

# Hidden Lives. Early Childhood Care as an Academic: The Slow Burn

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**Abstract:** As the inaugural entry in the new series *Hidden Lives*, this Viewpoint Article highlights challenges in early childhood care faced by academicians. Research centers must adapt to societal shifts in family structure, uncertainty around research funding, expanded job responsibilities and upheavals brought about by the pandemic. These problems represent opportunities for change at the technological, cultural and policy levels. It is crucial that we recognize those in need and help where we can.

**Hidden lives.** *Angewandte Chemie* is launching a new series of Viewpoint Articles to depict the diverse lives of its authors, especially when those experiences illuminate little-discussed problems—and opportunities for change—in the scientific community. *Ihr verborgenes Leben* (or *Their Hidden Lives*) emerges as a section within the category of Viewpoint Articles. It is envisioned as a space dedicated to giving voice to researchers who, in addition to their official duties, undertake “invisible work.” In many cases, these additional tasks go unrecognized and can place a significant burden on those affected, including scientists at all stages of their careers.

The aim in publishing this series is not only to raise awareness of the challenges faced by those who deal with “invisible work”, but also inspire and show our common humanity. These pieces try to go beyond the individual level to reach out to the entire scientific community, striving for an inclusive research culture that embraces complex personal situations that are not always the result of free choice. They focus on sharing personal experiences while providing information on learning mechanisms and available resources that can help and support others in similar situations.

Articles in this series may address (but are not limited to) topics such as elder, child and family care; the challenges faced by underrepresented groups in science; challenges of being a student/early career researcher in a foreign country; supporting the mental/physical health of chemistry students and co-workers; and advocacy in diversity, equity and inclusion in science.

*Angewandte Chemie* aims to publish a limited number of articles within this series with no fixed periodicity, according to the availability of the author(s) and the suitability of the topics covered. Members of the editorial team, Scientific

Advisory Committee and International Advisory Board will suggest suitable topics and authors. Additional proposals for suitable topics and authors may, nonetheless, be sent to the editorial office for consideration. Reviewers will be sought who are uniquely positioned, by their expertise, to comment on issues of concern to, and with an impact on, the scientific community.

**Early childhood care as an academic: The slow burn.** My choice to pursue an academic career in chemistry has turned out alright. Each day has provided opportunities for growth in all its forms: intellectual, interpersonal, moral, spiritual. And I am positioned as a faculty member to pass these gifts directly to the next generation, to the best of my ability. But please don't mistake this contentment for self-satisfaction. In the face of steep inflation and stagnating federal investment into fundamental science research, there are real challenges that confront young academicians today. One problem of great concern to me is the growing difficulty of early childhood care in academia. Fatherhood has been the ultimate and most intimate of opportunities to positively shape another person's life. Yet I can ratify the feeling that “parenting is treated like an ill-advised and extremely expensive hobby,”<sup>[1]</sup> as opposed to a complement to one's career and fundamental aspect of being human. As an academic, I see this as a solvable problem, rather than an excuse to complain or disparage academia as an institution. But it is a problem.

I was asked by the editorial team at *Angewandte Chemie* to write the inaugural article in a series dedicated to the personal lives of scientists. Whereas I would like to write on behalf of a common demographic, I realize this is not possible. There will be many things left unsaid, many experiences unique to my own life and many problems I was privileged to avoid. Nevertheless, I hope there is a common thread that connects me to others, so perhaps we can help one another and the community at large.

I grew up in Wilmington, Delaware (USA), home of DuPont de Nemours, Inc., birthed from the Brandywine River, whose rapid descent from Chadds Ford drove gunpowder mills on the shore. The founder, Éleuthère Irénée du Pont, was a chemist trained by Lavoisier, whose family emigrated to America from France after the Reign of Terror (1793/1794). Wilmington became a chemistry mecca. In the years of my childhood, chemists flocked to Delaware to join DuPont or Hercules (the gunpowder division of DuPont created by the Sherman Antitrust Act) or ICI, whose biosciences division became Zeneca, now AstraZeneca. Chemists populated the suburbs, their children filled the schools and their names fill my memory. **Issues of JACS**

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from the 1980s read like the attendance sheets of my elementary schools.

Apart from these familiar names, most authors remain unknown to me, scattered across countries and years. Who were they? What lives were hidden behind the pages? The research published in *Angewandte Chemie* comes from around the world, from researchers in diverse cultural contexts facing diverse obstacles. Whereas some choose to devote their entire lives to science, others are not given a choice at all. Much has been said about the “invisible work” thrust upon our colleagues, for which there is little compensation or recognition. Much of this labor is good and worthwhile: caring for children, aging parents, or disabled relatives; advocacy and activism; societal outreach. But it diverts time and energy from career advancement. The editorial team would like to bring this work into the light in a new series called *Hidden Lives*.

The title was suggested by my mother, who taught high school German, French and Spanish while also managing our household. Like many in the developed and developing world, I grew up in a family with two working parents and no extended family close by, which focused household responsibilities on only one or two caregivers. This experience reflects a broad demographic shift: whereas 50% of U.S. families settled near relatives in the 19<sup>th</sup> century (measured as colocalization of surnames within the same census enumeration district), this number declined 3-fold over 150 years.<sup>[2]</sup> Needless to say, nearby family has its advantages. In demographic parlance, “close proximity of family members is strongly positively associated with inter-generational support including help provided to aging parents and relatives, assistance with household chores [...] health care utilization and [...] labor market outcomes for both men and women.”<sup>[3]</sup> In the absence of this support network, the responsibilities of family management fall disproportionately on mothers,<sup>[4]</sup> even when both parents are employed outside the home, as is increasingly the case. Prior to 1940, only 9% of U.S. households consisted of two parents that were both externally employed.<sup>[5]</sup> As of 2021, over 62% of married-couple families with children included two working parents.<sup>[6]</sup> Additionally, over 26% of households with non-adult children revolved around a single parent (4:1 women:men).<sup>[6]</sup> Family structures have changed, but not all work structures have kept pace.

For academicians and other researchers, a caregiving role can prove one hat too many. Already, faculty are expected to be researchers and teachers, mentors, fundraisers, writers, editors, reviewers, panelists and administrators. Ongoing career burnout comes as no surprise, especially in the disruption of the COVID-19 pandemic.<sup>[7,8]</sup> Pile caretaker burnout<sup>[9]</sup> on top,<sup>[10]</sup> and you have a recipe for unsustainability and mental health disorders, especially for single parents with no respite. This is to say nothing of local, national and international crises like catastrophic storms or fires, political strife or war.

Demographic shifts of family structure and location<sup>[2-4]</sup> suggest pre-tenure faculty cannot always lead “the monkish/nunnish existence” advocated by our forebears.<sup>[11]</sup> The inner fortitude that maintains young scientists in the lonely hours of the laboratory must also be summoned when a child receives a troubling diagnosis; or a disabled sibling moves in; or an elderly parent falls; or a refugee needs a home. Let’s discard the mythology of the past and deal with real life. Perhaps the community requires a reboot in which we advocate for quality over quantity, impact over impact factor, wandering off over keeping up. Above all, we must provide the freedom and the infrastructure to allow researchers to lead their own unique lives, even if it may not conform to prior models.

My own experience with caretaker burnout<sup>[9]</sup> began in 2015 when my wife entered surgical residency and I assumed full time care of our four kids aged 3 months, 2 years and 4 years (twins). I was already an involved father; I began a five-year sojourn into semi-single parenthood. This was a choice: it was voluntary and temporary. Many in the scientific community are thrust into difficult caregiving situations by death, disease, divorce, or an absent support network. For better or worse, we had only our own decisions to blame.

The term “residency” refers to a multiyear-long program of specialized medical training, so named for the historic practice of trainees residing in hospital-supplied housing. This latter practice has receded, but the immersive experience remains. For a physician to reach residency, the U.S. educational system requires, with some exceptions, four years of university plus four additional years of medical school; subsequent residency programs range from 3 to 5 years. As a result, female physicians delay pregnancy 7.4 years later than the general population<sup>[12]</sup> (30.4 y vs. 23 y;



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He also serves as father to four children, now aged 12, 12, 10 and 7. Their household specializes in conflict resolution.

late in residency or early in “fellowship,” itself an additional training program).<sup>[13]</sup> Risks like preterm birth, small size for gestational age, and postnatal mortality climb after age 30 with inflection points in the 20s,<sup>[14]</sup> so women physicians face a dilemma. Delay motherhood or delay a career; each come at a cost. The alternative of carrying a child during residency also carries a risk that depends on the person and the specialty. My wife decided that the best compromise between the anachronistic medical track and real life would be a break to start a family between medical school and residency. The timing of this break coincided with the start of my academic career, which was convenient (for me anyway). Female academics face a challenge similar to physicians where critical postdoctoral and pre-tenure years can make pregnancy seem untenable; I benefited from my inability to carry a child. The first years as an assistant professor were a steep learning curve fraught with mistakes, adaptation and the occasional good result wrapped in a continuum of failure—that’s research after all. However, **I could be semi-independent, like many fathers, free to work late if necessary and travel for seminars.** Single or primary caregivers lack this luxury. For her part, **my wife decided to pursue a degree in medical informatics during this period.** **Her largely computational work could be carried out from home when necessary.** Seemed like a good plan.

Over time, the window of opportunity for a return to clinical work narrowed and the likelihood of residency became more remote. Therefore, **when a local residency program offered my wife a categorical position, we held our noses and jumped in.** Without rehearsing the details, I quickly found myself in over my head, which is to say nothing of her unrelenting stress as a resident. My wife was absent from 5 am to 9 pm, on average, six days a week for five years. No typos in that sentence. And while we had her income (a little less than a postdoctoral salary), we would have preferred her.

The first year was hard. My youngest daughter still required overnight feeding, the older twins learned to navigate public school (kindergarten) and our middle child turned the corner from toddler to preschooler. I feel privileged to have experienced their milestones and sad that my wife missed out. But referee reports hit extra hard when you are underslept and overworked. Crying children, spurned dinners and constant cleaning invite the parent to ask “Is this all there is?” The grant rejection says, “No, there’s less.”

Those who never experienced early childhood care or who participated via an intermediary spouse may be surprised at the complaints. After all, I never wanted for company: every day was a party (but nobody left). I had a legitimate excuse against excessive committee work and I spent more time at home than the average faculty member. **But the unrelenting deadlines of school transportation, meals, class preparation and student needs (proofreading, data analysis, problem solving, psychotherapy) turned each day into a slow-burning panic.** It wasn’t the tasks themselves, I realized. It was the depletion of an emotional reservoir that never quite refilled by the morning. Children rely on the emotional scaffolding of their parents, who can them-

selves impart healthy self-talk<sup>[15]</sup> during early childhood development.<sup>[16]</sup> This is emotional labor by the parents and worthwhile work. In many ways, it parallels the reassurance and guidance provided to students when a paper is rejected, an experiment goes awry or a colleague behaves badly. But for the parent-academician, the emotional work continues at home. I ended up absorbing the hurt, frustration, sudden anger—in short, the emotional instability—of my young children. It caught me by surprise and too late. When the **bottom fell out of our lab budget in 2018, the underlying anxiety turned to insomnia and clinical depression.**

“Relax, take some time off,” I was told. “No #!@%,” I said. For the record, regular times of rest, reflection and rejuvenation can improve mental health, but there is no panacea. If your job has distressed you, change responsibilities, change bosses, change jobs. If parenting has exhausted you, don’t walk out on your family. **I decided against the selective serotonin reuptake inhibitor (SSRI) prescribed by a physician** (25 mg sertraline, a low dose, once daily). This was a personal choice and not at all a recommendation. My rationale was two-fold: 1) a desire to treat the external, environmental etiology that led to internal dysfunction and 2) a lifelong struggle to implement daily disciplines, which risked withdrawal and discontinuation effects.<sup>[17]</sup> As a referee pointed out, this choice benefits from “survivor bias”:<sup>[18]</sup> you’re reading this now because I emerged. I may not have.

Five years later, I have improved significantly. First, recovery was circumstantial: my wife finished residency in 2020 and introduced novel household management techniques (chores! rules!). She traveled throughout the pandemic to assist patient surges and still travels regularly for a medical ministry, but **the kids are older and more independent.** **Lab funding has improved,** projects have succeeded unexpectedly and the group has established a healthier interpersonal dynamic. Plus, I have much more time to invest in projects and students. Like an injured muscle or tendon, this release of constant tension has, I suspect, provided my mind the rest it could never achieve in the thick of overuse. Second, recovery was deliberate: I sought help early and benefited immensely from a professional counselor who provided positive and negative feedback. On average, men tend not to seek treatment for mental illness due to social stigmas associated with traditional masculine norms.<sup>[19]</sup> Well, I was already up to my eyeballs in babies, what harm would a little more gender abnormality do? Third, recovery began from a single exchange.

**Before I experienced depression, I thought it resided in the mind only.** In its depths, however, it was visceral, waves of anxiety and a clenching of the gut, unexpected and spontaneous like a muscle spasm, unrelated to immediate circumstance. **Even on the mend, I would wake in the middle of the night with a cold dread spreading inside my torso.** At its worst, **it was daily and continuous.** I confided in a few friends and asked their advice. To my surprise, an accomplished and highly respected colleague revealed their own struggle with depression. This revelation became relief. Tucked away in my subconscious was the fear that depression rendered me **unfit for academia, too thin-skinned**

for peer review, spiritually or philosophically flawed and incapable of mentorship. A single colleague who divulged their shared experience—a comradery of suffering—made a world of difference.

Some may read this all with distaste and view it as oversharing: personal information best kept private. Or maybe I am plying the reader for pity points. I hope not. Instead, I decided to spill the beans with the hope that my experience will help others in three ways.

First, knowledge that I was not the lone clinically depressed PI provided some relief. You are not alone either. As anxiety and depression have become common among graduate students,<sup>[20]</sup> I suspect they are widespread among faculty as well. Treatment is available and, although some may not relate, many can. I consider myself fortunate to have experienced depression and lucky to have recovered; a gift of experiential empathy and the emotional resources to help.

Second, as my colleague's ordeal caught me by surprise, those who know me may struggle to connect my external demeanor with my internal condition. At times, it receded and frequently I stuffed it. As athletes continue to play through injuries, I put on a stolid face, I figured, for the good of the team. Was this a good idea? I do not know. I may have inadvertently hardened the culture, rather than softened it. Perhaps if I had been more open, the tenor of conversation in my circles might have changed. Whereas human resources departments can referee institutions, society at large holds, for good reasons, few institutionalized checks on speech. Occasionally, this liberty creates an obliging environment for jerks and narcissists, but a hostile one for others. Recognition that co-workers, friends, or family suffer silently might change how we treat each other. A slap on the back would not suit a neck injury; some situations require a gentler touch.

Third, the academic community must recognize and adapt to societal changes that place strain on parents or prospective parents.<sup>[21]</sup> The most precipitous strain occurred during the COVID19 pandemic, when 2 million mothers left the labor force—nearly double the number of fathers that left—as schools and childcare centers closed.<sup>[22]</sup> Some jobs are just not adaptable to a work-from-home format. This is not true in academia, as many aspects of research and teaching may be carried out remotely, if allowed. I taught three separate courses remotely from September 2020 to March 2021 and gave innumerable virtual seminars, all while my kids attended online elementary school, my wife traveled and our modem sat smoking in a corner. Nobody loved Zoom classes or preferred online research talks, but they worked in a pinch. Flexible opportunities for young parents could help close the opportunity gap at early career stages when visibility, recognition and stability are all low. Remote, online interactions provide for control, childcare and equity—three critical responses identified by Dr. Tracey Brower to support families and communities, as well as institutions struggling to retain parents.<sup>[23]</sup> Yes, I am that person advocating for more online lectures. While I always prefer in-person interaction, the flexibility conferred by video-conference technology is a boon for parents; academic

centers would do well to optimize their platforms for students and faculty alike. Two of Brower's remaining criteria—predictability and community—may be the hardest to meet since research is nothing if not unpredictable, and academicians have too little time for family let alone a busy social calendar. However, institutions might provide better stability in teaching assignments and convenient seminar hours to suit the regimented schedules of school transportation. Conferences should consider more child-friendly formats and allow quick visits, rather than requirements that speakers stay 48 hours or more. As far as community is concerned, that's up to us all.

A proofreader recommended I also mention the positive aspects of parenting as a young academic, lest I send chemist birthrates plummeting. And it's true: the unique freedoms of an academic career produce some wins for families. Even in the most hectic times, my flexible schedule allowed me to visit my daughter's preschool and teach molecular theory (sort of), tutor the twins' Math Olympiad team, and attend every school performance, even the ridiculous Halloween parades—silly for me, but symbolic for children. Our kids gained a degree of independence in thought and action sooner than they might have: they pack their own lunches, vacuum, help with dishes, and challenge these chores with appeals to democratic forms of governance. Although they embody a range of personalities, they have learned to adapt to changing circumstances and they have understood (mostly) the sacrifices we make for one another, a mutual deference that I hope will serve their future relationships. Because our lives revolve around education, problem-solving and care for others, our kids can absorb these values by observation, not dictation—mixed in of course with cultural pressures and imperfect parents. Conversely, the many responsibilities of childcare and lab management have freed me from the rigid dogma of what both an academic career and involved parenthood should look like. Significant good has come from nonconformity to implicit and explicit expectations. I'd like to think the same is true in science; that experiment is still running.

The *Hidden Lives* series is an attempt to illuminate the complex lives of scientists, the emotional freight carried behind the pages of journals and the humanity of authors (at least until AI software writes our papers). This series will feature short articles from a diversity of scientists with a diversity of experiences, especially poignant pieces about caring for others. At a time when our world is fraught with conflict, we mean to highlight common ground. Don't get me wrong. Good science brokers no compromise between differing hypotheses. Standards for data handling and interpretation should be merciless. But it's mercy that undergirds good relationships and understanding that fosters health in a diverse society. We hope that the light of the lives hidden from us, the invisible work borne by our colleagues, will change our view of scientists and inspire us to generous lives and a healthier society. I don't consider the brief, difficult time in my own life to be emblematic of the best stories of caregiving among the chemistry community. But it provided, at least, the inspiration for this series

and the better stories that will follow. Look for them in *Angewandte Chemie*.

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## Viewpoint Article

### Hidden Lives

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*Hidden Lives*. Early Childhood Care as an Academic: The Slow Burn



The *Hidden Lives* series documents the “second jobs” of our colleagues, the invisible work that often goes unseen. In this first Viewpoint Article, we see the

challenges of early childhood care set against the backdrop of societal shifts in caretaker roles and job responsibilities.