, in which performers demonstrate various arts and crafts from throughout Polynesia.

Native Hawaiians are well aware that their resilience does not depend on any single resource system. Reflecting on these factors, resilience for them is not so much about optimism, grit, mindfulness, etc. The focus is not so much on the individual. To be fair, they talked about self-care and having a safe space for being and healing. However, that was in the context of filling up your cup so that you have the energy to care for your people, who can then care for you, a focus on interdependence. All these resources are not universally supportive. Native Hawaiians are faced with a specific mixture of risks, they have a contextualized risk profile, and this requires contextualized promotive and protective factors and processes.

Conclusion

The essence of resilience is not a particular one-fits-all resource or trait that makes anyone resilient in any adverse context. Resilience will always be context-specific and dependent on a diverse set of resources. It is what LIFE, and the scientific community at large is about: we all have our expertise, and only when we come together in our diversity and see the whole picture can we be of meaningful service to people and communities in dire need. We must create an environment where people can be resilient and thrive. The essence of resilience respects interdependency and interconnectedness of everything that constitutes resilience, which requires collaboration across disciplines. So, let's cherish our diversity and make the world a better place, together.

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Interactions Are Essential: Audiovisual Integration and Top-Down Influences on Perception

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After completing my PhD at the University of Virginia in 2016, I completed a postdoctoral fellowship at Villanova University, and since 2019, I have been in a tenure-track position in the Department of Psychological Sciences at the University of San Diego (USD). My research takes an interdisciplinary approach to understanding auditory perception, encompassing music, speech, and cross-modal perception using a combination of behavioral, cognitive neuroscience, and computational modeling approaches. My USD research program in the Language and Music Perception (LAMP) lab (https://www.lamplab.org/research) aims to show the importance of interactions in perception, including the interaction between levels of processing and across sensory modalities. This work speaks to a broad set of issues within psychological science: To what extent are cognitive processes encapsulated from one another? How is perception influenced by individual and cross-cultural differences, previous knowledge, expertise, and task demands?

Although broader context and top-down influences have been a part of LIFE faculty and students' research for some time, such interactions have largely been ignored in cognitive psychology research more broadly (e.g., see fellow LIFE alum Steve Robert's awesome investigation: Roberts et al., 2020). However, debates around the degree to which top-down effects from higher-level processes directly influence perceptual processing are currently driving the field and have implications for understanding how humans hear and how we interpret sensory information. Below I provide an overview of my research in the domains of cross-modal, speech, and music perception.

Cross-modal perception

One type of interaction that is important to understanding auditory perception is interactions between different sensory modalities; for example, how vision can influence the sounds you hear (see Spence, 2022, for recent review). My dissertation research at UVA aimed to quantify the degree of automaticity vs. top-down influence present in the audiovisual correspondences (AVCs) between auditory pitch and visual dimensions of size, angularity, brightness, spatial frequency, and height. Using the pitch-size correspondence as an example, past research has frequently used a speeded classification procedure in which participants are asked to rapidly classify the size of an image that is accompanied by a congruent (i.e., high) or an incongruent (i.e., low) sound (e.g., Evans & Treisman, 2010; Gallace & Spence, 2006). Because classification is typically faster in the presence of a congruent stimulus, researchers have inferred that the correspondence is automatic (and therefore bottom-up). However, a congruency advantage alone is inadequate to imply a purely bottom-up effect because it fails to also show that AVCs are immune to top-down influences. To remedy this problem, we devised a new procedure to assess the degree of "bottom-up-ness" and "top-down-ness" in a series of behavioral experiments. Participants sometimes had to respond to the consensus mapping (e.g., a high pitch paired with a small shape), and other times had to pair the dimensions in the opposite direction (e.g., a high pitch paired with a large shape). The results (Fig. 1) point to the fact that AVCs differ in the strength of their bottom-up associations and how much they are influenced by top-down effects (Getz & Kubovy, 2018). This fills an important gap in the literature that has focused on a dichotomous view of automaticity rather than focusing on the extent to which various automaticity criteria are met.

In more recent work at USD (Getz, 2023), I have proposed a new method of investigating correspondence strength; namely, competition between correspondences. Most research on AVCs has happened one pair at a time using simple tasks (Parise, 2016). However, this is counter to how perception happens in everyday life, where

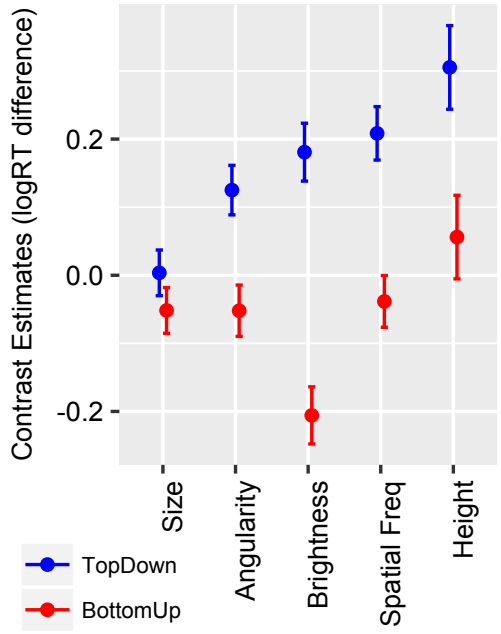

Figure 1. Top-down estimates are in the positive range, with those closer to zero or negative showing more contribution of task instructions, meaning size has the strongest top-down influence. Bottom-up estimates are in the negative range, with those closer to zero or positive showing greater correspondence automaticity, meaning height has the strongest bottom-up association.

dimensions typically appear "as part of a much more complex and dynamically changing multisensory perceptual environment" (Klapetek et al., 2012, p. 1156). My goal was therefore to investigate what happens when the congruency of multiple correspondences is manipulated at once. For each correspondence pairing, there were five different congruency conditions: (a) congruent, where both visual dimensions were congruent with pitch (e.g., high pitch paired with a small circle high on the screen and low pitch paired with a large circle low on the screen); (b) incongruent, where both visual dimensions were incongruent with pitch (e.g., high pitch paired with a large circle low on the screen and low pitch paired with a small circle high on the screen); (c) height-congruent, where height and pitch were congruent and the other visual dimension and pitch were incongruent (e.g., high pitch paired with a large circle high on the screen and low pitch paired with a small circle low on the screen); (d) visual dimension-congruent, where the other visual dimension and pitch were congruent and height and pitch were incongruent (e.g., high pitch paired with a small circle low on the screen and low pitch paired with a large circle high on the screen); and (e) unimodal, where pitches were presented with no accompanying shapes. Participants were faster to respond when pitch was congruent with height (and incongruent with size, sharpness, spatial frequency, or brightness) and slower to respond when pitch was congruent with size, sharpness, spatial frequency, or brightness (and incongruent with height). Additionally, the height-congruent condition was usually just as fast as when both dimensions were congruent, and the height-incongruent condition was just as slow as the both-incongruent condition.

Together these results reinforce the superiority of the pitch-height correspondence over other pitch-visual dimension correspondences. Although not the case in all languages (Eitan & Timmers, 2010), the metaphor we use for pitch in English incorporates the same words "high" and "low" to describe visual elevations and auditory pitch height. Thus, the pitch-height congruency effect shows the importance of semantic or linguistic factors in understanding this audiovisual correspondence, which is in line with an abundance of previous research (Fernandez-Prieto et al. 2017; Gallace & Spence, 2006; Melara & Marks, 1990). A current collaboration investigating the pitch-size and pitch-height correspondences in four-month-old infants will help to illuminate early interactions between levels of processing in the perception of AVCs (Hannon & Getz, 2023).

Speech perception

Audiovisual interactions in speech. Understanding how information from the auditory and visual modalities interacts at a basic level is interesting, but thinking of ecological applications in terms of how humans develop the ability to integrate audio and visual information in the perception of speech sounds is also essential. During my postdoc at Villanova and continuing at USD, I have examined individual differences in susceptibility to the McGurk effect (an audiovisual integration task where the auditory and visual cues provide conflicting information as to the identity of speech sounds). In the original McGurk and McDonald (1976) experiment, 98% of participants reported an illusory 'fusion' percept of /da/ when listening to the spoken syllable /ba/ and watching the visual speech movements for /ga/; however, more recent work has found a lower proportion of fusion responses (Basu Mallick et al., 2015). In our work, we set out to investigate how participant and task differences affected the rate of fusion responses by varying task (forced-

choice vs. open-ended), stimuli (synthetic vs. naturally-produced), and collection location (lab vs. MTurk) in our experiments (Getz & Toscano, 2021). We found a low proportion of fusion responses across all conditions, but higher rates for forced-choice compared to open-ended experiments. We also found a higher incidence of fusion responses in older participants (e.g., more fusion responses from MTurk participants [M ≈ 37 years] than lab participants [M ≈ 20 years]). Thus, rather than a robust perceptual illusion, we argue that the McGurk effect is a product of individual differences and top-down task demands, showing the importance of interactions between levels of processing and across modalities to spoken word recognition. Currently in my lab, we are using EEG and event-related potential (ERP) analysis to better understand the time-course of the effect to determine whether the locus is an early perceptual illusion or a later decision-level process.

Top-down effects in speech. A foundational issue in psycholinguistics is the extent to which top-down information from lexical representations can impact early speech perception, again highlighting the importance of interactions between levels of processing to understand auditory perception. During my postdoc, we developed a novel paradigm using ERPs to understand speech sound encoding as it unfolds over time; cognitive neuroscience measures such as ERPs allow us to distinguish perception from later-occurring processes. Specifically, the auditory N100 ERP component has been shown to be an index of acoustic cue encoding and attention.

In our experiments, we investigated whether N100 responses were influenced by top-down lexical effects (Getz & Toscano, 2019). Participants saw visual primes that either formed a clear association with the target ("MARCHING band"), led to no specific association ("BUTTER bomb"), or consisted of a non-word mask. Auditory targets were stop consonants varying in voice onset time (VOT), an acoustic cue signaling the difference between voiced (e.g., /b/) and voiceless (/p/) sounds. Stimuli included short (/b,d,g/), ambiguous, and long (/p,t,k/) VOT values. Behaviorally, participants were faster to respond to the starting sound of the target in the Association prime condition than the Neutral prime and Mask conditions. In subjects' brain responses, we found the expected bottom-up effect of the stimulus VOT (larger N100s for shorter VOTs; Toscano et al., 2010). Additionally, in our first experiment, we found that Association primes produced smaller N100s overall (Fig. 2a), suggesting that semantically predictive contexts cause listeners to attend less to subsequent targets. In our second experiment, ambiguous VOTs were encoded similarly to the voicing endpoint elicited by the prime in the Association condition (Fig. 2b), thus providing the first ERP evidence that top-down lexical information directly influences early perceptual responses through lexical-prelexical interactions. Currently, students in my lab are expanding on this paradigm to investigate the relative importance of multiple top-down factors (e.g., lexical status, word frequency, neighborhood density, and semantic priming) on speech perception.

Music perception

Although most of my recent work has been related to speech perception, my interest in combining music and psychology has been around since I was a double major in Music Performance and Psychology as an undergrad at Elizabethtown

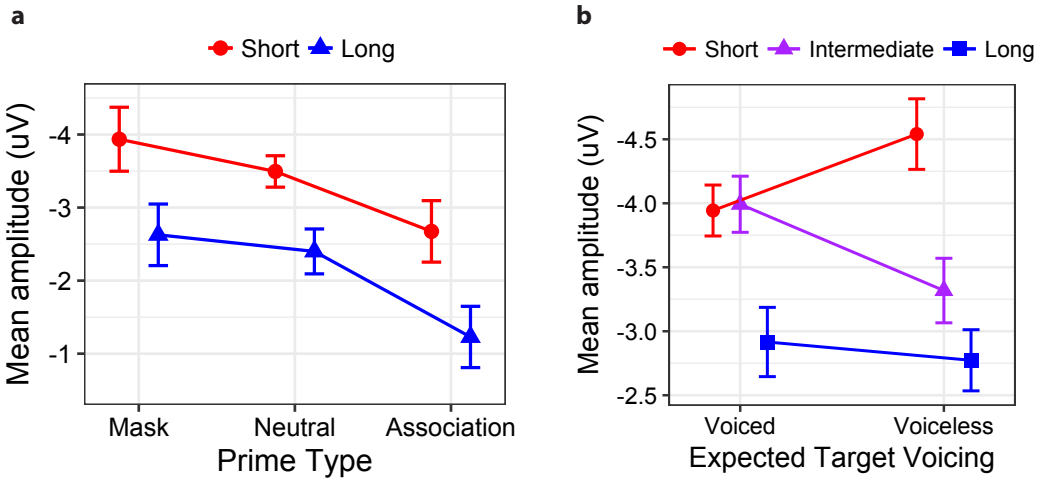

Figure 2. (a) N100 amplitudes were smaller overall following semantic primes in Experiment 1. (b) N100 amplitudes for the intermediate VOTs match the endpoint elicited by the association prime in Expt 2; it is similar to the short VOT for voiced targets and similar to long VOTs for voiceless targets, showing a top-down effect of semantic priming on early perceptual encoding.

College, and I have continued to find creative ways to combine the two fields.

For example, another more ecological way to investigate audiovisual interactions and the influence of prior knowledge on perception is to look at how musical features are used in advertising and product perceptions. Music has been used in advertising since the early days of movies, television, and radio; this commercial use of music in marketing amounts to billions of dollars each year (Allan, 2007). A quick search of Google shows a plethora of popular press articles about how to use music successfully in marketing campaigns, and empirical research also suggests that specific genres and music features may be linked to consumer preferences and spending (for early reviews, see Bruner, 1990, and Huron, 1989; for a more recent review, see Shevy & Hung, 2013).

In our set of studies, we set out to uncover how background music (high vs. low pitch, fast vs. slow tempo, and brass vs. woodwind timbre) during radio advertisements can influence participants' perception of product features (Tran & Getz, 2023). We chose several commonly advertised products and created multiple versions of the music background for each advertisement: we manipulated pitch in an advertisement for a sandwich, we manipulated tempo in an advertisement for sneakers, and we changed the timbre in an advertisement for a laptop. We found associations between musical tempo and perceived sneaker speed and musical timbre and perceived laptop durability, but no associations between musical pitch and perceived sandwich size. However, we only found these tempo and timbre associations with the products when we explicitly drew participants' attention to the music being played with the advertisement, which points to the conclusion that associations between musical features and product features may require top-down attention rather than being automatic associations. However, it is also possible that future research using more implicit testing measures such as reaction times, eye-tracking, or EEG/ERP would be more sensitive to product effects than the explicit survey measures employed (c.f. Müllensiefen, 2021), which would help to sort out the relative contributions of perceptual and top-down effects.

Summary

My research shows that top-down effects are prevalent in auditory and audiovisual perception. By studying perceptual organization from multiple perspectives and with multiple techniques, my work has revealed the need for a flexible and interactive definition of perception driven by interactions between bottom-up and top-down processing both within and across modalities. My work informs longstanding and current debates in cognitive science regarding the interaction between perception and higher-level cognitive processes and has implications for understanding how we interact with the world around us. My interdisciplinary interests were fueled in part by my time as a LIFE fellow, and I would encourage current LIFE fellows to take advantage of all of the collaboration opportunities available with other LIFE fellows and faculty!

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Impressions of USD campus

Photographs on this and the next page taken by Laura Getz

10 Questions

Laura Zahodne, Associate Professor of Psychology at the University of Michigan

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How did you get involved in neuropsychology?

When I was an undergraduate at the University of Michigan, I was lucky enough to take an *Introduction to Human Neuropsychology* class with Patricia Reuter-Lorenz. I was most interested in brain-behavior relationships in neurodegenerative diseases like Alzheimer's disease (AD) and Parkinson's disease, and the field of clinical neuropsychology was an ideal way for me to pursue patient-focused neuroscientific research.

Could you name books or articles that have profoundly influenced your own thinking about the field?

While my research started out very patient-focused, it has since expanded into public health and health justice. An interdisciplinary review on social conditions and racial and ethnic patterns of cognitive aging co-authored by my postdoctoral mentor Jennifer Manly has been particularly influential (Glymour & Manly, 2008).

Which do you consider the main current debate within the field?

Connected controversies in the field of AD relate to the amyloid hypothesis and the biological definition of AD. The amyloid hypothesis positions aggregations of the beta-amyloid protein as the upstream causal factor leading to tau accumulation, neurodegeneration, and clinical declines in AD. However, amyloid seems neither necessary nor sufficient to cause the clinical symptoms of dementia, and it is not yet clear whether amyloid is a true biological mechanism or merely a predictive biomarker. Much of the supporting evidence for the amyloid hypothesis has come from highly selected samples (e.g., non-Hispanic White individuals free from vascular disease), and correlations between amyloid and cognition differ across sociodemographic factors like age and race/ethnicity. Clinical trial failures and controversies around the efficacy of anti-amyloid drugs add to the debate. Despite these uncertainties, some researchers have advocated for revising diagnostic criteria for AD to focus on biomarkers rooted in the amyloid hypothesis, rather than clinical (i.e., cognitive and functional) criteria (Jack et al., 2018). While a focus on a limited set of physiological processes could simplify AD research, it could also redefine the primary endpoints of clinical trials, paving the way for expensive and/or risky treatments that do not ultimately benefit cognition, function, or public health (Glymour et al., 2018).

What research topics have been neglected or have not received enough attention so far?

In the field of clinical neuropsychology, one of the most pressing areas in need of progress is cultural neuropsychology, which explores the influence of cultural, educational, and linguistic factors on neuropsychological test performance (Manly, 2008). Better tests and norms are critical to meeting the clinical needs of the global population at risk of brain injury and disease, and a comprehensive research agenda is needed to develop them.

One of your foci is on the role of socioeconomic and psychosocial factors in cognitive aging. Can you tell us more about this?

I have been motivated by two major problems in the field of AD: a lack of effective treatments and stark racial/ethnic disparities, so I focus on socioeconomic and psychosocial factors in order to identify modifiable targets to (1) prevent AD and (2) reduce AD inequalities. Indeed, studies calculating population attributable fractions for dementia show that a much larger proportion of prevalent dementia cases can be attributed to modifiable factors like education than to genetic factors like APOE-e4 (Livingston et al., 2017), particularly for Black and Hispanic older adults. I want to pinpoint specific psychosocial factors that have the highest potential to influence AD risk, and I use mediation and decomposition analyses to quantify the relative contributions of risk versus protective factors to racial/ethnic differences in cognitive aging outcomes.

How can your research be applied to everyday life?

I hope my research on dementia prevention could motivate policies, interventions, and lifestyle changes to reduce dementia risk and move toward health equity.

What are you currently working on?

We are currently expanding the Michigan Cognitive Aging Project, which has been following a racially balanced sample of Black and White adults transitioning to late life since 2017 (Zahodne, 2021). In addition to initiating our third wave of data collection, we are incorporating administrative data on neighborhood factors to build more comprehensive bioecological models of dementia risk.

In Summer 2023, my colleagues Kristine Ajrouch, Toni Antonucci, and I are launching the Detroit-area Aging and Memory Project, which will recruit a new cohort of Middle Eastern/North African (MENA) adults age 65+. This study will be among the first to estimate dementia prevalence in a community that has been largely invisible in aging research (Ajrouch, Zahodne & Antonucci, 2018).

What do you get out of LIFE as a faculty member?

Interdisciplinarity has become increasingly important to my research program, and LIFE can facilitate cross-disciplinary contact and communication. Mentoring is also a critical part of my academic identity, and LIFE provides opportunities for me to interact with more students in a variety of settings.

What is the added value of LIFE's internationality?

LIFE's internationality can enable cross-national collaborations that provide opportunities to more systematically study macro-level influences on health, including culture and policy.

Has the COVID pandemic changed the way you work?

The necessary shift to remote cognitive testing during the pandemic presented challenges and opportunities for our ongoing cohort studies. In the Michigan Cognitive Aging Project, we are now randomizing participants to in person versus remote follow-up. This randomization will allow us to statistically separate mode effects from age-related change in our longitudinal models, and it will also allow us to rigorously test hypotheses about mode-related differences in performance on various neuropsychological tests. Our preliminary data indicate that some of our tests are easier in person, while some are easier over the phone. This type of "planned missingness" design also comes with some cost savings, allowing us to expand our scope in other ways.

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New LIFE Faculty in Berlin and Charlottesville

Teague Henry is an Assistant Professor with joint appointments in the Department of Psychology and School of Data Science at UVA, where his work focuses on improving existing models and building new ones for application in clinical psychopathology and clinical neuroimaging. His research primarily focuses on network representations of high dimensional systems, with specific application to neurodevelopmental disorders and how they unfold over the lifespan.

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Key publications

Henry, T. R., Fogleman, N., & Cohen, J. R. (2022). Functional network controllability in children with ADHD after methylphenidate administration. *Translational Psychiatry, 12,* Article 518. https://doi.org/10.1038/s41398-022-02283-4

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Jennifer MacCormack is an Assistant Professor of Social Psychology and Principal Investigator of the Virginia Affect and Interoception Laboratory in the Department of Psychology at UVA. Broadly, her research investigates how healthy vs. diseased physiological and neural functions shape both interoception (perceptions of internal bodily changes) and social affective functioning across the lifespan. She first became interested in lifespan development during her BA in Psychology from North Carolina State University, working on emotion socialization in middle childhood. Next, she completed a PhD in Social Psychology and Neuroscience at the University of North Carolina at Chapel Hill, with a secondary concentration in Quantitative Psychology. During this time, she began studying the physiological and neural underpinnings of late life emotional aging. This work was supported by a predoctoral NRSA fellowship from the National Institute on Aging. After her PhD, Jennifer completed a postdoctoral fellowship in Cardiovascular Behavioral Medicine at the University of Pittsburgh's Department of Psychiatry, with support from the National Heart, Lung, and Blood Institute. There, she studied the role of inflammation and cardiovascular health in midlife and late-life brain and cognitive aging. As a new assistant professor and principal investigator, Jennifer is building on this prior work to advance research on the roles of the brain-body and interoception in socioemotional and cognitive functioning across the lifespan. For example, in early and middle childhood samples, her lab is studying how interoceptive development can help bridge cognitive and socioemotional development. In midlife and older adult samples, her lab is studying how physiological aging (e.g., cardiovascular system, inflammation, aging of brain structures) and cognitive aging are related to shifts in interoceptive processing, and what these interoceptive shifts mean for late life emotion, wellbeing, and social behaviors. To address these questions, her lab draws on a rich toolkit of methods from affective science, interoceptive science, experimental social and health psychology, lifespan development, psychophysiology, social affective and visceral neuroscience, psychoneuroimmunology, and psychopharmacology. For more information, see: https://www.virginiaaffectlab.com.

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Key publications

MacCormack, J. K., Bonar, A. S., Feldman, M. J., & Lindquist, K. A. (in press). Aging bodies, brains, and emotions: The physiological hypothesis of emotional aging. In R. E. Kleck, R. B. Adams, Jr., & U. Hess (Eds.), *Emotion communication by the aging face and body: A multidisciplinary view.* Cambridge University Press.

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Channing Mathews is an Assistant Professor Community Area of Psychology at UVA. She completed her graduate work in 2020 at the UM in the Combined Program of Education and Psychology (CPEP). Her research considers how youth of color draw upon their ethnic-racial identity (i.e., the process and meaning associated with the role of ethnicity and race in one's life) and critical consciousness (i.e., one's awareness of social inequality and the tools, beliefs, and actions used to challenge such inequality) development as motivators for their STEM-based academic engagement and activism. Her work focuses on these processes during adolescence and emerging adulthood, drawing from theoretical and methodological approaches in education, psychology, and African American studies. Channing's scholarship has three central foci: (1) integrating ethnic-racial identity and critical consciousness factors as dual promoters of positive Black and Latinx adolescent and emerging adult development, (2) examining how both ethnic-racial identity and critical consciousness promote STEM orientation, and (3) assessing the complexity of ethnic-racial identity and critical action behaviors (including STEM-based activism) in both Black and Latinx adolescence and adulthood.

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Key publications

Mathews, C. Durkee, M., & Hope, E. (2022). Critical action and ethnic-racial identity: Tools of racial resistance at the college transition. *Journal of Research on Adolescence, 32*(3), 1083-1097. https://doi.org/10.1111/jora.12790

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Paul Perrin is a Professor of Data Science and Psychology at UVA. He believes that disparities in the context of disability and health are one of the most shocking and inhumane forms of oppression and that the academic and medical communities have a central role to play in their alleviation. A combination of data science, modern analytic techniques, and community-based participatory research approaches are key tools for identifying the sources of—and potential solutions to—these disparities. With this aim, his research area of "social justice in disability and health" encompasses three facets: (a) cultural, familial, and international approaches to disability rehabilitation and adjustment, particularly in medically underserved and minority populations with neurological conditions; (b) social determinants of health (e.g., stigma, access to integrated care and telehealth, personal and collective strengths); and (c) social justice approaches to understand and dismantle oppression. Paul serves as Co-Director of the Polytrauma Rehabilitation Center Traumatic Brain Injury Model Systems Program at the Central Virginia Veterans Affairs Health Care System and is an incoming editor of the journal Rehabilitation Psychology. He is passionate about mentoring students in data science, psychology, and allied fields to become agents of social change in their personal and professional lives with an emphasis on disability and health. He teaches courses in multivariate statistics, research methodology, health disparities, health psychology, multicultural psychology, and community intervention. Paul spent ten years as a

student at the University of Florida, earning a PhD in Counseling Psychology, an MS in Psychology, a BS in Psychology, and a BA in English Literature. He completed a trauma-focused clinical internship at the Maryland Veterans Affairs Health Care System and the University of Maryland School of Medicine. Paul completed a postdoctoral fellowship at Virginia Commonwealth University in Clinical Supervision and spent 11 years there as a faculty member before coming to UVA.

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Key publications

Perrin, P. B., Rodriguez, Y., Olivera, S. L., Quijano, M. C., Trujillo, M. A., Smith, E. R., Cariello, A. N., & Arango-Lasprilla, J. C. (2023). Multi-site, multi-country randomized clinical trial of an acute traumatic brain injury caregiver transition assistance program in Latin America. *NeuroRehabilitation, 52,* 137–147. https://doi.org/10.3233/NRE-220121

Perrin, P. B., Ramos-Usuga, D., West, S. J., Merced, K., Klyce, D. W., Lequerica, A., Olabarrieta-Landa, L., Alzueta, E., Baker, F. C., Lacovides, S., Cortes, M., & Arango-Lasprilla, J. C. (2022). Network analysis of neurobehavioral symptom patterns in an international sample of Spanish-speakers with a history of COVID-19 and controls. *International Journal of Environmental Research and Public Health, 20,* Article 183. https://doi.org/10.3390/ijerph20010183

Perrin, P. B., Klyce, D. W., Fisher, L. B., Juengst, S. B., Hammond, F. M., Gary, K. W., Niemeier, J. P., Bergquist, T. F., Bombardier, C. H., Rabinowitz, A. R., Zafonte, R. D., & Wagner, A. K. (2022). Relations among suicidal ideation, depressive symptoms, and functional independence during the 10 years after traumatic brain injury: A Model Systems study. *Archives of Physical Medicine and Rehabilitation, 103,* 69–75. https://doi.org/10.1016/j.apmr.2021.07.790

Stephanie Rowley was appointed Dean of the School of Education and Human Development at UVA on July 1, 2022. Prior to joining UVA, Stephanie served as Provost, Dean, and Vice President for Academic Affairs of Teachers College, Columbia University. She also served in several key leadership positions at UM, including Associate Chair and Interim Chair of the Psychology Department, Chair of the Combined Program of Education and Psychology, and Associate Vice President for Research for Social Science, Arts, and Humanities. In these roles, she was successful in advancing research and teaching support for faculty, advancing interdisciplinary collaboration, and strengthening graduate student life and development.

Stephanie earned her BA (1992) from UM, and her PhD (1997) in Developmental Psychology from UVA. She began her career as a faculty member at the University of North Carolina in 1997, and in 2000 she joined UM's Department of Psychology. Nationally, she currently serves on the Governing Council for the Society for Research and Child Development. She has won numerous awards for her research, teaching, service, and mentorship. Among her most valued awards have been those received for her outstanding mentoring of students. In her research, she focuses on the influence of race- and gender-related attitudes and beliefs on the development of children's academic self-concept with a strong emphasis on parents' roles in the development of these attitudes. Her most recent project is an NSF-funded longitudinal study of African American parents' beliefs about Science, Technology, Engineering, and Math (STEM) and the relation of those beliefs to the socialization of their middle school youth. Stephanie also served as one of six principal investigators at Michigan's Center for the Study of Black Youth in Context, a research center dedicated to the study of Black youth, training of doctoral and postdoctoral students and community outreach.

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Key publications

Adams, E. A., Kurtz-Costes, B., Hoffman, A. J., Volpe, V. V., & Rowley, S. J. (2020). Longitudinal relations between skin tone and self-esteem in African American girls. *Developmental Psychology, 56*(12), 2322–2330. https://doi.org/10.1037/dev0001123

Kurtz-Costes, B., Hudgens, T. M., Skinner, O. D., Adams, E. A., & Rowley, S. J. (2019). Parents' racial beliefs and ethnic-racial socialization in African American families. *Merrill-Palmer Quarterly, 65*(1), 54–80. https://doi.org/10.13110/merrpalmquar1982.65.1.0054

Rowley, S. J., & Camacho, T. C. (2015). Increasing diversity in cognitive developmental research: Issues and solutions. Journal of Cognition and Development, 16(5), 683–692. https://doi.org/10.1080/15248372.2014.976224

Jack Van Horn is a Professor of Psychology and Data Science at UVA. He has held prior faculty positions at the Dartmouth College, University of California Los Angeles (UCLA), and the University of Southern California. He conducted his postdoctoral training in the area of human brain imaging using PET, functional, and structural MRI at the National Institute of Mental Health in Bethesda, Maryland. His doctoral studies were performed on the subjects of phenotypic expressions of brain abnormalities using neuroimaging and bio behavioral metrics in the Department of Psychology at the University of London in England. He also holds a master's degree in engineering and computer science from the University of Maryland, College Park. He was the operations director for the fMRI Data Center, as well as a high-performance neuroimaging, computational, analysis and visualization facility based at Dartmouth College. At UCLA from 2007 to 2013, he was faculty in the Department of Neurology and served on the executive committee for the Staglin Center for Cognitive Neuroscience imaging center. At UVA, he leads a research team focused on neuroimaging data analytics specifically focused on Autism Spectrum Disorder, traumatic brain injury, Parkinson's Disease, and Alzheimer's Disease. He has written >250 peer-reviewed publications, chapters, etc., and has an h-index >60, he is a university-level educator, and known internationally as an expert in neuroinformatics and data sharing. Data science involving high-performance computation for the neurosciences is a critical element in all of his work. He directs an R25 specifically tasked with promoting biomedical data science training resources and activities and is deeply committed to open and FAIR scientific practices.

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Key publications

Irimia, A., & Van Horn, J. D. (2021). Mapping the rest of the human connectome: Atlasing the spinal cord and peripheral nervous system. *NeuroImage, 225,* Article 117478. https://doi.org/10.1016/j.neuroimage.2020.117478

Van Horn, J. D. (2021). Bridging the brain and data sciences. *Big Data, 9*(3), 153–187. https://doi.org/10.1089/big.2020.0065

Van Horn, J. D., Bhattrai, A., & Irimia, A. (2017). Multimodal imaging of neurometabolic pathology due to traumatic brain injury. *Trends in Neurosciences, 40*(1), 39–59. https://doi.org/10.1016/j.tins.2016.10.007

Dirk Wulff is a Senior Research Scientist at MPIB, where he leads the Search and Learning research area within the Center for Adaptive Rationality. He also is a Senior Adjunct Researcher at the Center for Cognitive and Decision Science at the University of Basel. Dirk's work is concerned with the cognitive underpinnings of real-world behavior, focusing on the interaction between search, learning, mental representations, and the information environment. He studies aging to understand how continued exposure to the information environment across the lifespan shapes individuals' semantic representations and how this, in turn, can help with building better models of cognitive aging. Dirk recruits a pluralistic methodological approach, including behavioral experiments, computational modeling, network analysis, natural language processing, and machine learning.

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Key publications

Wulff, D. U., De Deyne, S., Aeschbach, S., & Mata, R. (2022). Using network science to understand the aging lexicon: Linking individuals' experience, semantic networks, and cognitive performance. *Topics in Cognitive Science, 14*(1), 93–110. https://doi.org/10.1111/tops.12586

Wulff, D. U., Hills, T. T., & Mata, R. (2022). Structural differences in the semantic networks of younger and older adults. *Scientific Reports, 12*(1), Article 21459. https://doi.org/10.1038/s41598-022-11698-4

Wulff, D. U., De Deyne, S., Jones, M. N., & Mata, R. (2019). New perspectives on the aging lexicon. *Trends in Cognitive Sciences, 23*(8), 686–698. https://doi.org/10.1016/j.tics.2019.05.003

New LIFE Fellows in Ann Arbor, Berlin, and Zurich

Savannah Adams. I am a PhD candidate in Social Psychology at the University of Michigan working with Josh Ackerman and Amie Gordon. My interests primarily concern moral topics such as how people weigh moral information when making decisions about who to build social relationships with. I am also interested in how this changes based on various contextual factors such as the type of relationship one is looking to build and one's own personal values. Additionally, I am involved in work applying the lens of evolutionary and relational models of morality to contexts such as relationship compatibility and infectious disease concealment. Through participation in the LIFE program I am hoping to gain the skills and insight necessary to see how these models may also be applied to other contexts across the lifespan.

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Hannes Diemerling. I am a doctoral student at the Center for Lifespan Psychology at the MPIB in Berlin and at the University of the Bundeswehr in Munich under the supervision of Timo von Oertzen. My research interests are quantitative psychology and emotion research, including the use of machine learning in the context of psychological questions. At the end of 2020, I received my bachelor's degree in psychology from the University of the Bundeswehr in Munich. In my bachelor's thesis, I dealt with the creation and evaluation of emotion films with children aged 8 to 11 years. In late 2021, I received my master's degree in psychology, also from the University of the Bundeswehr in Munich. My master's thesis was about the creation of an automatic emotion recognition system called AFFECT.

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Sarah Grünthal. I am a doctoral student in Educational Science at the University of Potsdam. Since April 2022, I have been working as a teaching and research assistant at Martin Brunner's chair for Quantitive Methods in Educational Science and started work on my PhD under his and Hanna Dumont's supervision. My doctoral research focuses on the question of the origins of educational inequalities. In my dissertation I am currently examining the relation between students' socioeconomic status (SES) and their academic motivation meta-analytically using Integrative Data Analysis. I also plan to investigate the stability of SES effects on students' academic motivation over the course of educational trajectories and the extent to which their SES equally affects high-achieving and low-achieving students. The results of these analyses will provide important insights and may point to specific mechanisms by which social inequalities are related to inequalities in students' academic motivation. While working as an educator from 2013 to 2016, I realized that I wanted to change and develop professionally. With the goal of working in social sciences in the future, I began my bachelor's degree in Educational Science and Sociology at the University of Potsdam in 2016. I completed my master's degree in Educational Science at the University of Potsdam in 2022.

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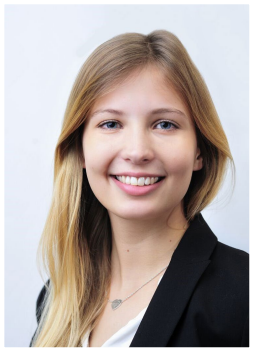

Svenja Hascher. I am a doctoral fellow at Humboldt-Universität zu Berlin under the supervision of LIFE alumna Camilla Rjosk and Petra Stanat. My academic journey began at Universität Passau, where I pursued a degree in primary school education. This field continues to captivate me to this day, as I experience and research the foundational impact of primary school on a child's educational career. My research journey commenced with my master's thesis, which provided a comprehensive theoretical analysis of the teaching profession and its societal prestige. After gaining (international) practical experience in various schools, I decided to continue my scientific career

by pursuing a PhD in Educational Science. My dissertation deals with one of the fundamental realities of primary schools: the heterogeneity of the student body. Using data from large-scale assessments, I want to depict the influence that this classroom heterogeneity (e.g., achievement, ethnic and socio-economic heterogeneity, but also a concept of multidimensional heterogeneity) has on students' performance and psychosocial development. Given my background in teaching, I am particularly interested in how teachers and ways of instruction can influence these effects of heterogeneity.

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Miriam Löffler. I am a PhD student at the chair of Developmental Psychology: Infancy and Childhood and the Jacobs Center for Productive Youth Development at the University of Zurich. I received my master's degree at the University of Vienna in Austria and wrote my thesis about the development of children's prosocial behaviour and the significance of mother-child interactions with a particular focus on the children's helping behaviour towards mothers and strangers. In my dissertation, I will investigate the influence of maturation and experience by studying the consequences of premature birth and the resulting extended exposition with respect to a broad range of developing skills. Furthermore, I will examine the social-emotional development of children born preterm, determining potential risk and protective factors. For this purpose, I will be using the kleineWeltentdecker app, which is developed by researchers from the Department of Developmental Psychology at the University of Zurich. By using the kleineWeltentdecker app, caregivers can document the development of their children in a diary. The kleineWeltentdecker app allows us to measure development in children longitudinally and continuously to capture the dynamic of developmental change over time and age.

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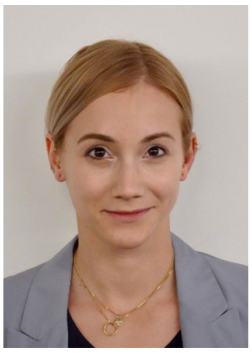
Michelle Loher. I am a PhD student at the Risk & Resilience research laboratory at the Jacobs Center for Productive Youth Development (Supervisor: Lilly Shanahan). My research focuses on developmental aspects of substance use, especially the non-medical use of prescription drugs among adolescents and young adults. My work is funded by a four-year Swiss National Science Doc. CH grant (similar to an NIH F31 award), which will also allow me to spend one year at the Institute for Social Research at the University of Michigan in 2024/25.



I obtained my first bachelor's degree in Nursing at the Zurich University of Applied Sciences. Subsequently I completed a second bachelor's degree and then a master's degree in Psychology at UZH.During my studies I worked as a nurse in a home for elderly people and tutored undergraduate students in an interactive proseminar, which teaches skills for obtaining a psychology degree and career entry. In my master's thesis, I examined longitudinal associations between cannabis use and violence from adolescence to early adulthood in the "Zurich Project on the Social Development from Childhood to Adulthood (z-proso)." After obtaining my MSc I worked as a research assistant for 1.5 years at the Jacobs Center for Productive Youth Development, including with the Zurich Youth Surveys.

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Francesca Mele. I am a PhD candidate in Sociology and a doctoral research associate in the Education and Human Development research group of the Jacobs Center for Productive Youth Development, led by Kaspar Burger. My dissertation project seeks to understand how psychological characteristics (e.g., effort, aspirations, self-direction), family and school characteristics, and the societal and institutional context interplay in shaping individual trajectories at different life stages, educational, and life outcomes. To this aim, I apply longitudinal research methods drawing on different cohort studies, such as COCON (Switzerland), and the Youth Development Study (St. Paul, Minnesota, US). I received my bachelor's and master's degrees in Political and Social Sciences from the University of Bologna. I worked

as a predoctoral researcher at the Cattaneo Research Institute in Bologna, where I was involved in a research project on educational inequality in secondary school and adult education. Before joining the Jacobs Center, I completed a Master of Research in Education at the University of Cambridge, where I examined micro and macro aspects of social inequality in adolescents' occupational expectations across 54 countries. Broadly, my main areas of interest include life-course sociology, lifespan developmental psychology, educational inequality, early stages of individual development, and quantitative methods.

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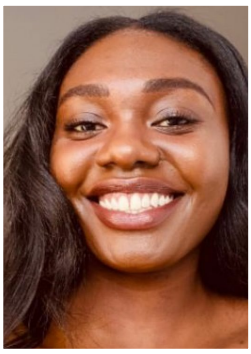

Jahla Osborne. I am a PhD candidate working with John Jonides and Priti Shah in the Department of Psychology at the University of Michigan. My current research centers around Attention-Deficit/Hyperactivity Disorder (ADHD). The purpose of my research is to help better understand how ADHD presents itself to further aid children, adolescents, and adults, with ADHD to experience improved cognitive, academic, and functional outcomes. Currently, my research focuses on understanding if individuals with ADHD are equally susceptible to different forms of distraction (e.g., external distraction, mind-wandering, intrusive thinking) or if they are especially vulnerable to one type of distraction. Additionally, I have a second line of research that stems from my OB/GYN research prior to graduate school. I have continued this work in collaboration with Beth Bailey where we examine how prenatal experiences (e.g., in-utero tobacco or marijuana exposure) impact perinatal birth outcomes and cognitive development. My research interests also include: executive functioning, neuroimaging, and cognitive training. I would love to eventually combine these two lines of research by longitudinally examining the relationship between prenatal experiences and later onset ADHD. I completed my Bachelor of Science in Psychology at the University of Denver in 2018, where I also competed as a Division I Student-Athlete on the Women's Basketball team.

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Shreya Rajagopal. I am a doctoral candidate in the Cognition and Cognitive Neuroscience Area at the University of Michigan, working with Thad Polk. In my primary line of research, I am using a combination of computational modeling and behavioral experiments to explore mechanisms of fear acquisition and extinction in humans. Specifically, I'm interested in understanding how physical contexts and the length of time post-fear extinction impact fear recovery. In my second line of research, I am working on leveraging large open datasets to identify individual-specific, longitudinal MRI-based biomarkers that predict progression to Dementia of the Alzheimer's Type early on, in the Mild Cognitive Impairment stage. Along this direction, I am interested in exploring statistical methods that can leverage longitudinal data and allow for incorporating intraindividual differences.

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Kevin Schönholzer. I am a doctoral research associate at the Jacobs Center for Productive Youth Development, working on a Swiss National Science Foundation project as part of my dissertation: "Understanding Social Gradients in Education." I obtained my master's degree in Political Science and Economic History from the University of Zurich and my bachelor's degree in Political Sciences from the University of Toronto. My research interests include socioeconomic stratification, government policy, beliefs, and statistical modeling using large-scale cross-sectional and longitudinal data. I look forward to learning and collaborating in the multidisciplinary and international environment that is the LIFE program.

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Sandro Stutz. I was born in 1989 as the son of a metalworker and a dentistry assistant. After I had fought my way up through almost all levels of the Swiss school system, I followed in my father's footsteps for a few years by working as a metal construction draftsman. However, the

inhuman mentality of the construction industry never really appealed to me, which is why I was soon looking for a field of work that placed more importance on people and their well-being. Studying psychology increasingly crystallized as my next great endeavor. With my technical baccalaureate, however, I would only have been admitted to study at a technical university of applied sciences, so I first had to catch up on the general adult baccalaureate. After this, the time had finally come: The following years were all about psychology and I have never regretted the decision. In order to keep my head above water, I also did various side jobs: I was a tutor, a lifeguard, a festival helper, and most of all a security guard, where I could find a little niche because of my people-friendly nature: For in all these years, there has never been a situation that I have not been able to de-escalate. But the highlight of my career so far is definitely my position as a PhD student at the Chair for Developmental Psychology: Infancy and Childhood. I'm looking forward to gaining lots of new experience as part of the LIFE team and making my contribution to this great network.

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Beatrice Tărăpoancă. I am a doctoral student at the University of Zurich, working in the Life Management Lab under the guidance of Alexandra M. Freund (chair "Developmental Psychology: Adulthood"). My research interests are at the intersection of developmental, motivational, and health psychology, including goal pursuit, self-regulation, cognition, exhaustion, and recovery. For my bachelor's thesis, I investigated the role of people's reflexivity regarding their future career–life–personal projects in the context of vocational decisions. I received my master's degree in psychological interventions in human development from Babeş-Bolyai University (Romania, 2021), where I investigated the role of social capital in the relationship between COVID-19 stress and adolescents' mental health. Afterwards, I received my certification in Cognitive Behavioral Psychotherapy, as well as teaching. My doctoral project revolves around exhaustion and recovery processes. I focus on the effects of different beliefs about exhaustion on the experience of exhaustion and the choice to stop engaging in an activity.

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Jasmin Weber. I am a doctoral student at the University of Zurich, supervised by Alexandra M. Freund (chair: "Developmental Psychology: Adulthood"). I am affiliated with the University Research Priority Program "Dynamics of Healthy Aging" at the University of Zurich. Before joining Alexandra Freund's lab, I studied Psychology at the Universities of Salzburg, Hong Kong, New South Wales, and Bonn. In my bachelor's thesis, I investigated emotional responses to criticism in intragroup and intergroup contexts. My master's thesis dealt with the perception of prosocial behavior. More specifically, I examined how helping and morally courageous acts and actors are evaluated by third parties. My dissertation project also focuses on prosocial behavior. I aim to study how prosocial behavior and the underlying motivations change across adulthood. In addition, I am interested in other aspects of prosocial and moral behavior, emotions, judgment and decision making, group processes, and open science.

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LIFE-Related Publications

These include all recent articles reported by *LIFE fellows* as well as selected work by *LIFE alumni*. See also https://www.imprs-life.mpg.de/publications. If your work is missing, please let us know!

Beltzer, M. L., **Daniel, K. E.**, Daros, A. R., & **Teachman, B. A.** (2023). Examining social reinforcement learning in social anxiety. *Journal of Behavior Therapy and Experimental Psychiatry*. Advance online publication. https://doi.org/10.1016/j.jbtep.2022.101810

Bierbauer, W., **Bermudez, T.**, Bernardo, A., Fleisch-Silvestri, R., Hermann, M., Schmid, J. P., Kowatsch, T., & **Scholz, U.** (2023). Implementation of a novel medication regimen following cardiac rehabilitation: An application of the health action process approach. *International Journal of Behavioral Medicine, 30*(1), 30–37. https://doi.org/10.1007/s12529-022-10067-9

Bramley, N. R., **Jones, A.**, Gureckis, T. M., & **Ruggeri, A.** (2022). Children's failure to control variables may reflect adaptive decision-making. *Psychonomic Bulletin & Review, 29,* 2314–2324. https://doi.org/10.3758/s13423-022-02120-1

Broeker, L., Brüning, J., **Fandakova, Y.**, **Khosravani, N.**, Kiesel, A., Kubik, V., Kübler, S., Manzey, D., Monno, I., Raab, M., & Schubert, T. (2022). Individual differences fill the uncharted intersections between cognitive structure, flexibility, and plasticity in multitasking. *Psychological Review, 129*(6), 1486–1494. https://doi.org/10.1037/rev0000376

Buchberger, E. S., Brandmaier, A. M., **Lindenberger, U.**, **Werkle-Bergner, M.**, & **Ngo, C. T.** (in press). The process structure of memory abilities in early and middle childhood [Registered report]. *Developmental Science*.

Choi, S., **Merrell, W. N.**, & Ackerman, J. M. (2022). Keep your distance: Different roles for knowledge and affect in predicting social distancing behavior. *Journal of Health Psychology, 27*(12), 2847–2859. https://doi.org/10.1177/13591053211067100

Costello, M. A., Nagel, A. G., Hunt, G. L., Rivens, A. J., Hazelwood, O. A., Pettit, C., & Allen, J. P. (2022). Facilitating connection to enhance college student well-being: Evaluation of an experiential group program. *American Journal of Community Psychology, 70*(3–4), 314–326. https://doi.org/10.1002/ajcp.12601

Driebe, J. C., Stern, J., **Penke, L.**, & **Gerlach, T. M.** (in press). Stability and change of individual differences in ideal partner preferences over 13 years. *Personality and Social Psychology Bulletin*.

Dufner, M., & Krause, S. (2023). On how to be liked in first encounters: The effects of agentic and communal behaviors on popularity and unique liking. *Psychological Science*. Advance online publication. https://doi.org/10.1177/09567976221147258

Fessler, D. M. T., **Merrell, W.**, Holbrook, C., & Ackerman, J. (2023). Beware the foe who feels no pain: Associations between relative formidability and pain sensitivity in three U.S. online studies. *Evolution and Human Behavior, 44*(1), 1–10. https://doi.org/10.1016/j.evolhumbehav.2022.11.003

Grassetti, S. N., Meehan, Z. M., Beveridge, R. M., **Teachman, B. A.**, Stanton, A. G., Cooper, P. J., & **Daniel, K. E.** (2023). Evaluating the "visit day" tool for supporting underrepresented and/or marginalized students in applying to doctoral programs. *Training & Education in Professional Psychology, 17*(1), 43–52. https://doi.org/10.1037/tep0000426

Higi, L., **Schmitt, R.**, Käser, K., Wälti, M., Grotzer, M., & Vonbach, P. (2023). Impact of a clinical decision support system on paediatric drug dose prescribing: a randomised within-subject simulation trial. *BMJ Paediatrics Open, 7*(1), Article e001726. https://doi.org/10.1136/bmjpo-2022-001726

Karlsson, A. E., & **Sander, M. C.** (2023). Altered alpha/beta desynchronization during item–context binding contributes to the associative deficit in older age. *Cerebral Cortex, 33*(6), 2455–2469. https://doi.org/10.1093/cercor/bhac219

Keller, L., Lüdtke, O., Preckel, F., & **Brunner, M.** (2023). Educational inequalities at the intersection of multiple social categories: An introduction and systematic review of the multilevel analysis of individual heterogeneity and discriminatory accuracy (MAIHDA) approach. *Educational Psychology Review, 35,* Article 31. https://doi.org/10.1007/s10648-023-09733-5

Ladis, I., **Valladares, T. L.**, Coppersmith, D. D. L., Glenn, J. J., Nobles, A. L., Barnes, L. E., & **Teachman, B. A.** (2023). Inferring sleep disturbance from text

messages of suicide attempt survivors: A pilot study. *Suicide and Life-Threatening Behavior, 53*(1), 39–53. https://doi.org/10.1111/sltb.12920

Lawes, M., Hetschko, C., Schöb, R., Stephan, G., & **Eid, M.** (2022). Unemployment and hair cortisol as a biomarker of chronic stress. *Scientific Reports, 12,* Article 21573. https://doi.org/10.1038/s41598-022-25775-1

Lawes, M., Hetschko, C., Schöb, R., Stephan, G., & **Eid, M.** (2023). The impact of unemployment on cognitive, affective and eudaimonic well-being facets: Investigating immediate effects and short-term adaptation. *Journal of Personality and Social Psychology, 124*(3), 659–681. https://doi.org/10.1037/pspp0000417

LeBoeuf, L., Goldstein-Greenwood, J., & **Lillard, A. S.** (2023). Multilevel modeling resolves ambiguities in analyses of discipline disproportionality: A demonstration comparing Title 1 Montessori and non-Montessori schools. *Journal of Research on Educational Effectiveness.* Advance online publication. https://doi.org/10.1080/19345747.2023.2186991

LeBoeuf, L., Goldstein-Greenwood, J., & **Lillard, A. S.** (2023). Rates of chronic absenteeism in Montessori and non-Montessori Title 1 schools. *Frontiers in Education, 8,* Article 1059071. https://doi.org/10.3389/feduc.2023.1059071

Liu, Y., Bagaïni, A., Son, G., Kapoor, M., & **Mata, R.** (2023). Life-course trajectories of risk-taking propensity: A coordinated analysis of longitudinal studies. *Journals of Gerontology: Series B, 78*(3), 445–455. https://doi.org/10.1093/geronb/gbac175

Luo, M., **Moulder, R. G.**, & **Röcke, C.** (2023). The short-term effects of activity engagement on working memory performance in older age. *Psychology and Aging, 38*(2), 117–131. https://doi.org/10.1037/pag0000727

Matsuzaka, S., **Jamison, L.**, Avery, L. R., Schmidt, K. M., Stanton, A. G., & Debnam, K. (2022). Gendered Racial Microaggressions Scale: Measurement invariance across sexual orientation. *Psychology of Women Quarterly, 46*(4), 518–530. https://doi.org/10.1177/03616843221118339

Mayer, Z., & **Freund, A. M.** (2022). Better off without? Benefits and costs of resolving goal conflict through goal shelving and goal disengagement. *Motivation and Emotion, 46*(6), 790-805. https://doi.org/10.1007/s11031-022-09966-x

Moersdorf, L., **Freund, A. M.**, & **Daum, M. M.** (2023). What do you focus on? An investigation of goal focus from childhood to old age. *Psychological Research.* Advance online publication. https://doi.org/10.1007/s00426-023-01804-0

Neuschwander, P., **Schmitt, R.**, **Jagoda, L.**, **Kurthen, I.**, **Giroud, N.**, & **Meyer, M.** (2023). Different neuroanatomical correlates for temporal and spectral supra-threshold auditory tasks and speech in noise recognition in older adults with hearing impairment. *European Journal of Neuroscience, 57*(6), 981–1002. https://doi.org/10.1111/ejn.15922

Orzek, J. H., Arnold, M., & **Voelkle, M. C.** (in press). Striving for sparsity: On exact and approximate solutions in regularized structural equation models. *Structural Equation Modeling.*

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LIFE News

- The Spring Academy 2023 is taking place at UM from May 18 to 20.
- The Fall Academy 2023 will be hosted by the Jacobs Center for Productive Youth Development and the Department of Psychology, UZH, from November 14 to 17.

Exchanges

- MPIB fellow *Claire Pauley* spent four weeks at *Thad Polk*'s lab, UM, in February/March.
- In July, UZH fellow *Zita Mayer* will be visiting *Manuel Voelkle* (HU Berlin) for one month. Her research stay is funded by the Jacobs Foundation.

LIFE Berlin

- *Hannes Diemerling*, *Sarah Grünthal*, and *Svenja Hascher* have joined LIFE Berlin as fellows (see pp. 23ff. for more information).
- *Dirk Wulff* has joined the LIFE faculty (see p. 22 for more information).
- MPIB fellow *Michael Geers* received a Society for Personality and Social Psychology Graduate Travel Award ($500).
- University of Potsdam fellow *Andrea Hasl* has submitted her thesis entitled "Time Matters: Adopting a Lifespan Developmental Perspective on Individual Differences in Skills, Cumulative Advantages, and the Role of Dynamic Modeling Approaches." Her defense is taking place at the end of May and she will be staying in Potsdam as a postdoc.
- MPIB fellow *Ann-Kathrin Jöchner* has successfully defended her dissertation entitled "Sleep-Associated Memory Consolidation Across Child and Adolescent Development — Different yet the Same?" at Ruhr-Universität Bochum. She is remaining at MPIB as a postdoc.
- MPIB fellow *Christoph Koch* submitted his dissertation entitled "How Aging Shapes Neural Representations of Continuous Spaces" to FU Berlin in December. He has joined *Nico Schuck*'s new group at Universität Hamburg as a postdoc in February.
- DIW fellow *Michael Kraemer* is starting a postdoc position at UZH in LIFE faculty *Wiebke Bleidorn*'s lab in July.
- MPIB faculty Simone Kühn has been awarded a 2022 European Research Council (ERC) Consolidator Grant. In her research project "BrainScape", funded with a total of about two million Euros over five years, she plans to investigate whether and how the physical environment that surrounds us every day affects our brain, our well-being, and our mental health.
- FU fellow *Mario Lawes* successfully defended his thesis entitled "How Does Unemployment Affect Well-Being and Chronic Stress? Investigating the Temporal Unfolding of the Effects and Sources of Interindividual Differences" in December. He is continuing to work with Michael Eid at FU as a postdoc.
- LIFE Speaker *Ulman Lindenberger* has been elected foreign member of the Royal Swedish Academy of Sciences in the Class for Social Sciences.
- MPIB alumna *Sarah Polk* is starting a postdoc in David Berron's Clinical Cognitive Neuroscience group at Deutsches Zentrum für Neurodegenerative Erkrankungen (DZNE) in Magdeburg, Germany, in June. Her main focus will be on using digital cognitive biomarkers to characterize and track cognition in early Alzheimer's disease.
- HU Alumna *Camilla Rjosk* is leaving the IQB to take up the position of Professor for School Development at the University of Potsdam in April. Her research focus will be the development of schools serving a heterogeneous student body.
- MPIB fellow *Sina Schwarze* is currently visiting Silvia Bunge's lab at the University of California, Berkeley for almost three weeks.
- MPIB fellow *Anna Thoma* submitted her dissertation entitled "The Development of Probability Learning and Repeated Choice Behavior in Childhood: An Ecological and Longitudinal Perspective" to HU in March and will continue to work with *Ralph Hertwig* at MPIB as a postdoc .

- Faculty *Gerd G. Wagner* has been selected as a Fellow of the American Psychological Science.
- The LIFE seminar in the summer semester will focus on fellows' project presentations, and the sessions will be chaired by LIFE alumni.

LIFE Michigan

- *Savannah Adams*, *Jahla Osborne*, and *Shreya Rajagopal* have joined LIFE UM as fellows. See pp. 23ff. for more information.
- Alumna *Maria Arredondo*, now University of Texas at Austin, was selected as an APS Rising Star.
- Fellow *Blake Ebright* was awarded the 2023 Paul R. Pintrich Fellowship.
- Fellow *Rita X. Hu* was awarded the UM Department of Psychology's Dissertation Grant, and the School of Social Work's Harold T. and Vivian B. Shapiro Prize.
- Alumnus *Alvin Thomas,* now University of Wisconsin, has been appointed to serve on the National Academies of Sciences, Engineering, and Medicine's Forum for Children's Well-Being.

LIFE Virginia

- *Teague Henry*, *Jennifer MacCormack*, *Channing Mathews*, *Paul Perrin*, *Stephanie Rowley*, and *Jack Van Horn* have joined the UVA LIFE faculty (see pp. 19ff. for more information).
- Alumna *Riana Elyse Anderson*, now UM, is currently 2022–2023 Fellow at the Center for Advanced Study in the Behavioral Sciences at Stanford University. She has received the 2023 APS Janet Taylor Spence Award.
- Fellows *Meghan Costello* and *Katie Daniel* matched at Harvard/Massachusetts General Hospital for their clinical psychology internships.
- Alumnus *Jesse Grabman* has been awarded the Dissertation Award (1st place) of the American Psychology-Law Society (AP-LS), Division 41 of the American Psychological Association (APA), for his thesis entitled „Understanding Verbal Confidence Statements."
- Fellow *Shannon Savell* has matched at University of Colorado School of Medicine for her clinical psychology internship.
- Alumna *Meltem Yucel*, now Duke University, has received a Postdoctoral Award for Professional Development from Duke University.

LIFE Zurich

- *Miriam Löffler*, *Michelle Loher*, *Francesca Mele*, *Kevin Schönholzer, Sandro Stutz*, *Beatrice Tărăpoancă,* and *Jasmin Weber* have joined LIFE Zurich as fellows (see pp. 23ff. for more information).
- Fellow *Plamina Dimanova* received a grant from the Graduate Campus (UZH) to organize a peer-mentoring group named "Brainfood" together with Réka Borbás, Nina Raduner, and Nico Ehrhardt. The group aims to promote connectedness between young investigators in the field of human neuroimaging research and to help them expand their knowledge on relevant topics. See https://www.jacobscenter.uzh.ch/en/events/ecr/brainfood.html

Frequently used acronyms in LIFE

CRTD: Center for Regenerative Therapies Dresden

DIW: Deutsches Institut für Wirtschaftsforschung [German Institute for Economic Research]

DZA: Deutsches Zentrum für Altersfragen [German Centre of Gerontology]

DZNE: Deutsches Zentrum für Neurodegenerative Erkrankungen Dresden [German Center for Neurodegenerative Diseases]

FU: Freie Universität Berlin

HU: Humboldt-Universität zu Berlin

LIFE: International Max Planck Research School on the Life Course

MPIB: Max-Planck-Institut für Bildungsforschung [Max Planck Institute for Human Development]

UM: University of Michigan

UVA: University of Virginia

UZH: University of Zurich

Happy Easter to those who celebrate!

European hare (*Lepus europaeus*) sitting in grass, Leicestershire, UK.

Source: Eco Images / Universal Images Group

LIFE Newsletter

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Aim of the newsletter
The LIFE newsletter encourages collaboration and interaction among people within the LIFE program. It provides an information platform where fellows, alumni, and faculty members can learn more about each other's research, and identify colleagues with similar interests and possible projects for collaboration.

Contributions
Please send contributions, suggestions, and input to the editor.

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