

LIFE Newsletter Volume 16, No. 1 April 2022

Editorial

Dear Readers,

Welcome to the latest edition of the newsletter. As usual, we have a range of different article types on offer. We start with an interesting contribution by UZH alumna Elisa Weber and former UZH faculty and HU alumna Gizem Hülür, who review research on the emotional lives of older couples and the way their well-being is intertwined and the factors involved.

This is followed by a very informative piece on Open Access publishing by Josefine Blunk and Katja Seehaus, the MPIB's Open Access Team. It contains many useful links to help you navigate this important field, e.g., when deciding which journal to submit your latest manuscript to.

In the third article, Poortata (Pia) Lalwani, who recently defended her dissertation at UM, describes the path that led to her successful research on boosting GABA to increase brain signal variability, which involved a visit to MPIB to collaborate with LIFE faculty Doug Garrett. Like many before her, she very much recommends a LIFE exchange to experience science (and life) in a different context and gain new insights. Of course, we very much hope that exchanges will gather momentum again now that COVID-19 seems to be at bay.

Our 10 questions are answered by MPIB faculty Simone Kühn this time and she talks about her fascinating work in a new field, environmental neuroscience.

We can then introduce four new faculty at UZH as well as seven new fellows at Ann Arbor, Berlin, and Zurich. Welcome to them all!

After the list of recent LIFE publications, we finally present the latest LIFE news. The illustrations throughout this issue are inspired by the view into the atrium of the MPIB: Cherry blossom.

Julia Delius



Cherry blossom in one of the atria of the MPIB.

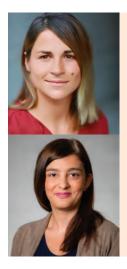
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Reminder

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-todate—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 Twitter: @imprs_life



Shared Emotional Experiences in the Daily Lives of Older Couples

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Intimate relationships are central to individual well-being (Hoppmann & Gerstorf, 2009) and health (Kiecolt-Glaser & Wilson, 2017) across the lifespan. Spouses and intimate partners are of particular importance in old age, that is, when challenges and losses of advancing age set in. Several factors may serve to elaborate why spouses and intimate partners count as one of the most powerful context factors in older individuals' lives (Antonucchi, 2001; Lang, 2001; Lang & Carstensen, 1994). First and foremost, most older people in Western societies live with a spouse or partner (Mosimann, 2016; U.S. Census Bureau, 2020) and older partners report feeling happier and less stressed when being close to each other (Genadek et al., 2019). Second, intimate partners provide a sense of belonging (Baumeister & Leary, 1995) and relatedness (Deci & Ryan, 2000) to each other, which are two of the most fundamental human needs. Third, intimate relationships serve as a powerful protective factor against loneliness. Studies have shown that loneliness peaks among the very old (80 years and older; de Jong Gierveld, 1998) and poses a threat to health and well-being (Hawkley & Cacioppo, 2010). Finally, older intimate partners provide emotional and instrumental support to each other (Bolger et al., 2000; Heylen, 2010), share intimacy (Reis & Shaver, 1988) and physical affection (Debrot et al., 2014), and compensate for agerelated health restraints and impairments (Iveniuk et al., 2014).

Bearing this in mind, it is not surprising that aspects of well-being are intertwined for older relationship partners. For example, depressive symptoms (Bookwala & Schulz, 1996; Hoppmann et al., 2011), life satisfaction (Bookwala & Schulz, 1996), and morale (Walker et al., 2011) are linked for older spouses. In addition, relationship partners in old age continually covary in their affective states and shape each other's emotion dynamics in everyday

life (Weber & Hülür, 2021). Here, we will provide an overview of the current state of research on shared emotional experiences in older couples by highlighting the role of affect/emotion contagion. We address theoretical questions as well as empirical evidence in line with affect/emotion contagion in the daily lives of older couples. Moreover, we elaborate on the role of age and gender differences as well as aspects of the situation for processes of contagion.

Affect/emotion contagion

Couple relationships across adulthood rest upon emotional bonds, which partners are motivated to maintain and cultivate over time (Mikulincer & Shaver, 2019). Especially in old age, most partners have spent a substantial part of their lives together and make for long-term teams which are grounded on a joint history of life experiences. For example, most couples in old age have seen their children grow up and become adults themselves or jointly gone through the challenges and opportunities of work life and retirement. Transiting these life stages hand in hand is linked with accumulated knowledge about one's partner's goals, needs, flaws, and weaknesses. At the same time, spouses get better at solving and managing conflicts, attuning goals that are opposing, and managing the emotional climate of the relationship (Hoppmann & Gerstorf, 2009). These experiences both strengthen and align the emotional bonds between partners. The emotional ties between partners, on the other hand, are rooted in covarying emotional experiences (Butler, 2011), that is, the mutual and reciprocal ebbing and flowing of partners' emotional experiences over time.

An important mechanism underlying emotional covariation in couples is affect or emotion contagion. Hatfield and colleagues (2014) define affect/ emotion contagion as a complex interaction of



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cognitive, psychological, physiological, behavioral, and social processes through which people experience affective or emotional states of close others. We conducted an experience sampling study with 152 older couples (aged 65+) in Switzerland and Southern Germany to study processes of affect contagion in older couples' everyday life. Partners completed six short daily questionnaires on iPads for 14 consecutive days (summing up to 84 guestionnaires in total). Amongst other variables, partners reported on their positive and negative affect as well as perceptions of their partner's positive and negative affect at each questionnaire. Our study demonstrated that positive affect was transmitted from male to female partners and vice versa. Negative affect contagion was directed from men to women, but not vice versa. This is in line with previous studies reporting affect transmission from male to female partners as more likely (e.g., Ferrer & Nesselroade, 2003; Larson & Almeida, 1999). However, it is important to note that other studies have not found any gender differences (e.g., Schoebi 2008, Sels et al., 2017). We will elaborate on these gender differences in more detail later.

The role of appraisals

First, we will allude to the specific mechanisms by which emotions are transmitted between intimate partners in old age. One source of emotion or affect contagion is emotional imagery or facial and postural mimicry (see Hatfield et al., 2014). Mimicry is described as a relatively unconscious and automatic process in which individuals perceive and mimic other's emotional expressions. Mimicking other's expressions stimulates physical feedback in form of body sensations, which then leads individuals to feel the observed emotion. Another important mechanism underlying processes of affect/emotion contagion between older partners are social appraisals. Appraisal theories of emotion (e.g., Lazarus, 1991) propose that people's evaluation (cognitive appraisal) of events in their environment elicit emotional reactions. Social appraisal theory builds on this proposition by acknowledging the role of appraisals in interpersonal interactions. The appraisal of an emotional event in the environment (e.g., watching a movie with our partner) is complemented by the appraisal of the behaviors, thoughts, and feelings of others during this event (e.g., watching our partner laugh, cry, or even swear during the movie). We use our memory or general knowledge of emotional appraisals to infer information about the observed event from other peoples' expression and integrate that information into our own appraisal of the event (Manstead & Fischer, 2001). Social appraisal theory is premised on the notion that emotions serve a social function in the context of interpersonal interactions, e.g., to signal danger or show compassion (Frijda, 1986).

Our own research has led to consistent evidence in favor of social appraisal theory. In our previously described experience sampling study, we examined whether processes of affect contagion were mediated by perceptions of partner's affective states at prior measurement points. For positive affect, we observed partial mediation of contagion from men to women and total mediation of contagion from women to men. Here, 29% of positive affect crossover from men to women was mediated by women's prior perceptions of men's affect, while 70% of crossover from women to men was mediated by men's preceding perceptions of women's affect. For negative affect, we found partial mediation of contagion from men to women, in that 34% of crossover from men to women was mediated through women's perceptions of male affect. These results suggest that everyday affect contagion in older couples is largely influenced by how people appraise their partners' feelings at previous moments. Based on these findings, we suggest that older partners use information about each other's feelings in daily life to inform their own appraisal of everyday situations and assimilate their behavior accordingly. This may guide subsequent interactions as well as affective states of both partners. As an example, these processes may occur during conflict situations: observing anger or hostility in our partner may influence how

we appraise that conflict, respond to and interact with our partner and subsequently feel about that conflict (e.g., being angry ourselves).

The extent to which affective or emotional states are transmitted between older partners is marked by individual differences (Schoebi, 2008; Weber & Hülür, 2021). Bias in the perception and appraisal of close others' feelings, such as empathy gaps (Van Bowen & Loewenstein, 1996), i.e., struggling to understand mental states that are different from our own present state, or falsely assuming that one's partner's feelings are similar to one's own feelings (e.g., Kenny & Acitelli, 2001) may lead to heterogeneity in contagion. Apart from this, research has differentiated several factors engendering heterogeneity in emotion/affect contagion.

Age differences

Age differences may be another source of heterogeneity in processes of contagion. Older couples may differ from younger couples with respect to how they appraise events and emotions expressed close to them. For example, studies have found that older people favor positive over negative information in attention and memory (age-related positivity effect; Charles & Carstensen, 2010), whereas younger adults often prefer the opposite. In addition, older partners appraise spousal interactions more positively than younger and middleaged adults do (Henry et al., 2007). Finally, older adults may increasingly use their life experience to minimize or avoid negative experiences such as conflict (Charles, 2010). Strategies to increase daily positive experiences may reduce negative but increase positive affect contagion between older partners.



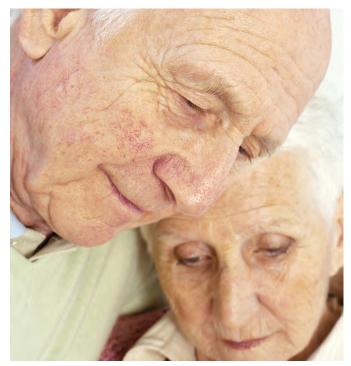
Source: John Birdsall/Press Association Images/Universal Images Group

Gender differences

Gender differences may serve as another relevant source of heterogeneity in affect/emotion contagion. Our own experience sampling study has shown that positive affect was transmitted from male to female partners and vice versa, whereas negative affect contagion was directed from men to women, but not vice versa. This may reflect traditional gender roles in heterosexual relationships, in which men exhibit more power and/or dominance than women and are thus more likely to transmit their negative affect onto their partners, while women's boundaries may be more pervious than men's (Larson & Almeida, 1999). In addition, women are more likely than men to show genderstereotypic caring and affiliation behavior (Suh et al., 2004), respond to their partner's stress and manage the emotional climate in the relationship (Neff & Karney, 2005). On the other hand, women show greater expression of positive emotions, affection, and warm feelings (Hook et al., 2003), which may help men to catch their positive feelings.

Aspects of the situation

Affect/emotion contagion might differ depending on the situation in which it is unfolding. For example, when interacting with people we hold close to us, we might put more motivation into appraising their thoughts and feelings than when acting with people less familiar. Hatfield et al. (1994) suggested that we are most likely to mimic and catch the emotions of those for whom we care. Thus, contagion between intimate relationship partners may be more likely than contagion between more distant social partners or strangers. In addition, when appraising the thoughts and feelings of familiar persons, we may rely on accumulated knowledge about how these persons typically feel and behave. However, deriving meaning from emotion expressions of unfamiliar interaction partners relies more strongly on sensory cues, which require cognitive capacities to be decoded. This may become more difficult with advancing age (Rauers et al., 2013). In addition, older partners might be motivated to be less accurate in certain stressful or relationshipthreatening situations such as conflict, because being highly attentive to negative partner emotions might increase one's own negative emotions towards the partner. The absence of contagion in stressful or threatening situations might thus re-



Source: Science Photo Library

flect a use of strategies to avoid negative emotions and maximize well-being (Charles, 2010).

What do we know about distinct emotions?

The type of discrete emotion that is transmitted is likely important for processes of affect/emotion contagion. For example, negative emotions such as sadness or anger are of highly distinct nature, show multidirectional age differences and may spark different interpersonal responses when disclosed (Kunzmann et al., 2014). That is, escalating feelings of anger may increase the likelihood of conflict and lead to mutual cyclical anger between partners. Disclosing feelings of sadness and vulnerability, on the other hand, may lead to intimacy and bonding between partners and help to solve conflict or ongoing problems. Frequent transmission of positive emotions, such as happiness or excitement, may foster emotional well-being and support healthy aging on the long term, whereas frequent transmission of anger or even depressive feelings (Joiner & Katz, 1999) may minimize well-being and ultimately compromise health. Moreover, the timescale on which affect or emotion contagion among partners unfolds is likely important. For example, reciprocating anger during highly stressful interactions or conflict situations may be harmful, whereas sharing sadness and consequential comforting efforts may express empathetic sensitivity on a longer timescale. Frequent contagion of anger and consequential conflict escalation may increase relationship dissatisfaction and instability (e.g., Kline et al., 2006) and intimate partners are well advised to reflect upon and resolve moments of negativity in a satisfying manner to avoid chronicity in negative affect/ emotion contagion.

Future directions

Future research should focus more closely on the type of affect (positive versus negative) and transmitted discrete emotion (e.g., anger versus sadness) when examining processes of affect/ emotion contagion in older couples. Moreover, characteristics of context or type of situation (e.g., conflict versus social support) and time scale (short-term versus long-term) of contagion should be addressed. Also, future studies should address individual's motivation and cognitive abilities to accurately decipher emotional expressions in daily life.

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Sightseers walking among the blossoming cherry trees in the temple gardens at Nippori. In Japan, the transience of the cherry blossoms, their exquisite beauty, and volatility has often been associated with mortality and graceful and readily acceptance of destiny and karma; for this reason, cherry blossoms are richly symbolic and have been utilized often in Japanese art. Utagawa Hiroshige (1857).

Source: Science Source



Source: Mirrorpix\Universal Images Group (UIG)



People row a boat under cherry blossoms at Sakuranomiya Park in Osaka, Japan.

Source: Buddhika Weerasinghe/Getty Images News/UIG



Music company under a cherry tree in Ueno, Japan. Eight people behind a curtain attached to a branch of a blossoming cherry tree: two men playing music and a woman playing koto are sitting with five other women around a sake bottle and lunch boxes. Attributed to Hishikawa Moronobu, Japan, 1673–1677.



Publishing in Open Access

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In what ways can I publish Open Access?

Golden Road

This refers to the primary publication in pure OA journals, whereby all scientific articles are freely accessible immediately upon publication. The articles usually undergo a quality assurance process before publication, usually in the form of peer review or editorial review by the journal's editorial board.

In the case of the golden road, the rights remain with the authors through the granting of open licences, such as a Creative Commons licence (https://creativecommons.org/licenses). Many OA journals charge a so-called "Article Processing Charge" (APC), which has to be paid by the authors, their institutions, or research funders. The situation is similar for OA books, for which Book Processing Charges (BPCs) are often charged.

A search for genuine OA journals is possible via the Directory of Open Access Journals (DOAJ; https://doaj.org). For a journal to be included in the DOAJ, it must meet certain minimum requirements in



terms of form and content, e.g., with regard to usage licences or quality review processes. The Directory of Open Access Books (DOAB; https://www. doabooks.org) fulfils a comparable function for books available in OA.

Green Road

The so-called Green Road, also called secondary publication or self-archiving, means free access to an article published in a subscription-only journal as a pre- or postprint, e.g., on the website of a research institution, on an institutional or disciplinary publication server (also called "repository") or on a private website. We particularly recommend secondary publication on a publication server. This achieves the best possible visibility and makes it most likely that the publications can be easily and permanently found by search engines such as Google Scholar. As shown in Figure 1, secondary publication using the Green Road is also possible before the paid publication is released, at

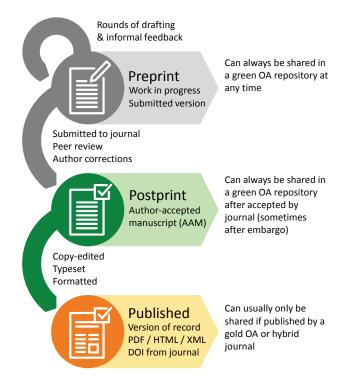


Figure 1. Typical publishing workflow for an academic journal article (preprint, postprint, and published) with Open Access (OA) sharing rights.

Source: Wikimedia Commons

This text is based on the very helpful information provided by the Open Access Team in the Library's section of the MPIB's intranet MAX (available to MPIB employees only: https://max.mpg.de).

the same time, or after an embargo has expired. Normally, the publisher's version cannot be used. However, the terms and conditions surrounding secondary publication vary enormously, so that this must be checked in each individual case. The Sherpa/Romeo database (https://v2.sherpa.ac.uk/ romeo) provides an introductory, albeit not legally binding, overview of the secondary publication conditions of numerous scientific journals and publishers.

What are the benefits of publishing in Open Access?

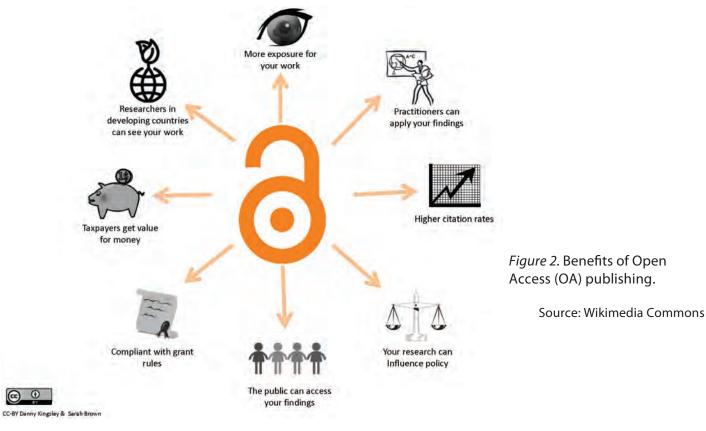
OA is now promoted by institutions globally and is often a mandatory condition of funding providers. The benefits are self-evident (see Fig. 2): The instant, free online access to scientific publications makes your publications immediately visible globally. The faster distribution and greater scope compared to traditional Closed Access have been shown to increase the citation frequency of a publication – and hence its impact. Another benefit compared to Closed Access publication is that the exploitation rights normally remain with the author and the publishers are only granted a simple right of use by contract. With the Open Content licenses commonly used in OA (e.g., Creative Commons), you can precisely define the rights of use granted to the general public. In addition, search engines like Google Scholar and international library catalogs can easily index OA publications. The possibility of exchanging research findings more quickly promotes interdisciplinary and international cooperation. OA also enables scientists from poorer countries to gain access to the latest research findings if their institutions do not have the resources for costly journal subscriptions.

Persistent identifiers (e.g., DOIs) mean that OA publications are available permanently and can thus be cited. Moreover, authors can decide themselves when awarding open licenses what users will be allowed to do with their publications. These benefits alone have led more and more institutions to define OA publications as a strategic goal. One example is Plan S (https://www. coalition-s.org). This initiative by renowned national and international research funding providers and the European Commission as well as the European Research Council (ERC) aims to systematically drive the transformation of scientific publishing towards OA by means of an appropriate funding policy framework and on the basis of clear guidelines.

Primary publication: Gold Open Access

How do I find a suitable (Open Access) journal for my research area?

The central directory of Open Access journals is the DOAJ, which can also be searched by subject area. In addition, filter options can be used in general journal and article databases in order to limit the



search for freely accessible content. In February 2020, the Center for Open Science (https://www. cos.io) launched a new rating system based on the so-called "TOP Factor" (https://topfactor.org). This transparent metric is based on feedback from the scientific community and as such offers an alternative method for evaluating the quality of scientific journals to supplement traditional metrics that only register medium citation rates. Journals are classified based on whether and to what extent they promote certain Open Science practices, e.g., early registration of hypotheses, the publication of data, and citation standards for data. The evaluation is not influenced by the extent to which the text content is available in OA. When choosing a journal, a look at the TOP Factor might help.

How do I identify whether a scientific journal is a reputable scientific journal and not a "predatory journal"?

"Predatory journals" are journals that often use aggressive advertising to encourage researchers to publish in OA for a fee. Such journals damage trust in science as well as the reputation of Golden OA.

A blacklist for predatory journals has been available since 2017: the original Beall's List (https:// beallslist.net) and its updates (https://beallslist. net/#update). A look at this list can help to decide whether a journal is a "predatory journal" or not. However, you should definitely use additional tools to judge whether a scientific journal is reputable. One useful tool is the website of the initiative "Think.Check.Submit" (https://thinkchecksubmit. org). This initiative is supported by associations of publishers and libraries and provides scientists with a checklist for determining whether a scientific journal is trustworthy and reputable. In order to raise the awareness of authors worldwide regarding the issue of "predatory journals," the three-step instructions have been translated into numerous languages.

There are also several places to start researching specific journal titles that are rated as reputable. For example, the DOAJ has the option to search for journals in specific fields and can be used as a whitelist specifically for finding suitable OA journals. In addition, the Web of Science (https://www. webofscience.com) provides a good overview of quality-checked scientific OA journals.

Why are publication fees charged for Open Access journals in the first place?

Traditional subscription-based journals are financed from subscription revenues - a financing source that OA journals do not have. Even though readers can access OA publications free of charge, production and distribution costs are nonetheless incurred and must be borne either by the authors or by their institutions, scientific associations, or research funding providers. Institutional memberships are another potential source of financing. These publication fees are also called Article Processing Charges (APCs). In light of the enormous price increases for scientific subscription journals, the OA movement has the declared target to achieve a successive redistribution of the purchase funds from library budgets expended on this to cover publication fees.

We advise that you check with your home institution whether funds are available to cover these fees. For instance, framework agreements have been concluded between international science publishers and the Max Planck Society, so that the publication fees for publications by MPS authors in several thousand scientific journals can be paid centrally.



Figure 3. The beautiful MPIB Library.

Source: Max Kißler

Life in a Cross-Ocean Collaboration



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In the summer of 2019, before the COVID-19 pandemic (and what feels like a long, long time ago!), I visited the Max Planck Institute for Human Development, Berlin (MPIB) to work on a research project investigating the role of GABA on agerelated neural changes. Along with a ton of great memories, my visit also led to some very interesting research (both described briefly below).

The actual visit might have been in May 2019, but the journey began long before that, and rather serendipitously. Aging is associated with declines in some cognitive functions, but not others. As we age, we tend to become a little more forgetful, we get distracted more easily, and we cannot process information guite as guickly. Why is that? Moreover, there are a lot of individual differences in these cognitive declines. Some people age significantly more gracefully than others - some older adults experience severe cognitive declines that significantly impact their daily living and that are often early markers of pathology, while others experience only mild impairments and lead a relatively healthy life. What causes these age-related declines in cognition? What makes some individuals age more gracefully than others? Understanding the age-related changes in underlying neural functioning might help us design ways for all individuals to have longer and healthier lives. With this goal in mind, I began working with LIFE faculty Thad Polk at the University of Michigan to investigate the cause and consequences of individual differences in neural changes in healthy aging in 2016.

My first dissertation project with Thad focused on understanding the scope and cause of age-related decline in neural distinctiveness (or how separable neural patterns are across various stimulus categories; Lalwani et al., 2019). During one of our meetings, I was rather convinced that the decline in neural distinctiveness we observed with aging, was simply a consequence of increased neural noise in representing information. I therefore suggested we simply quantify this neural noise by measuring variability in the fMRI signal. Cue – LIFE faculty Douglas Garrett's work! Which in complete contrast to my hypothesis, had found years before (and repeatedly after; Garrett et al. 2010, 2011, 2017) that the variability in the fMRI signal was lower in older adults compared to young and in fact was linked to worse cognitive performance. I remained skeptical and simply wanted to measure the effect of age on this "brain signal variability" for myself. From this desire began the cross-ocean collaboration aimed at using the methods and techniques developed in Doug's lab at MPIB, on the neuroimaging data collected in Thad's lab at UM.

Before I visited MPIB, I wrote to Doug describing my research interest and after a video call discussing the potential project ideas, he put me in touch with his research assistants Steffen Wiegert and José Yordan Ramirez who helped me get started on methods and techniques. I received a summer research fellowship from UM to visit Berlin in-person to continue this research. I also became a LIFE student during that time and was fortunate to make several friends and acquaintances before my visit. The LIFE family helped me prepare for the visit (even though it was not an official LIFE exchange) - my new friends offered to share their own homes when I had difficulty finding accommodation, while Silke Schäfer helped me with all the paperwork and visa required for my visit.

During my visit to MPIB, I had the opportunity to experience the European culture – which was dramatically different from both Indian and American culture. When I had first moved to the US from India, I was caught off-guard by the polite smile and "How are you?" from strangers on the street. However, when I visited Berlin, I realized how much I had come to appreciate this American friendliness. It was in complete contrast to the unapologetic stares from strangers on the Berlin subway (I swear I was not doing anything strange!). But I have to say, the timeliness and abundance of public transport, the street vendors with their remarkably fresh produce and the convenience of visiting different parts of Europe (see Fig. 1) were an absolute welcome upgrade. The environment at MPIB itself was the best of both cultures – it was intellectually stimulating and emotionally comforting. It was so easy to make new acquaintances, friends, and collaborators and attend talks on a wide range of topics from experts around the world. You can find any research article you care for in the library and grab healthy, delicious food or a latte macchiato (my personal favorite) from the canteen.

As is typical, the summer went by quickly and it was insufficient time to complete all my research. Thus, I planned a LIFE exchange for the subsequent summer to complete this research I had started. Unfortunately, I had to cancel these plans due to the pandemic. Regardless, we found a way to work around the time difference which often involved Doug joining late night zoom calls from his basement (where sometimes his twins made a guest appearance).

In our research, we found that brain signal variability during resting state is indeed lower in older adults in comparison to younger adults in several cortical regions (Yes, I am no longer a skeptic!). This variability has been hypothesized to make the brain more flexible and adaptable, and lower brain signal variability is associated with poorer cognitive performance. Therefore, lower variability might underlie some of the age-related cognitive declines. We found that by pharmacologically increasing the activity of GABA (the brain's major inhibitory neurotransmitter), that is known to decline in aging, this variability in older adults can be restored to the levels of young adults (see Fig. 2). Moreover, the boost in variability on drug was most pronounced in the older adults whose cognitive performance was the worst, i.e., who needed it the most. Together, these results suggest that interventions targeting the brain's inhibitory systems might be a promising research direction to pursue in our efforts to understand and ameliorate age-related cognitive impairments. I published a first-author manuscript describing these findings in the Journal of Neuroscience (Lalwani et al., 2021). This article was also one of the three 2021 publications selected by the Society for Neuroscience for press promotion and was covered by WIRED (https://www.wired. com/story/researchers-want-to-restore-goodnoise-in-older-brains) and BrainFactsOrg (https:// www.brainfacts.org/thinking-sensing-and-behaving/aging/2021/antianxiety-drug-restoresvouthful-brain-activity-in-older-adults-110421). We are currently investigating the role of aging and GABA on how brain signal variability changes in response to task. I am working on another first-author manuscript describing these results and together, both these studies formed the bulk of my recently defended dissertation.

Personally, this cross-ocean collaboration proved to be instrumental for me in both, professional and personal growth. The LIFE program provides an excellent opportunity for those who might not be as lucky in finding collaborators and grants but would like to benefit from a similar experience as I did. So I would strongly encourage all my LIFE fellows to participate in an exchange as things slowly resume. I found a collaborator and mentor for life in Doug and cannot wait for my next MPIB visit!



Reduced variability in older adults Comparable variability

Figure 2. Research summary.

Figure 1. Weekend in Rome.

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Badlands at sunrise with cherry trees in blossom, Emilia Romagna, Italy.

Source: Francesco Fanti/robertharding



Cherry tree in bloom in front of Japanese Institute of Culture in Cologne.

Source: EPA/UIG





Children smell the cherry blossoms along the Tidal Basin in Washington.

Source: Bill Clark/Roll Call Photos/ Newscom/UIG

Cherry blossom viewing at Ueno, Japan. Katsukawa Shunzan (ca. 1780–1800).

Source: Science Source



Great blue heron and cherry blossoms, Beacon Hill Park, Victoria, British Columbia, Canada.

Source: Michael Wheatley/ All Canada Photo/UIG



10 Questions

Simone Kühn, Leader of Lise Meitner Group for Environmental Neuroscience, Max Planck Institute for Human Development, Berlin, & Professor of Neural Plasticity, University Medical Center Hamburg-Eppendorf, Germany

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How did you get involved in the study of environmental neuroscience?

For many years I have studied how different experiences affect brain structure and brain function. This included the effects of lifestyle factors such as smoking, nutrition, exercise, media use, etc. However, whenever we conducted intervention studies to investigate the causal link between these factors and brain plasticity, we realized that participants usually stopped engaging in the target behaviors as soon as the study had ended. This made me wonder whether there would be other, more contextual ways to influence brain plasticity. And I wondered whether the living environment might play a role. When looking more closely into the existing literature I realized that this constitutes a major gap in human neuroscientific research. Although brain plasticity research in animals basically started with the investigation of the impact of living environments in rodents, there is not much research on how living environments impact the human brain.

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

I was surprised to see that there were already quite a number of popular science books with titles such as "Your brain on nature," "Brain landscape," or "Stress and the city," suggesting a large body of neuroscientific research, which I was unable to find. Although this turned out to be true for actual studies conducted by neuroscientists, I discovered that there is a wealth of interesting thoughts and ideas of how our physical environments may impact the human brain, but usually proposed by architects, or environmental psychologists, not by neuroscientists.

What do you consider the two main current debates within the field?

Since the field of Environmental Neuroscience is just about to emerge, it is difficult to pinpoint a main debate. But scientists interested in this area seem to be divided into those trying to understand how the physical environment may impact the human mind and brain, and others who are more driven by the aim to understand human behavior towards the environment and the goal to apply neuroscientific methodology to foster proenvironmental behavior.

One of your foci is on the brain benefits of going for a walk in nature. Can you tell us more about this?

The previously existing studies in the field of Environmental Neuroscience were mostly focused on cross-sectional comparisons of individuals currently living in cities or more rural environments. These studies mostly highlighted detrimental effects of acute city living or upbringing on brain structure and function (Besteher et al., 2017; Haddad et al., 2015; Lederbogen et al., 2011). Therefore, LIFE fellow Sonja Sudimac and I set out to investigate whether we could observe changes in brain function when we sent participants for a walk in an urban region of Berlin or to an urban forest. To our surprise, first results indicate that the forest exposure leads to a reduction in stress-related amygdala activation while we do not see any marked increases in this response in the participants who were sent for the urban walk (Sudimac et al., 2022). This rather points to the direction of beneficial effects of nature. This is in contrast to the interpretation of the previous studies, where most attention was paid to potential detrimental effects of urbanicity. From m point of view, treating urban and natural environments as a continuum might not be particularly helpful when the actual question is which particular features of the physical environment are the "active ingredients."

In another recent re-analysis of existing data from our lab together with LIFE alumna Anna Mascherek, we observed that the time participants spend outdoors 24 hours before MRI scanning was positively associated with positive affect and brain structural volume of the dorsolateral prefrontal cortex, when monitored over almost half a year repeatedly (Kühn et al., 2021).

What are other methods or instruments you use to assess the impact of different environments on the brain?

Recently, LIFE fellow Nour Tawil and I conducted a study using 3D models of virtual rooms in which we compared the effects of curved and angular contours (Tawil et al., 2021). We also conduct laboratory-based studies in which we expose participants to 360° videos of natural environments, and/or the smell of forests using essential oil and/or soundscapes of nature in order to identify the "active ingredients" of the beneficial effects of nature.

How can your research be applied to everyday life?

From my point of view, our research nicely illustrates the importance of how we spend our time in everyday life. Based on my reading of the existing literature in environmental psychology, previous studies in Environmental Neuroscience as well as our own data, it seems beneficial to spend time outdoors, and potentially in green spaces, such as parks and forests, and blue spaces, namely areas with lakes or rivers. However, I would say it is unclear as yet whether permanent residence in rural vs. urban areas is actually better for mental and brain health, or whether some kind of intermittently diverse exposure is to be preferred. But the long-term goal of our research clearly is to inform urban planning in order to promote brain plasticity and mental health.

What are you currently working on?

Together with LIFE alumna Johanna Drewelies, we are currently planning to conduct a study on monozygotic twins who have moved away from home and are therefore discordant with respect to their current physical living environments. Since they share the same genetic make-up and much of their physical environment during early upbringing, we think this is an ideal showcase to investigate associations between features of the physical environment and brain plasticity.

What do you get out of LIFE?

LIFE is my constant reminder that environmental influences might not be the same for different age groups. It seems as if children and older adults, in particular, are most strongly affected by their physical living environment. This may have the trivial reason that they spend more time in it, since they do not leave the house for work, or this may be due to certain vulnerabilities or sensitive phases. I also plan to focus more on childhood in the future and, potentially, on the effects of prenatal environmental exposures on the brain of newborns via their mother.

What is the added value of LIFE's internationality?

Clearly, the link between the physical living environment and the brain as well as mental health may vary across different geographical regions and different cultures. Although the internationality within LIFE is still very WEIRD (Western, Educated, Industrialized, Rich, Democratic), it is a constant reminder of the fact that we should not and cannot draw conclusions from German populations that generalize across countries and cultures.

Has the COVID pandemic changed the way you work?

We have started to run more online studies and also ecological momentary assessment studies, in which participants can take part without having to enter the lab. However, I also think COVID was a challenge that forced us to become more adaptive in terms of research plans, which I consider a positive outcome.

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New LIFE Faculty in Zurich

Wiebke Bleidorn is a Professor of Individual Differences and Assessment at the University of Zurich. She received her PhD in personality psychology in 2010 at the University of Bielefeld (Germany) and held professor positions at Tilburg University (Netherlands) and the University of



California Davis (USA) before she moved to Zurich. She studies the conditions, mechanisms, and consequences of personality development. Traditionally, personality traits have been thought of as being highly stable, genetically determined, and therefore unchangeable through environmental influences or interventions. Wiebke Bleidorn's research has refuted these claims, showing that personality traits can and do change throughout the lifespan and in response to environmental experiences. In her early work, she examined the role of genetic and environmental influences in personality stability and change. In her current research, she examines the effects of everyday experiences, life events, and the broader sociocultural context on the manifestation and development of personality characteristics across the lifespan. She uses a broad portfolio of methods including longitudinal studies, behavioral genetics, cross-cultural designs, and experiencesampling methods. A key insight of her work is that rigorous and impactful research on personality development requires the joint expertise from researchers across areas and disciplines. In joining LIFE, she sees a great opportunity to connect with developmental scholars from diverse backgrounds and contribute to transformative developmental research that tangibly advances the literature, individual well-being, and public welfare.

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Charles Driver is a Berlin LIFE alumnus, now working as a postdoctoral researcher in the Research Methods in Developmental and Educational Sciences group at the Institute of Education, UZH, and the UZH-affiliated Institute for Educational Evaluation. Charles develops and applies statistical methods for understanding developmental phenomena as interrelated dynamic systems, and is most recently involved in linking the measurement apparatus of item response theory to the work on dynamic systems, in the context of large scale online learning data. Charles also maintains and develops the ctsem and bigIRT software packages, and is in general fascinated by the difficulties of measuring and modelling developmental phenomena.



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Key publications

Driver, C. C. (2022). Inference with cross-lagged effects: Problems in time and new interpretations. *OSF Preprints*. https://doi.org/10.31219/osf.io/xdf72

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Christopher Hopwood is a Professor of Personality Psychology at UZH. His work focuses on personality assessment, psychopathology, personality development, interpersonal processes, environmental psychology, and human-animal relations. Recent studies have focused



on modelling data at different timescales ranging from half-seconds to years, and examining how personality change is related to individual differences in sustainable behavior. He is the Editor-in-Chief of the *Psychology of Human-Animal Intergroup Relations* and an Associate Editor at Journal of Personality Assessment. He is a former board member of the Society for Interpersonal Theory and Research, Society for Personality Assessment, and North American Society for the Study of Personality Disorders.

Key publications

Hopwood, C. J., Schwaba, T., Sibley, C., Milfont, T., & Bleidorn, W. (in press). Personality change and sustainability attitudes and behaviors. *European Journal of Personality*.

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Martin Tomasik studied psychology at the Freie Universität Berlin and received his doctoral degree from the University of Jena. After gaining research experience at the IOE, UCL's Faculty of Education and Society in London and Alexandra Freund's lab at the University of Zurich,



he started working at the Institute for Educational Evaluation in 2016 as a Senior Scientist and later as the Scientific Director. After a position as Professor of Developmental and Educational Psychology at the University of Witten, he was appointed as Full Professor for Methods of Developmental and Educational Sciences at UZH. This is an interdisciplinary position at the intersection of educational science, psychology, and methodology and thematically assigned to the modelling of learning and developmental processes.

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Tomasik, M. J., Helbling, L. A., & Moser, U. (2021). Educational gains of in-person vs. distance learning in primary and secondary schools: A natural experiment during the COVID-19 pandemic school closures in Switzerland. *International Journal of Psychology, 56,* 566–576. https://doi. org/10.1002/ijop.12728

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New LIFE Fellows in Ann Arbor, Berlin, and Zurich

Elena Bolt. I am a PhD student at the University of Zurich and part of the Computational Neuroscience of Speech & Hearing research group led by Nathalie Giroud. I have a Master of Science in Psychology from the University of Zurich with a focus on cognitive neuroscience. My main interest is



how the human brain processes spoken language. As part of my dissertation project, I am investigating speech processing in older adults. In my main project, entitled "Predicting cognitive status through the aging ear," I aim to identify neural markers of language processing that may be able to distinguish healthy older adults from those with symptoms of cognitive impairment (e.g., in patients diagnosed with mild cognitive impairment or dementia). For this purpose, I use neurophysiological recordings. Hearing loss plays a central role in my research, as it has recently been identified as an important potential risk factor for cognitive decline, and which can be mitigated, for example, by the use of a hearing aid. Other areas of interest include semantic and rhythmic processing of spoken language, and I am enthusiastic about stateof-the-art computational methods in auditory cognitive neuroscience.

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Blake Ebright. I am a doctoral candidate in the Combined Program in Education & Psychology at UM under the supervision of Kai Cortina. I am interested in the distinction between the academic skills and the life skills emerging adults develop in college. While academic skills have



the potential to clearly define students' careers, soft skills are promised by colleges and expected

by employers alike. My current work focuses on a three-pronged approach to life skills that are considered important for a successful transition into the workforce: critical thinking, self-regulation, and social-interactive skills. I ask whether these prongs develop over the course of a college career and whether college is in fact a "pressure cooker" for these skills. I am especially concerned with appropriately measuring these constructs using performance assessment tasks.

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Vanessa Frei. I completed my bachelor's and master's degree at UZH in the field of psychology with a focus on cognitive neuroscience. As part of my master's thesis, I investigated bodily plasticity in the form of embodiment and which socio-cognitive attitudes are associated with



altered bodily states and whether they can be influenced by them. I mainly worked with virtual body illusions and electroencephalography. Since June 2021, I am a PhD student in the Computational Neuroscience of Speech & Hearing group at the Department of Computational Linguistics. My research currently focuses on the relationship between hearing loss and dementia with the goal of gaining a better understanding of the underlying neural changes in order to develop potential preventive interventions and training in dementia research. Specifically, I would like to investigate whether natural and realistic immersion of audiocognitive training supports neural, as well as subjectively experienced, speech processing in older adults with hearing impairment, and whether there is evidence of transfer to everyday life. Agerelated hearing loss has enormous potential as a modifiable risk factor for dementia, although it is unclear whether traditional therapies (e.g., hearing aids) are sufficient or whether individual neural

processing of language can be improved through realistic and engaging training. It is particularly important to me that my work goes beyond basic research and potentially promotes applications in everyday life in the future (e.g., training games, mobile apps, etc.).

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Urmimala Ghose. I am a doctoral student at the Humboldt-Universität zu Berlin, also affiliated to the German Institute for Economic Research (DIW), Berlin. I completed my bachelor's and master's degrees in psychology, both from the University of Calcutta, India. For my master's thesis under



the supervision of Tilottama Mukherjee, I investigated the association between autobiographical memories and self-concept of middle-aged adults and a matched clinical group with a diagnosis of major depressive disorder. Afterwards, I pursued a Master of Philosophy in clinical psychology from the same university and developed a strong passion for the dynamics of human well-being across the life span. During my clinical training, what intrigued me the most in my close interactions with the individuals seeking mental health support was the psychological resources they possessed that helped them cope up with their "illness" and advanced them in the path of "well-being." As my M.Phil. dissertation, also supervised by Prof. Mukherjee, I investigated the roles of loneliness and various intentional activities in predicting the psychological well-being of students during the pandemic, using a mixed-methods approach. In addition to my regular curriculum, I collaborated in multiple national and international research projects as well.

Delving deeper into positive psychology made me realize that I wish to dedicate my academic career to researching on human life course and wellbeing. As a LIFE fellow, I am working with Denis Gerstorf and David Richter as my advisors. My research focuses on the connections of life events and selfcontinuity with human well-being in the evolving sociocultural contexts, employing longitudinal methods. With the fast-changing world, understanding the dynamicity of human well-being in the light of individual life events and changes in a sociocultural milieu due to rapid globalization will be instrumental in flourishing human potential and mental health in a much broader context.

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Raffael Schmitt. I did my bachelor's and master's degree in psychology and biology at the University of Zurich. In 2020 I finished my master with a thesis in which I investigated neurostructural changes in auditory-related brain areas in older adults with hearing loss. Since June 2020, I am



a PhD student at the Computational Neuroscience of Speech & Hearing group at the Department of Computational Linguistics. My PhD projects focus on neural processing of speech in older adults and possible modulatory effects of multisensory training thereof. Understanding speech in noisy environments is one of the most characteristic traits for age-related hearing loss. Importantly, these problems are not always solved by a mere amplification of sounds arriving at the ear (i.e., by fitting a hearing aid). This suggests that parts of the problem are central in nature (i.e., attributable to the nervous system). Using neurophysiological measures (EEG) I aim to identify neural processes that underly speech-in-noise perception problems and whether an app-based audiovisual training might mitigate these problems.

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Sarah Swanke. I am a predoctoral fellow at the Center for Adaptive Rationality at the MPIB in Berlin under the supervision of Gert Wagner and Ralph Hertwig. My research focuses on understanding where risk preferences come from. Currently, I am looking at how risk preferences devel-



op across childhood. Prior to joining ARC, I earned a MSc in Behavioural Science at the London School of Economics. Before this, I completed a BSc in Biology at Boston College.

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Kathy Xie. I am a doctoral candidate in the Cognition and Cognitive Neuroscience area of the Psychology Department at the University of Michigan working with Patricia Reuter-Lorenz. My current research projects focus on how working memory and episodic memory processes interact and how these interactions may vary due to cognitive aging and/or individual differences in working memory capacity. I am also studying non-pharmacologi-



cal (behavioral and non-invasive brain stimulation) interventions for memory changes due to 'normal' healthy aging or mild cognitive impairment.

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A walk under a canopy of cherry blossom on the Stray, Harrogate, North Yorkshire. Source: Anna Gowthorpe / PA Archive / Press Association Images / UIG



Cherry blossoms hang from trees at the Brooklyn Botanic Garden in Brooklyn. The Brooklyn arboretum has one of the world's largest collections of cherry trees outside of Japan and each spring celebrates Japanese culture as a way to usher in the season.

> Source: Chris Hondros/ Getty Images News/UIG

LIFE-Related Publications

Beam, C. R., Pezzoli, P., Mendle, J., Burt, S. A., Neale, M. C., **Boker, S. M.**, Keel, P. K., & Klump, K. L. (2022). How nonshared environmental factors come to correlate with heredity. *Development & Psychopathology*, *34*(1), 321–333. https://doi.org/10.1017/S0954579420001017

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LIFE News

- The *Spring Academy 2022* is in planning in Charlottesville and will take place as an online event from May 9 to 11.
- It will hopefully be possible to meet again in person at the following *Fall Academy 2022* in Berlin from October 13 to 16.

Exchanges

 Most exchange activities are still on hold due to the pandemic.

LIFE Berlin

- Urmimala Ghose and Sarah Swanke are the new fellows in Berlin this April (for more information, see pp. 21ff.)
- HU alumna Johanna Drewelies has joined Simone Kühn's Lise Meitner Group for Environmental Neuroscience at MPIB and is working on a project investigating the effects of different environments on cognition and the brain in monozygotic twins.
- MPIB alumnus Stefan Heß submitted his dissertation entitled "The Role of Linguistic Units in German Developmental Handwriting Production" to Universität Potsdam in February. He will continue to work on this topic at Universität Rostock, Germany.
- MPIB fellow Anna Karlsson submitted her dissertation entitled "Neural Oscillations Shape the Quality and Content of Episodic Memories in Young Adulthood and Older Age" to HU in December. She is now dividing her time as a postdoc and working with Roberto Cabeza at HU and Myriam Sander at MPIB.
- Lena Keller, alumna at Universität Potsdam. has received the Publication Award for Young Scientists (Postdocs) from the German Society for Empirical Educational Research for: Keller, L., Preckel, F., Eccles, J. S., & Brunner, M. (2021). Top-performing math students in 82 countries: An integrative data analysis of gender differences in achievement, achievement profiles, and achievement motivation. Journal of Educational Psychology. Advance online publication. https://doi.org/10.1037/edu0000685
- FU fellow *Felix Molter* has successfully defended his dissertation entitled "The Role of Visual

Attention in Preferential Choice: Model-Based Analyses of Choice and Eye Movement Data." He is now working as a postdoc in Soyoung Park's group "Decision Neuroscience and Nutrition (DNN)" at the German Institute of Human Nutrition Potsdam-Rehbruecke (DIfE).

- MPIB alumnus and faculty *Thorsten Pachur* has been appointed Professor of Behavioral Research Methods (W3) at the Technische Universität München. The focus of his work will remain on the study of cognitive and affective processes in judgment and decision-making and the integration of different measurement and modeling approaches.
- MPIB fellow Sarah Polk submitted her thesis entitled "Aerobic Exercise for the Promotion of Healthy Aging: Changes in Brain Structure Assessed With New Methods" to Freie Universität Berlin in March.
- HU alumna Sophie Potter successfully defended her thesis entitled "Associations Between Physical Health and Subjective Well-Being Across Adulthood and old Age: Their Nature, Correlates, and Consequences Across Multiple Timescales" in December 2021 and is now an Early Career Fellow with the Department of Psychology at the University of Leicester in the UK. She is working with the "Health and Wellbeing (with Ageing)" research group, with her research focusing on individual differences in health and well-being across the lifespan.
- *Katharina Spieß*'s term as LIFE faculty has ended since she has left DIW to become Director of the German Federal Institute for Population Research (BiB) in Wiesbaden. She has also become Professor for Population Economics at Johannes Gutenberg-Universität Mainz.
- Faculty *Timo von Oertzen* is offering all LIFE fellows the opportunity to take part in his online courses at Universität der Bundeswehr München: one on multivariate methods took place from January to March and another on data mining and machine learning is starting later this spring.

LIFE Michigan

- *Kathy Xie* has joined LIFE Michigan as a fellow (see pp. 21ff. for more information).
- Fellow Esra Ascigil has received the Pillsbury Graduate Research Award and the Department of Psychology Dissertation/Thesis Grant.
- Fellow *Kristi Chin* has been awarded the Pat Gurin Distinguished Lecture Series Award.
- Fellow Hyesue Jang successfully defended her dissertation entitled "The Adaptive Use of Working Memory in Young and Older Adults: Effects of Incentives and Task Demands" in March. She is starting a postdoc at Vinod Menon's Stanford Cognitive & Systems Neuroscience Lab in May.
- Faculty Shinobu Kitayama has received the 2022 APA Distinguished Scientific Contributions Award which "honors psychologists who have made distinguished theoretical or empirical contributions to basic research in psychology."
- Fellow Poortata (Pia) Lalwani successfully defended her thesis entitled "Age-Related Changes in GABA: Effects on Neural Distinctiveness and Variability." She has accepted a National Institute of Health (NIH) K00 postdoctoral position at University of California, Irvine with Craig Stark.
- Faculty Patti Reuter-Lorenz has been elected Fellow of the American Association for the Advancement of Science (AAAS). She was selected "for distinguished contributions to the field of cognitive neuroscience, particularly for outstanding research on mechanisms of attention, memory and aging, and for dedicated service to the field."
- Faculty Priti Shah is the first recipient of UM's Amy L. and Kirk L. Wolfe Prize. It supports outstanding Department of Psychology faculty who teach and mentor undergraduate students majoring in Biopsychology, Cognition, and Neuroscience. She is also one of five University of Michigan faculty members to be named Arthur F. Thurnau Professors this year in recognition of their outstanding contributions to undergraduate education.
- Faculty Abby Stewart has won the Rackham Distinguished Graduate Mentor Award, which "recognize[s] tenured faculty from any disci-

pline who are outstanding mentors of doctoral students, who support their intellectual, creative, scholarly, and professional growth, and foster a culture of intellectual engagement in which they thrive."

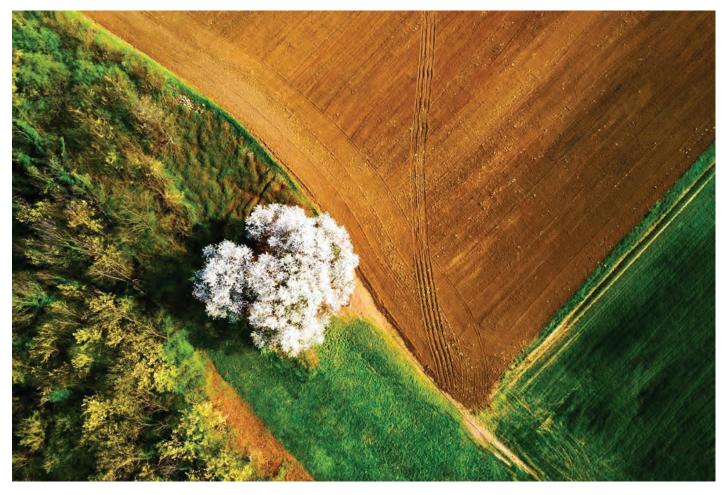
LIFE Virginia

- Faculty *Steve Boker* has once again offered LIFE fellows at all sites the opportunity to take part in his online Structural Equation Modeling class.
- Congratulations to fellows Evan Giangrande and Sean Womack who matched to clinical internship sites. Evan will be starting at Harvard Medical School/McLean Hospital on July 1 and Sean is going to the University of Rochester School of Medicine on August 1.
- Faculty *Tobias Grossmann* has received the Alexander von Humboldt Foundation's Friedrich Wilhelm Bessel Research Award and will come to the MPIB in Berlin in the summer of 2022 and 2023.
- Fellow Jessica Mazen successfully defended her dissertation entitled "Methodology and Application of Item Response Theory: Evaluation of Nonignorable Missingness Approaches and Development of a Speciesism" last year.
- Alumnus *Bobby Moulder* has moved from UZH and is now a research scientist working in Sidney D'Mello's lab at the NSF AI Institute for Student AI-Teaming within the Institute of Cognitive Science, University of Colorado Boulder.
- Fellow Shannon Savell won a Society for Research on Child Development Travel Award and the University of Virginia Graduate School of Arts and Sciences Council Research Grant.
- Faculty *Amrisha Vaish* received the Max Planck Sabbatical Award 2021 and will be coming to the MPIB in the summer of 2022 and 2023.
- Alumna *Meltem Yucel* received the 2022 Best Dissertation in Affective Science Award from the Society for Affictive Science.

LIFE Zurich

 Ines Florin of the Jacobs Center for Productive Youth Development has joined LIFE Zurich as the LIFE coordinator. You can reach her by mail: ines.florin@jacobscenter.uzh.ch

- Wiebke Bleidorn, LIFE Berlin alumnus Charles Driver, Christopher Hopwood, and Martin Tomasik have joined LIFE Zurich as faculty (see pp. 19ff. for more information).
- Elena Bolt, Vanessa Frei, and Raffael Schmitt, all working in LIFE alumna and faculty Nathalie Giroud's lab, have joined LIFE Zurich as fellows (see pp. 21ff. for details).
- Alumna Regula Adams has started a new position as a project leader on the topic of living spaces in old age at Institut Neumünster, which is an interdisciplinary competence center for the quality of life in old age.
- Fellow Carla Eising successfully defended her dissertation entitled "Mental, Cognitive, Physical, and Neurobiological Health in Aged Individuals Following the Exposure to Potentially Traumatic Events" last year.



Aerial view of a cherry tree in bloom, Lombardy, Italy.

Source: Francesco Bergamaschi/robertharding

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

LIFE Newsletter

Editor

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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.

Publishing information

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