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# Homeschooling: An Updated Comprehensive Survey of the Research

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Abstract This article provides a comprehensive summary of the English-language research and scholarship on homeschooling, organized into the categories of demographics, motivation, curricula, academic achievement, socialization, health, law, relationships with public schools, and international homeschooling. The texts used in this review were culled from virtually the entire universe of English-language academic texts on the topic—more than 2,000 in total. Scholarship was evaluated using three primary criteria: quality of scholarship, significance or influence, and distinctiveness of insight. This review sought to answer the following questions: What primary topics or themes are addressed in the literature? How effective are the methodology and analysis performed? What does the research reveal about homeschooling, and what questions remain unanswered?

**Keywords** homeschooling, home education, alternative education, curriculum, academic achievement, socialization, religion, school regulation

### **I. Introduction**

From the establishment of large-scale public and private education systems in the United States in the 19th century through the late 1970s, nearly all American children received their formal education in schools. But beginning in the late 1970s and increasing steadily since then, the home has become a popular educational locus for an ever expanding number of families across an ever widening swath of the U.S. population, and it has grown in profile in several other countries as well. This increase has often been dubbed the "homeschooling movement," since many families involved have engaged in aggressive and concerted political and legal action to make it easier to keep children at home during the school day (Gaither, 2017). Though an accurate count is impossible, the National Center for Educational

Robert Kunzman (corresponding author) Indiana University, USA rkunzman@indiana.edu Statistics (NCES) estimated that in 2016 around 1.7 million children, or 3.3% of the school-age population, was homeschooling (McQuiggan, Megra, & Grady, 2017). Though this figure represents a dramatic increase since the NCES began studying homeschooling in 1996, there was virtually no change from 2012 to 2016, suggesting that homeschooling rates might have finally plateaued. Whether or not this is the case, the academic study of the phenomenon has grown tremendously since we wrote the first version of this article in 2013 (Kunzman & Gaither, 2013). Here we attempt to update the original article by incorporating the findings of the literature published in the ensuing seven years.

In 2013 we noted two limitations to the scholarly literature on homeschooling. Both remain to this day, though there has been marked improvement. First, it remains the case that the great majority of homeschooling scholarship is qualitative, based upon small convenience samples. Homeschooling scholarship taken in the aggregate is thus little more than a series of anecdotes embellished by elegant methodology. Quantitative research on homeschoolers has advanced somewhat, but it is still hampered by several factors. In the United States and several other countries even basic demographic data are unavailable given the lackadaisical approach to data collection by many government education organizations. In the United States, every state has its own unique homeschooling law (if it has a law at all). A few states that require homeschoolers to register do keep meticulous records. Some states are unable or unwilling to devote the resources necessary for consistent data collection and thus have records that vary widely between counties and by year. Many states, especially those that do not require homeschoolers to register their practice, keep no records at all (Carlson, 2020; Marks & Welsch, 2019). Despite these limitations, in recent years several quantitative studies of homeschooling in the United States have appeared (Bhatt, 2014; Cordner, 2012; Green-Hennessy, 2014; Hamlin, 2019; Hill & Den Dulk, 2013; Marks & Welsch, 2019; Miller, 2014; Snyder, 2013; Vieux, 2014).

A second limitation of the literature is political partisanship, particularly in the U.S. context. Happily, there is a move away from the advocacy disguised as research that characterized many of the most influential studies of the 1990s and early 2000s (e.g., Ray, 1997a; Ray, 1997b; Ray 2004a; Ray2004b; Ray, 2010; Rudner, 1999). Several factors are no doubt contributing to this shift, but three deserve special mention here. First, Brian D. Ray's National Home Education Research Institute (NHERI), which for decades was the dominant player in homeschooling research and the most visible proponent of research-based homeschooling advocacy, has become far less active in recent years even as university-based research has increased. NHERI's major studies were funded by the Home School Legal Defence Association (HSLDA), the Unites States' most powerful conservative Protestant advocacy organization. But HSLDA has lately shifted its efforts as part of its broader strategy to expand internationally and to

situate homeschooling within the broader school choice conversation. One illustration of this shift is the International School Choice and Reform Conference, which hosted its first annual meeting in 2013 and is sponsored by a number of choice-friendly organizations, including HSLDA. Another is the Global Home Education Exchange, a newer HSLDA initiative, which held its first conference in 2012 in Berlin and has held subsequent conferences in Brazil and Russia. Both of these conferences attract researchers and funding that is advocacy-oriented, but the international context, the transition to a new generation of more irenic HSLDA leaders, and the expanded range of topics have all tempered the rhetoric and tipped the scales a bit more toward the empirical (GHEX, 2020; ISCRC, 2020). Third, from within the homeschooling community itself has emerged a vocal group of activists and scholars who have offered a bracing critique of the methods and conclusions of advocacy research (Green, 2015; Ingersoll, 2015; Joyce, 2014; McCracken, 2014; Vicry, 2017).

HSLDA-funded studies are not the only examples of politicized homeschool research. Some university-housed academics who have published on homeschooling have come out clearly as critics of the approach (Apple, 2000; Balmer, 2007; Curren & Blokhuis, 2011; West, 2009; Yuracko, 2008). In recent years there have continued to be a few outright attacks, but for the most part normative pieces have been less inflammatory, arguing in measured tones for modest regulations of home education (Dwyer & Peters, 2019; Fineman & Shephard, 2016; Kreh, 2015).

In recent years, a third methodological limitation to homeschool research has emerged, one not sufficiently appreciated in many analyses of homeschooling's impact on academic achievement, socialization, and other outcomes. Most studies treat school attendance as a binary—students are either homeschoolers or not, with no distinctions drawn regarding the years they have spent homeschooled as opposed to conventionally schooled, and often no separate category of flexischooled children who combine both settings. But as noted in the Demographics section, it appears that many homeschoolers have also been conventionally schooled, and roughly half of current homeschoolers are actually flexischooled (Schafer & Khan, 2017).

This paper, like its predecessor (Kunzman & Gaither, 2013), aims to distil from this newer research the most reliable data and conclusions, to synthesize that with previous findings, and to arrange it all in a clear and compelling form. In so doing we hope to foster high calibre future work on one of the most dynamic contemporary educational trends. Our review aims for systematic treatment of the literature, derived from the most comprehensive bibliography ever assembled, carefully culled for quality. In doing so, we will address the following central questions:

- 1) What primary topics or themes are addressed in the literature?
- 2) How effective are the methodology and analysis performed?
- 3) What does the research reveal about homeschooling?
- 4) What questions remain unanswered?

Given the necessarily interpretive nature of these questions, the reader may be curious about our own positions. We are both academic students of homeschooling, fascinated by it as a social phenomenon and convinced of its significance as an educational movement. We are neither indiscriminate advocates for homeschooling nor unrestrained critics of the practice; we consider homeschooling a legitimate educational option, one that can result in exemplary growth or troubling neglect. Above all, we are interested in furthering accurate, empirically grounded knowledge of homeschooling in our own research and in the synthetic review we provide here.

# **II. Methodology**

As with the 2013 version, we collected and analyzed virtually the entire universe of English-language homeschool research and scholarship. New candidates for our review included 246 journal articles, 170 theses, 73 book chapters, 14 books, and 16 reports, which added 519 academic texts beyond the scope of our 2013 article and brought the full total of texts analyzed to more than 2,000. The complete list of texts we reviewed is available at www.icher.org/research, catalogued by author, date, format, and topic. Additions to our 2013 list were generated through numerous online databases, including ProQuest, Academic Search Complete, Lexus Nexus, Wilson Web, and ERIC, searching for terms such as homeschooling, unschooling, home education, and homeschooler. We used the reference lists from all of those texts to generate additional leads, then used the reference list from those texts, and so on, until we were confident we had virtually exhausted the extant body of literature. This edition of the review also included 13 texts from before 2013 that we had either missed or had become available after finalizing our first version.

From there, three primary criteria guided our decisions about what texts to include in our written review:

1) Quality of scholarship: Is the methodology sound? Does its design enable the author to answer the questions posed? Is the analysis well-supported by the data presented?

2) Significance or influence: Has the text been cited widely by researchers, policymakers, and even the popular media?

3) Distinctiveness: Does the research offer insight into a relatively unexamined aspect of homeschooling, or does its methodology explore the phenomenon from a new and potentially illuminating angle?

In some cases, all three criteria were met, but certainly not always. Some homeschooling research, for example, while not peer reviewed and having questionable methodological rigor, has had enormous influence both in terms of public perception and educational policy. In other cases, unpublished research that has gained relatively little attention is included in our review, such as a doctoral dissertation that offers unique insight into a facet of homeschooling previously unexplored by scholars. While we very rarely draw from websites, newspapers, and magazines, the only category we automatically excluded were "how to" books (thousands of these texts, written by and for homeschoolers, offer practical advice to parents).

From our review and analysis of these texts, we have identified nine general categories of homeschooling scholarship, and these topics shape the structure to follow. Our 2013 review employed only eight categories; since then, the research literature on parental motivation for homeschooling and the psychological and physical health of homeschoolers has grown significantly, and thus deserve their own distinct review sections; for this update, we also chose to dissolve "college/adulthood" as a separate section and instead merged them into academic achievement or socialization as appropriate. Section III begins our review by synthesizing what is known about homeschooling demographics (except for parental motivation) in the United States, both at the macro level and among various subgroups, including Christians, racial and ethnic minorities, and children with special needs. Section IV explores parental motivation for homeschooling. Section V examines U.S. homeschool curricula and practice. Section VI begins a threesection exploration of homeschooler outcomes, canvassing the literature on academic achievement. Section VII does the same for socialization, which includes the development of social skills as well as broader values formation. Section VIII reviews the growing literature on the psychological and physical health of homeschoolers, including the critical issue of child abuse. Section IX reviews the scholarship on U.S. homeschooling law at both the constitutional and statutory levels, and Section X explores the evolving relationships between homeschooling and public education in the United States, including virtual school options. Finally, Section XI surveys research on homeschooling outside the United States. While the vast majority of extant literature has been generated by U.S. scholars about the United States' experience, the category of "international homeschooling research" has expanded dramatically over the past ten years; we have chosen to retain the separate category as a way to underscore its distinctive contributions while also highlighting its growing influence on our understanding of homeschooling more broadly.

# **III. U.S. Demographics**

Comprehensive demographic data about homeschoolers remain difficult to obtain, largely because many states do not require participants to register, forcing researchers to rely on invariably incomplete datasets. This section will focus almost exclusively on the U.S. context; international homeschooling demographics will be addressed in Section XII. The most reliable estimates of homeschooler demographics in the United States are drawn from the Parent and Family Involvement Survey (PFI) as part of the National Household Education Survey (NHES). This instrument uses a rigorous random sampling design wedded to enormous sample sizes (14,075 in 2016) to obtain statistical data on many facets of children's education. The NHES-PFI was conducted in 1996, 1999, 2003, 2007, 2012, 2016, and 2019; data files from the 2019 survey will be released in September 2020.

The 2016 NHES data suggest that 1.7 million children were being homeschooled in the United States in 2016, which is not statistically different from the percentage in 2012 (Noel, Stark, & Redford, 2016; McQuiggan et al., 2017). This apparent halt to growth comes after dramatic increases since 1999, when the estimate totaled 850,000 homeschoolers (Bielick, Chandler, & Browman, 2001).

These stagnant homeschool numbers stand in contrast to homeschooling enrollment figures provided by individual states. The International Center for Home Education Research maintains an online archive of state enrollment data (icher.org/endata.html). Of the 23 states from which information is available, all but two document homeschooler growth, including substantial increases from nearly a third of reporting states.

It is possible that NHES data undercount overall homeschooler numbers. One potential cause could be a change in methodology; starting in 2012, the survey was conducted via postal mail instead of using landline telephones. As it turns out, however, overall response rates for 2012 were 78%, compared with 62% from the final phone survey in 2007. Overall response rates in 2016 were 74%, although only 61% of homeschool respondents completed the full survey process (National Center for Education Statistics, 2020).

Another possible cause for an NHES undercount could be related to the mindset of homeschoolers themselves. Ever since the National Center for Education Statistics began releasing and analyzing NHES data, some researchers have contended that homeschoolers are undercounted, due to their reluctance to respond to outsider queries, particularly those sponsored by the government (Belfield, 2004; Kaseman & Kaseman, 2002; Lines, 2000). But the growing social acceptance of homeschooling in recent years may have dampened or eliminated that effect. A 2009 statistical analysis by Bielick, Guzman, Atienza and Rivers for example, concluded that cooperation rates of homeschooling households were at least as high as the broader population. Similarly, McPhee et al. (2015) showed that response

rate differentials narrowed from 2003 until they were identical in 2012. But as noted above, the lower homeschooler response rate in 2016 at least makes this "homeschooler reluctance" thesis a continuing possibility.

And what about the state enrollment data showing widespread increases? It is important to recognize the many shortcomings of this source: states vary widely in their data collection practices, some relying on local school districts with their own inconsistent procedures, and other states relying on homeschooler volition with little or no enforcement. In addition, some states only track certain forms of homeschooling. Isenberg (2017) argues that Wisconsin, with its ease of reporting and minimal requirements, offers one of the most reliable state-level counts—with enrollment numbers that have remained essentially flat since 2003. Evidence from one such state doesn't constitute conclusive evidence, of course, but it may serve as a suitable counterweight against data from multiple states with inadequate collection practices.

It thus appears that the NHES remains our best source for large-scale U.S. homeschooler data (Isenberg, 2017). Nevertheless, as we consider further the demographic breakdowns it provides, it is worth noting that the smaller the subgroup, the less confidence we have in the estimates (Belfield, 2004). Perhaps the most obvious example of this involves homeschooler race/ethnicity. The 2007 NHES reported that 4% of homeschoolers were African American, about half of the consistent percentage across the rest of the 1999-2016 survey span. In 2007 the NHES reported that 10% of homeschoolers were Hispanic, and this number rose to 15% in 2012. Four years later the figure was 26%, even surpassing the percentage of Hispanic students in public schools (Snyder, de Brey, & Dillow, 2019). Perhaps the 2019 data will help us understand if these increases were statistical anomalies or accurately depict a shifting population. Despite the uncertainty that these dramatic oscillations engender, it seems clear that the overall homeschooler population has diversified significantly since the 1990s when white students comprised at least three-quarters of all participants. Nevertheless, it appears that homeschooling remains disproportionately white (59% compared to 50% of the total school-age population).

The 2016 NHES provided updates for other demographics as well. Homeschoolers were more likely to live in two-parent households (80%), and far more likely to have only one parent in the workforce; nevertheless, it is worth pointing out that a quarter of homeschoolers had both parents in the workforce. Homeschool parents reported roughly similar education levels as the general parenting population, although it is interesting to note that the percentage of homeschool parents without a high school diploma rose from 1% in 1999 to 15% in 2016. Smaller families appear increasingly represented in the homeschool population, with about half reporting less than three children. Homeschoolers were more likely to be rural (22%) than the broader school-age population (16%) (Snyder et al., 2019).

One statistic that often goes overlooked in the popular conception of homeschooling is the significant number of students whose education includes both institutional schooling and homeschooling. In many cases, for example, students supplement their homeschooling with public or private school classes, or local college coursework. This approach, sometimes called flexischooling, was examined by Schafer and Khan (2017), who found that a majority (55%) of homeschoolers were actually being flexischooled. This finding certainly pushes against the notion of homeschoolers as ensconced at home or lacking interactions with non-homeschoolers.

The field of homeschooling research could benefit from more sophisticated analysis of recent NHES data. As Isenberg (2017) observes, most datasets (including NHES) are cross-sectional and do not follow the same families over time. Nevertheless, multiple regression analyses of these data can provide valuable insights into the homeschooler population that challenge popular perceptions. For example, Isenberg (2007) found that more than half of homeschool parents in the 2003 survey sent at least one of their children to a conventional school, and more than one-third of homeschooled children returned to institutional schooling after the first year. Besides the flexischooling research mentioned above, few studies have engaged in these kinds of quantitative analyses despite the insights they may offer.

One of the few stereotypes of homeschooling that appears to hold true across demographics is that mothers are responsible for most of the home instruction—in 78% of families, according to the 2016 NHES, a statistic buttressed by numerous smaller-scale studies (e.g., Lundy & Mazama, 2014; McDowell, 2000; Morton, 2010; Stevens, 2001). In Lois' (2010, 2013) ethnographies of homeschool motivations and practices, she finds that homeschool mothers experience intense role strain, which can lead to emotional burnout (see also Sherfinski & Chesanko, 2014). They often strive to manage this challenge by viewing homeschooling as a "season" of life which requires outsized devotion but reaps outsized rewards. When outsiders accuse them of being socially overprotective and relationally hyperengaged, mothers in turn question whether contemporary U.S. culture values protective nurturing and close family relationships enough.

The role of women in conservative religious homeschooling has received significant scholarly attention. The disproportionate sacrifice required of mothers in the homeschooling endeavor—and the helpmeet role that women are often expected to inhabit and endorse—raise questions for some observers about gender oppression and inequitable educational opportunities (Joyce, 2009; MacFarquhar, 2008; McDannell, 1995; Talbot, 2000; Yuracko, 2008). This is not to say that men play essentially no role in the homeschooling endeavor; even when they are not involved in direct instruction, opportunities exist for husbands to provide support in a variety

of ways, and some appear to do so (Lois, 2006; Vigilant, Trefethren, & Anderson, 2013). Other scholars, while acknowledging the disproportionate demands frequently placed upon homeschooling mothers, suggest that these women often embody and encourage a different kind of feminism, one that shapes not only the future of their families but also the homeschooling movement as a form of resistance to contemporary culture (Apple, 2006; McDowell, 2000; Stevens, 2001).

#### IV. Motivation

One of the most popular, abiding concerns of homeschool research is the motivations of the parents who engage in the practice. From the 1980s on, many researchers have utilized a dichotomy first articulated by Jane Van Galen in 1986. In her doctoral dissertation and in several subsequent works she identified a group of conservative Christians who homeschooled for ideological reasons, and another group of progressive, child-centered parents who homeschooled for pedagogical reasons (Van Galen, 1986, 1988). Her dichotomy was rendered canonical in one of the most widely cited articles of the pre-2000 literature (Knowles, Marlow, & Muchmore, 1992). Several subsequent scholars rejected Van Galen's terminology for various reasons, but the basic finding that one group of homeschoolers does so out of a desire to pass on a particularistic, usually religious, vision to their children, and another chooses it as an anti-modern gesture of protest against institutionalism, credentialed expertise, and the regimentation of childhood, has held up over time (Cai, Reeve, & Robinson, 2002; Gaither, 2017; Hanna, 2012; Keys & Crain, 2009; Neuman & Guterman, 2019a; Stevens, 2001). Despite the differences between these two groups, both tend to share certain assumptions, most notably a hermeneutic of suspicion toward government and professional expertise (Gaither, 2017; Khalili & Caplan, 2007), though there is some evidence that at least among some homeschoolers this attitude has moderated somewhat (Cordner, 2012; McDonald et al., 2019; Thorpe, Zimmerman, Steinhart, Lewis, & Michaels, 2012).

On the other hand, scholars from several countries have independently found a significant group of home educators who do not fit either the conservative religious stereotype or the pedagogical romantic stereotype. These homeschoolers are motivated not by conviction but by situational pragmatics, especially a child's unique educational or health needs (Coleman, 2010; Gregory & Purcell, 2014; Jolly & Matthews, 2018; Kostelecká, 2010; Morton, 2010; Neuman & Guterman, 2019a; Winstanley, 2009). This third group of women (almost all homeschool planning and instruction is done by women) only choose homeschooling as a last resort, after all other options have been exhausted, though some of them, as we shall see, shift over to one of the other two categories over time (Lois, 2017).

The most recent NCES data found that when asked to choose their most important reason for homeschooling, 34% of the sample chose dissatisfaction with the environment of schools, 17% chose dissatisfaction with academics at schools,

and 16% chose the desire to provide religious instruction. When allowed to select multiple reasons, 80% were dissatisfied with school environment, 67% wanted to provide moral instruction, 61% were dissatisfied with school academics, and 51% wanted to provide religious instruction (McQuiggan et al., 2017). Many, many small-scale studies of parental motivation have produced long lists of potential motivations extending beyond the NCES options or Van Galen and her interlocuters. Two researchers, Spiegler of Germany and Murphy of the United States, conducted meta-analyses of the survey literature, and each independently reduced it all to the same four categories. Though their terminology differs slightly, both meta-analyses found that homeschoolers, when asked to choose from a prefabricated list of options, tend to say that they homeschool for one or more of four possible reasons: religious or moral formation, academic concerns, concerns for child safety, and desire to strengthen family bonds (Murphy, 2012; Spiegler, 2010).

While the four rationales of Spiegler and Murphy nicely synthesize the findings of the survey-based motivation literature, several researchers have pointed out that the methodology used in these studies cannot capture such a complex and dynamic thing as motivation (Neuman & Guterman, 2019a; Spiegler, 2010). Prefabricated lists of motivations from which parents are asked to choose require them to accept "the researcher's worldview and find a place for themselves" within it. They also cannot capture motivational shifts over the homeschool life course (Neuman & Guterman, 2019a, p. 194; Spiegler, 2010). Qualitative scholarship has been able to address these concerns.

The first and perhaps most significant category of findings to emerge from this literature is that parental motivation is not stagnant. It can change over time, in at least five ways. First, many parents originally turn to home education as a "second choice," because they are unhappy with some aspect of formal schooling (Lois, 2013, p. 47). Their original motivation was thus a push away. But over time they come to appreciate the goods home education provides their children and their families, and they cite those newfound pulls as motivations (Dobson, 2000; Pannone, 2017; Resetar, 1990; Rothermel, 2011). Second, a large percentage of families homeschool only one of their children, or move a child or children in and out of school as mothers deem necessary, decisions that are reevaluated regularly given changing family and child circumstances (Isenberg, 2006; Miller, 2014). A third way motivation can change, some research has found, is that a gradual softening in ideology can develop over time as children age, especially among fathers with daughters (Kunzman, 2009a; Montes, 2006). Fourth, and the inverse of the previous point, a repeated finding of the literature has been that for some families the original decision to homeschool introduces them to a new subculture of which they had not previously been aware (Coleman, 2010; Collum, 2005; Safran, 2010). Safran identified this tendency as "legitimate peripheral participation," by which she meant that new homeschoolers gradually move, through participation in homeschooling networks, from the periphery to the center of movement identity (Safran, 2010, p. 107; Lave & Wenger, 1991). Fifth, the act of choosing to homeschool itself can change the way a mother talks about her motivations. Once the decision has been made, there is strong psychological pressure to self-justify. Mothers do not want to think that they might have made a bad decision, so they tend to describe their experiences in very positive terms to researchers and to come up with all sorts of post hoc motivations that might not have existed originally (Harding, 2011; Lees, 2011; McKeon, 2007; Neuman & Guterman, 2019a).

A second category of findings of the motivation literature are several contextual factors that are often not explicitly articulated by research subjects as motivations but are present nonetheless, even if homeschoolers themselves are not conscious of them. For example, several researchers have found that many parents choosing homeschooling for their children had negative experiences themselves as children in institutional schools. These past experiences have contributed to a more negative view of institutionalized schooling than is typical of the population (Arai, 2000; Gray & Riley, 2013; Knowles, 1988, 1991; Morrison, 2016; Neuman, 2019; Wyatt, 2008). Likewise, gender seems to play a substantial role in the type of motivation present. Several studies have found that mothers, who do almost all of the actual homeschooling, are motivated more by their identity as mothers than by ideology (Aurini & Davies, 2005; Beláňová, Machovcová, Kostelecká, & McCabe, 2018; Lois, 2013, 2017; Newman & Guterman, 2019a; Stambach & David, 2005; Stevens, 2001). Fathers, on the other hand, while they do hardly any of the actual homeschooling, often speak in aggressively ideological terms about their family's commitment to the practice (Lois, 2017; Sherfinski, 2014; Vigilant et al., 2013; Vigilant, Anderson, & Trefethren, 2014). Community context matters too, though the data here are mixed. In analyses of state-level data in Kentucky and Wisconsin, the most likely scenario to results in homeschooling is a well-educated, white mother living in a community with a lot of socioeconomic diversity, with poorquality (often racially diverse) public schools and no good private options. That same woman, were she living somewhere with a more homogeneous population, better local public schools, and more abundant private options, would probably not have chosen to homeschool (Houston & Toma, 2003; Isenberg, 2007; Marks & Welsch, 2019). In contrast, a sophisticated statistical analysis of data in Virginia found that homeschooling in that state was more likely to be chosen in more rural. wealthy, conservative communities with many private school options, good local public schools, and few poor children in the district, strongly suggesting that in Virginia at least, conservative Protestant ideology has been the true driver of homeschooling growth (Miller, 2014).

A recent article by the prolific duo of Neuman and Guterman used a creative methodology that avoided imposing pre-fabricated motivational categories or

assuming that motivation was a constant. From lengthy, open-ended interviews with 25 Israeli homeschooling mothers asked to narrate why they started homeschooling and why they still do so, the researchers derived four "super themes" that nicely synthesize all of the previous motivation literature. Their first super theme, "educational situation," is very similar to Van Galen's pedagogical motivation. Their second, "deliberate change," captures Van Galen's "ideologue" category without constructing an unnecessary binary or associating ideology only with religious conservatism. The third super theme, "opportunity," captures the insight that for many mothers, homeschooling was not a first choice but was chosen because of the educational ecology and the specific circumstances of the mother and child involved (Coleman, 2010; Kendall & Taylor, 2016; Lois, 2013; McDonald & Lopes, 2014; Morton, 2010). The fourth and final super theme, "flow," captures the insight that for many mothers, homeschooling was not a deliberate choice at all but emerged as a natural extension of and complement to other aspects of their family lives (Allahyari, 2012; Lois, 2013; Morrison, 2016). The first two motivations are cognitive choices. The second two, however, are not about choice but about "randomness and lack of planning" (Neuman & Guterman, 2019a, p. 202-203).

A final topic not addressed thus far and not synthesized in the Neuman and Guterman typology concerns the motivations of minority groups. African Americans are by far the most studied homeschooling minority in the United States, with somewhat conflicting conclusions reached depending on the race of the researchers and the networks of homeschooling African Americans captured in the research. In a pioneering 2009 study, Fields-Smith and Williams found that for their sample of 24 black families religious and racial motives were pervasive and intermixed, race especially so for mothers of black boys (Fields-Smith & Williams, 2009). In a 2013 article Fields-Smith and Kisura found that for their sample of 44 black families, both racial push factors (especially the low expectations in schools for black boys) and pull factors (Afrocentric curriculum and more racially diverse homeschooling groups) joined with religion as motivators (Fields-Smith & Kisura, 2013). In a series of articles beginning in 2012 and culminating in a 2015 book, Mazama and Musumunu found that for their geographically-diverse sample of 74 black homeschooling families, the theme of "educational protectionism," or the effort to spare children from racist experiences in schools and to provide positive racial and intellectual experiences through homeschooling, featured prominently (Mazama & Lundy, 2012, 2013; Mazama & Musumunu, 2015). In contrast to these findings by African American researchers, Ray, a white researcher with longstanding and deep ties to the conservative Protestant heart of homeschooling activism, found in his sample of 81 African American homeschooling families that only 20% cited concerns about racism in schools as a push factor, and only 40% stressed African American culture as a pull for homeschooling (Ray, 2015).

The explanation for this disparate finding comes from Mazama and Musumunu, who in a 2014 article explained that fifteen percent of their sample looked very different from the other eighty-five percent. This small subset of African American homeschoolers rejected the dominant race-consciousness narrative of most black homeschoolers and expressed motivations just like those of their white fundamentalist peers (Mazama & Lundy, 2014). Ray, whose recruitment of subjects depended on his fundamentalist network, likely oversampled from this subset of African American homeschoolers. Black researchers with closer ties to Afrocentric networks were able to capture more race-conscious (yet still deeply religious) African American homeschoolers and more homeschooling single mothers, some living in poverty (Fields-Smith, 2020).

Other minorities and their motivations have received far less attention. The most arresting gap, given the 2016 NHES findings about some 26% of homeschoolers being Hispanic, is the lack of scholarship of any kind on Latinx homeschooling (Fields-Smith, 2017). Very little has been written as well about religious minorities such as Muslims or about other ethnic and racial groups who are homeschooling (English, 2016; Fields-Smith, 2017).

One group about whom more is known is the minority who choose homeschooling due to a child's special needs, be it a learning disability, a medical or psychological condition, or giftedness. According to the 2016 NHES survey, some 34% of homeschoolers claim this as at least one of their motivations (McQuiggan, et al., 2017). Scholarship studying this group has consistently found that mothers who choose the option do so only as a last resort out of frustration with their child's treatment by the school system. This push often becomes a pull, however, as mothers find that homeschooling's flexibility allows their children to flourish. The data here are anecdotal, usually consisting of small-scale qualitative studies of convenience samples, but their consistency is at least suggestive (Hurlbutt-Eastman, 2017; Jolly, Matthews, & Nester, 2012; Jolly & Matthews, 2018; Kidd & Kaczmarek, 2010; Simmons & Campbell, 2019; Winstanley, 2009).

### V. Curricula and Practice

Two factors have made it difficult to study the actual practice of homeschooling. The first is the variety of approaches that fall under the homeschooling umbrella (Neuman & Guterman, 2017). The second is the difficulty researchers have obtaining access to the homes of homeschooling families. In recent years progress has been made on both counts. Classification of practices has grown more nuanced and empirical, and the increasing number of former homeschoolers attending graduate school have resulted in a more robust look at life on the inside. Much of this literature remains anecdotal, based on small convenience samples, but taken as a whole it is in a much better place now than when we reported on it in 2013.

A recurring finding of the early literature was the distinction first articulated by Van Galen between a large group of ideologically conservative, religiously motivated homeschoolers who employed what one researcher called "a significantly more controlling motivating style" than found in most public schools on the one hand, and a smaller group of more romantic homeschoolers using a more childcentered, liberatory pedagogy (Cai et al., 2002, p. 377; Hanna, 2012; Keys & Crain, 2009; Stevens, 2001; Van Galen, 1986, 1988). That dichotomy, while still relevant in many domains of homeschooling, seems less so today when examining what actually happens inside of the home (Gann & Carpenter, 2019; Lois, 2013; McKeon, 2007). It is increasingly clear that homeschooling happens along a continuum between the formal and the informal both in terms of curricular content and pedagogical process (Neuman & Guterman, 2017; Taylor-Hough, 2010). It is also becoming clearer that homeschooling mothers shift pedagogically over the course of their careers and across the age span in several ways.

The first way they do so, and one of the most consistent findings of research on homeschooling practice, is that after a year or two of assiduous effort to mimic formal schooling at home, new homeschooling mothers gradually move toward a less-structured, more eclectic approach (Bell, 2012; Charvoz, 1988; Gann & Carpenter, 2019; Gray & Riley, 2013; Holinga, 1999; Knowles, 1988; Kraftl, 2013; Lois, 2006, 2013; Pattison, 2016; Stevens, 2001; Sheng, 2019). Why? Lois, who embedded herself within a community of homeschooling mothers for three-and-ahalf years, found that this shift enabled mothers to cope with the added responsibilities with which homeschooling burdened them. Letting go of control and reducing expectations of progress helped these mothers avoid burnout and manage their time (Lois, 2006, 2009, 2013). The eclectic model also recognizes that all family interactions, even the informal and spontaneous, become educational opportunities (Bachman & Dierking, 2011; Barratt-Peacock, 2003; Kraftl, 2013; Thomas, 1994).

Secondly, over time mothers diversify quite a bit. In a rare longitudinal study of 225 homeschooling families in Pennsylvania drawn from a wide geographic range, Hanna found that over the course of the 10 years between the two phases of her study (1998 and 2008), mothers dramatically increased their reliance on technology, on prepared curriculum, on local resources like public libraries, on cooperatives and other more institutional forms of education, and on outside expertise for their aging children (Hanna, 2012). Similarly, Burke and Cleaver found that over the life span, home educating mothers tend to move from more intimate "child-led" learning experiences between mother and small child to more "resource-led" experiences with their older children, incorporating more outsourcing and collaboration into their mix (Burke & Cleaver, 2019; Burke, 2019).

Increasingly, homeschooling research is investigating these spaces outside the home. Researchers have distinguished between three sorts of extra-home educative

opportunities. Most informal are support groups, which can happen anywhere (including online) and at any time and tend not to have any sort of itinerary. More formal are timetabled groups, where homeschooling families get together at a regularly-designated time and location but for more informal resource-sharing and conversation (Anthony, 2015; Safran, 2009). Yet more formal are co-ops, which function quite a bit like schools, with regular classes taught by parents or hired experts in a local building with multiple classrooms (Anthony, 2015; Muldowney, 2011). According to the 2016 NHES survey, some 31% of homeschoolers receive at least some of their instruction at a local co-op (Cui & Hanson, 2019, p. 10). A massive though not representative survey of 3,702 formerly homeschooled young adults found that 75% of respondents had participated in a co-op at some point in their homeschooling years (Coalition for Responsible Home Education, 2015). Mothers appreciate these co-ops, which typically are held weekly or bi-weekly, because they provide a structure for the rest of the week's schooling and assistance with subject matter in which the mother might not be expert, while children like them for the opportunities to socialize with other children and to study subjects they might struggle with in the nuclear family setting (Anthony & Burroughs, 2012; Anthony, 2015; Gaither, 2017). Additionally, homeschool groups often serve as ideological sorters, with the largest and most high-profile groups frequently requiring leaders, and sometimes all members, to sign statements of faith affirming sectarian principles. This situation has produced a good bit of tension within the homeschooling world (Gaither, 2017; Muldowney, 2011; Stevens, 2001).

Public resources are increasingly popular among homeschoolers. Libraries have long been favourite spots, not only because of the free materials and activities but also because they get everyone out of the house (Furness, 2008; Pannone, 2019). Hybrid programs such as part-time enrollment in public school classes, participation in public school extracurricular activities, and dual-enrollment or enrichment classes at local universities have become increasingly available to homeschoolers in many states and have all been studied, though typically at the local and episodic level rather than systematically (Gaither, 2017; Hercules, Parrish, & Whitehead, 2016; Johnson, 2013; Wachob, 2016). More systematic research into these and other enrichment opportunities is needed, not least because quantitative data from the National Household Education Survey suggest that nearly 40% of homeschooling households are not offering instruction in music, the arts, or foreign languages (Hamlin, 2019).

Whatever their pedagogical approach or degree of dependence on outside resources, homeschoolers have available a wide range of curricular options. These exist along a continuum from complete "school in a box" curricula available for purchase to "unschooling," which aims to have learning be entirely child-directed, free of any external imposition (Coleman, 2010; Gaither, 2017; Gray & Riley, 2013; Taylor-Hough, 2010). For those looking for complete curricula, the most

popular historically have been Accelerated Christian Education (ACE), A Beka, and Bob Jones Complete, all created by and for the conservative Christian subset (Jones, 2008; Laats, 2010). A 2015 survey of 3,702 former homeschoolers identified the most popular curricula used by this largely Christian-raised group to be Saxon Math (used by 74%), A Beka (69%), and Bob Jones (50%) (Coalition for Responsible Home Education, 2015). Other options for parents looking to replicate the formal schooling experience include correspondence programs and umbrella schools, which likewise provide a complete curriculum along with access to supports like teachers, grading services, guidance counselling, standardized testing, and diplomas (Gaither, 2017; Taylor-Hough, 2010).

As homeschooling grew and matured in the 1990s and beyond, curricular options proliferated. In the 1990s and early 2000s the primary ways curriculum providers accessed their customers were through Christian bookstores and especially conventions or curriculum fairs, some of which by the late 1990s had attendance in the thousands (Gaither, 2017; Kunzman, 2009a; Lunsford, 2006). One systematic study of U.S. homeschooling conventions found that by 2004 there were 74 conventions in the United States enjoying single-day attendance of over 600 (Lunsford, 2006). At many of these, homeschoolers could browse the products of 100 or more vendors. Yet in recent years the conference scene has been transformed, partly due to a decline in the most aggressively sectarian wing of the movement, but more dramatically because of the disruption caused by the internet (Gaither, 2017). Hanna's (2012) 10-year longitudinal study found that between 1998 and 2008 the daily lives of most of her 250 subjects changed profoundly due to a dramatic spike in reliance on the internet both for social networking and for curricula. A 2018 quantitative and qualitative study of 316 homeschoolers found pervasive use of technology for every aspect of homeschooling, from curriculum and instruction for the child to social, emotional, and professional support for the parent (Pell, 2018).

Amidst the increasing curricular options, two that have garnered significant scholarly attention are the so-called "classical" curriculum, whose organizing principle is an adaptation of the Medieval Latin trivium, and "unschooling," the hands-off, child-centered approach popularized by John Holt in the late 1970s. Studies of the classical approach have recounted its history, from its beginnings in an address given by Dorothy Sayers in 1947, through its popularization by Douglas Wilson in the 1980s, to its growth into a major player in the Christian day school and homeschooling movement today (Leithart, 2008; Sherfinski, 2014). Hahn's online survey of 349 classical homeschoolers found that 30% of them turned to coops for instruction in Latin (Hahn, 2012). Anthony and Burrough's study of one such co-op found that though the members self-identified as conservative and religious, the pedagogy employed by the co-op, with its emphasis on critical thinking, journaling, use of primary sources, and a preference for portfolios over

grading, was actually quite progressive (Anthony & Burroughs, 2012). A consistent finding is that the families choosing this curricular approach do so not out of a pure love of classicism but because they believe its rigor will prepare their children well for college (Anthony & Burroughs, 2012; Hahn, 2012; Sherfinski, 2014).

The research on unschooling is fraught. A good bit of it has been conducted by outspoken advocates, whose samples, drawn from networks of the like-minded, have tended to reflect well on the practice. Thomas and Pattison's sample of 26 families engaging in what they call "osmotic learning" finds that these families are practicing Deweyan pedagogy, which allows their children to remain creative and curious about the world as more formal approaches do not (Thomas & Pattison, 2013). Gray and Riley's survey of 232 unschooling parents found that parents choosing this approach are motivated more by fostering their children's autonomy and intrinsic motivation than by social conventions such as high test scores (Gray & Riley, 2013). A follow-up interview with 75 young adults who had been unschooled found high rates of college attendance, satisfaction with their previous educations. and a preference for careers that were meaningful and enjoyable rather than high paying (Gray & Riley, 2015a; Gray & Riley, 2015b). On the other hand, some scholars without a personal stake in the unschooling project have identified problems with the approach. There is some evidence that unschooled children underperform on academic assessments (Martin-Chang, Gould, & Meuse, 2011; Martin-Chang & Levesque, 2017). Green-Hennessy, in a rigorous analysis of data from the National Survey on Drug Use and Health, found that less religious, potentially less structured homeschooling correlated with much higher rates of drug use, delinquency, social isolation, and poor academic performance (Green-Hennessy, 2014). Other researchers counter that unschooling parents are not interested in such metrics and that it is hence illegitimate to use measures they reject to appraise their success (Neuman & Guterman, 2016a; Pattison, 2015).

#### VI. Outcomes: Academic Achievement

The subject of homeschooler academic achievement has received much scholarly attention. Unfortunately many of the largest and most widely-cited studies contain serious design flaws that limit their generalizability and reliability. From 1990 to 2010 five large scale studies of academic achievement were conducted under the sponsorship of HSLDA (Ray, 1990, 1994, 1997a, 1997b, 2010). These studies all relied for their data on samples of homeschoolers recruited for the purpose. Volunteers were asked to submit demographic data as well as the results of one or more group of standardized test scores, with promises made that the research would be used for homeschooling advocacy. These self-reported scores (from tests that were typically proctored by the parent in the home) were then compared against national averages and the results reported. In every case homeschooled students consistently scored in the 80th percentile or above on nearly every measure. Many

journalists and not a few researchers have cited these studies to claim that homeschoolers outperform public schoolers on tests or go on to remarkable success in adulthood (Ray, 2017; Van Pelt, 2015).

The most widely cited such study in the history of homeschooling research is undoubtedly Lawrence Rudner's 1999 "Achievement and Demographics of Home School Students." Conceived and commissioned by HSLDA, it derived its massive sample (20,760 subjects) from the Bob Jones University Press Testing and Evaluation Service, a popular fundamentalist Protestant homeschooling service provider. Parents for the most part administered the tests (Iowa Tests of Basic Skills or Tests for Achievement and Proficiency) themselves, but in this case the results were reported directly to Rudner by Bob Jones University. Parents also completed a demographic questionnaire, and the results showed a sample far whiter, more religious, more married, better educated, and wealthier than national averages. Students performed on average in the 70th to 80th percentile on nearly every measure. Rudner's text is full of qualifications and cautions, stating very clearly. "This study does not demonstrate that home schooling is superior to public or private schools. It should not be cited as evidence that our public schools are failing. It does not indicate that children will perform better academically if they are home schooled" (Rudner, 1999, p. 29).

Despite such disclaimers, Rudner's study has been and continues to be cited uncritically in the popular press, in advocacy-motivated homeschool research, and even in otherwise non-partisan research as demonstrating that homeschoolers outperform public schoolers on standardized tests. This is the case despite multiple efforts by various scholars to emphasize that these studies of academic achievement do not employ random sampling nor do they control for confounding variables (Belfield, 2005; Dumas, Gates, & Schwarzer, 2010; Haan & Cruickshank, 2006; Lubienski, Puckett, & Brewer, 2013; Saunders, 2009-2010; Welner & Welner, 1999). The Rudner study remains "perhaps the most misrepresented research in the homeschooling universe" (Kunzman, 2009a, p. 97).

No other studies of academic achievement command the same impressive sample sizes of those of Ray and Rudner just described, but several smaller-scale studies do at least control for family background variables. One generalization that emerges from many smaller studies on academic achievement is that homeschooling actually does not have that much of an effect on student achievement once family background variables are controlled. This conclusion is implicit even in many of the HSLDA-funded studies, which consistently have found no relationship between academic achievement and the number of years a child has been homeschooled (Ray & Wartes, 1991; Ray, 2010). In other studies it is more explicit. A 1994 study of 789 first year students at a Christian liberal arts college found no significant difference on the California Critical Thinking Skills Test between students who had been homeschooled and those attending conventional schools (Oliveira, Watson, & Sutton, 1994). A 2004 survey of 127 seniors at a diverse suburban public high school categorized subjects by the degree to which their parents were involved in their learning. Students from the "high parent involvement" cohort scored significantly higher on the ACT than students reporting low levels and exactly the same as homeschoolers taking the ACT (Barwegen, Falciani, Putnam, Reamer, & Star, 2004). A 2005 study comparing all self-identified homeschoolers who took the 2001 SAT (n=6,033) with public and private schooled SAT takers found that when family background is controlled for, "there is not a large gap between the scores across school types" (Belfield, 2005, p. 174).

A second consistent finding of these studies over the past 30 years is that homeschoolers tend to perform better on verbal tests than they do on mathematics assessments. Frost and Morris (1988) found in a study of 74 Illinois homeschoolers that, controlling for family background variables, homeschoolers scored above average in all subjects but math. Wartes, similarly, found that homeschoolers in Washington State scored well above average in reading and vocabulary but slightly below average in math computation (Ray & Wartes, 1991). The HSLDA-sponsored studies also found that homeschoolers do comparatively less well in math than in language-based subjects (Ray, 1997a; Rudner, 1999). Likewise Belfield (2005), in a well-designed study that controlled for family background variables, found that homeschooled seniors taking the SAT scored slightly better than predicted on the SAT verbal and slightly worse on the SAT math. A similar study of ACT mathematics scores likewise found a slight mathematical disadvantage for homeschoolers (Quaqish, 2007). An analysis of testing data by the state of Arkansas, which until 2008 required that homeschoolers take standardized tests in many subjects, showed that the overall homeschooling average was a bit higher than the overall public school average on every subject but math, where it was a bit lower (Lazerus, 2017). An analysis of 2012 data from Alaska's nearly 11,000 homeschoolers who participated in that state's correspondence school program and were required as a condition of receiving government aid to take state standardized tests, likewise found that homeschoolers performed about the same as public schoolers in reading once economic background was controlled, but even with those controls in place they performed worse in math (Coleman, 2014a). Given this persistent corroboration across three decades we might conclude, tentatively, that there may be at least a modest homeschooling effect on academic achievementnamely that it tends to improve students' verbal skills and weaken their math capacities. Why? Answers here are only speculative, but it could be that the conversational learning style common to homeschooling and the widely-observed phenomenon that homeschoolers often spend significant time being read to or reading all contribute to their impressive verbal scores, while math is not given the same priority because homeschooling mothers are often not as strong in that subject (Anthony & Burroughs, 2012; Frost & Morris, 1988; Kunzman, 2009a; Pattison, 2016; Thomas & Pattison, 2008).

An important caveat to both of these findings, that homeschooling has little effect or perhaps gives a slight boost to reading and a slight diminution to math achievement, comes from studies of children at the extremes. At the high end, Yusof (2015) identified a subset of informally-educated, high-achieving homeschoolers who enjoyed and were very good at math. Wilkens, Wade, Sonnert, and Sadler (2015), likewise, using data from the 2009-2010 Factors Influencing College Success in Mathematics survey (N=10,492 representing 134 institutions), found that homeschooled students outperformed their demographic peers in Calculus I as first-year students.

At the other end of the achievement spectrum, Green-Hennessy (2014), in a powerful analysis of data from the National Survey on Drug Use and Health for the years 2002-2011 (N=182,351), found that homeschoolers age 12 and up were two to three times more likely than their public-school equivalents to report being behind grade level. Similarly, an analysis of data from Alaska's popular correspondence school program covering the years 2010 to 2017 found that home educated correspondence students had significantly lower graduation rates than students in public schools (Wilkens & Kalenda, 2019). While much more research needs to be conducted, these studies at least hint at the possibility that the normal curve of homeschooler academic achievement may have a wider distribution spread than that of students attending institutional schools. This might, of course, have nothing to do with homeschooling itself but with the decisions of parents whose children fall nearer the poles of academic achievement. As Green-Hennessy (2014) notes, homeschooled children behind grade level "may well be struggling academically before homeschooling commences" (p. 446). Green-Hennessy's speculation was given empirical validation in Coleman's analysis of Kentucky's Office of Education Accountability's 2018 report on homeschooling. In Kentucky and other states, a significant number of families and schools are using homeschooling as a "dropout loophole" for at-risk children (Coleman, 2019).

One obvious reason for the potential finding that homeschooling heightens performance at the extremes of the distribution curve is that it by definition magnifies the role of the parent in a child's education. A consistent finding in the literature on academic achievement is that parental background matters a lot. Belfield (2005) found greater variance in SAT scores by family background among homeschoolers than among institutionally-schooled students. Boulter's (1999) longitudinal sample of 110 students whose parents averaged only found a consistent pattern of gradual decline in achievement scores the longer a child remained homeschooled, a result she attributed to the relatively low levels of parent education in her sample. Medlin's (1994) study of 36 homeschoolers found a significant relationship between mother's educational level and child's achievement score.

Kunzman's (2009a) qualitative study of several Christian homeschooling families found dramatic differences in instructional quality relative to parent educational background. Coleman's (2014a) analysis of data from the state of Alaska likewise found significant correlations between family economic background and test scores.

But what about the long-term academic impacts? How do homeschoolers do in college and career? There has been much scholarship on the performance of homeschoolers in college, though most such studies are convenience samples taken from the researcher's own university. Several studies have found that homeschoolers outperform their institutionally schooled peers with similar demographic backgrounds on grade point average. Cogan (2010) found this at a Midwest doctoral institution. Jenkins (1998) found it at a community college. Three studies have found the same at private Christian colleges (Holder, 2001; Snyder, 2013; White et al., 2007). Jones and Gloeckner (2004a) found it as well, though the difference in their study was not statistically significant. A few studies have found no difference in grade point average between a college's homeschooled students and others. This was the conclusion reached by a study at a conservative Protestant college (Bennett, Edwards & Ngai, 2019) and by an analysis of 2009-2011 College Board data from 140 institutions of higher education (Yu, Sackett, & Kuncel, 2016).

Studies of other academic variables have found little to no difference between college students who were homeschooled and those who attended traditional schools. Studies of student retention and graduation rates have found no difference (Cogan, 2010; Jones & Gloeckner, 2004a; Yu et al., 2016). A study of financial literacy at a conservative Christian college found no difference (Wright, 2016). Sutton and Galloway (2000), likewise, found no statistically significant difference between groups of homeschooled, private schooled, and public schooled college students on 33 of 40 measures of college success. The one category where homeschoolers tended to outperform their peers from other schooling backgrounds was campus leadership—homeschoolers were significantly more involved in leadership positions for longer periods of time. The qualitative studies have largely found the same-that previously homeschooled college students transition well to college and do well in college (Smiley, 2010). One longitudinal qualitative study that followed five students from 2005 to 2010 found that many socioeconomic and life course variables impacted their overall success in college, but previous homeschooling was not one of them (Bolle-Brummond & Wessel, 2012).

Two additional insights emerge from the literature on homeschoolers' academic achievement in college. The first concerns admissions, both the attitudes of admissions staff toward homeschooling and the policies or lack of policies that institutions of higher education have for homeschooled applicants. Most of this literature is quantitative, consisting for the most part of surveys of admissions officers. The consistent finding of such studies is that homeschooled applicants are accepted at roughly the same rates as their conventionally schooled peers, that

admissions staff generally expect homeschoolers to do as well as or better than their conventionally schooled peers in college, and that while colleges and universities welcome homeschooled applicants, most do not go out of their way to provide special services or admissions procedures for them (Duggan, 2010; Gloeckner & Jones, 2013; Haan & Cruickshank, 2006; Jones & Gloeckner, 2004b; Sorey & Duggan, 2008).

A second insight has to do with curricular experiences and choices. Two studies have found that homeschooled first-year college students often struggle more than their conventionally schooled peers with the task of writing research papers. This may be partly because many homeschooling families do not stress research-based writing very much in the lower grades and partly because many conservative Christian homeschoolers have a difficult time learning how to write for a secular audience using secular argumentation and sources (Holder, 2001; Marzluf, 2009). These same studies found that over time homeschoolers were able to catch up to their peers and eventually produce capable writing that adhered to the standards of the secular academy. The same does not seem to happen with mathematics. An analysis of two 2010 studies conducted internally by Austin College in Texas and Grove City College in Pennsylvania found that, while homeschoolers had higher grade point averages (GPAs) overall, their math GPAs were lower than those of college students who had attended formal institutions. Similarly, homeschoolers were far less likely to major in science, technology, engineering, and mathematics-based disciplines (Coleman, 2014b).

All of this research on the lives of homeschooled college students, as helpful as it is, masks one profound insight that emerges from some of the larger-scale quantitative studies using representative samples: very few homeschoolers take the SAT or ACT or go on to attend selective four-year colleges and universities (Coleman, 2014b; Sikkink & Skiles, 2015, 2018; Yu et al., 2016). Studies of homeschoolers in college are thus not capturing the post-homeschool experiences of most homeschooled children.

A considerably less flattering portrait of higher education and employment experiences among the homeschooled has emerged from the Cardus Education Surveys (Pennings, Seel, Van Pelt, Sikkink & Wiens, 2011; Pennings, Sikkink, Van Pelt, Van Brummelen, & von Heyking, 2012; Sikkink & Skiles, 2015, 2018). To date the survey has been run three times; twice in the United States and once in Canada. For each phase the researchers used a representative sample of the national population. In 2011 the first U.S. phase reported results from about 1,500 young adults, age 24-39. In 2012 the Canadian study reported results from 2,054 young adults, also age 24-39. In 2014 the second U.S. phase reported results from 1,500 young adults in the same age range. In each case the survey captured enough young adults who had been homeschooled through high school to make meaningful comparisons with their peers who had attended public or private schools. In every

phase of the study, formerly homeschooled young adults reported lower SAT scores than the privately schooled subjects, attended less selective colleges for less time, and ended up working in jobs for lower pay than graduates of other forms of schooling (Sikkink & Skiles, 2015, 2018). The Cardus organization is a pro-private school, pro-homeschool organization, so its staff have tried very hard to spin these findings in a positive way, but the clear and unavoidable conclusion of what is probably the most rigorous data set ever created to measure homeschooling's long-term academic impact is that homeschoolers as a whole do not have great educational and economic success if measured by conventional standards like a college degree and a high-paying job. On the other hand, as several researchers have pointed out, conventional standards might not be what is motivating a large percentage of homeschooling families anyway (Gray & Riley, 2013; Murphy, 2012; Guterman & Neuman, 2016; Pattison, 2015; Sikkink & Skiles, 2018).

As we have seen, much of the literature on academic achievement, as on so many other homeschooling topics, consists of small convenience samples that cannot be compared to national averages or to students attending institutional schools. Most scholars studying homeschooling do not have the resources to do what Cardus did and hire an outside firm with large, representative datasets to conduct a study. However, a compelling approach was pioneered in 2011 by Martin-Chang et al. (2011) that offers another way that even researchers with more modest budgets might employ to produce comparative data. These researchers sought to overcome the methodological flaws of previous studies by comparing homeschooled students to demographically paired institutionally schooled students. In this study both groups were recruited and both administered tests in the same controlled environment by the same researchers. This methodology permitted the authors to make comparative claims, finding in their case that homeschoolers whose families use a more structured pedagogy outperform their demographic equivalents in public school, but those using a more unstructured or "unschooling" approach underperform. Guterman and Neuman (2019) have employed the same methodology on multiple occasions. In 2019, for example, they reported that home educated children in Israel are a little behind public schoolers in reading in the younger years, though they catch up by grade five or six, and, inversely, that the home educated scored higher on tests of general knowledge. Regardless of the specific findings, this method of recruiting both homeschooling and public or private schooling samples that are demographically matched represents real progress in the literature and offers the best hope for researchers on a budget seeking to compare homeschooled children to other children on any number of variables (Guterman & Neuman, 2016, 2020; Neuman & Guterman, 2018; Pearlman-Avnion & Grayevsky, 2017).

# VII. Outcomes: Socialization

Questions about homeschooler socialization arise frequently from outside observers and in the popular media, often accompanied by concern that homeschooling deprives children of formative group interactions and the inculcation of societal norms and expectations. Homeschool advocates vigorously contest these assumptions, questioning whether institutional schooling provides a desirable form of socialization in the first place. They argue that proliferating homeschool learning cooperatives and extracurricular group activities offer ample opportunities for social interaction, but with less of the negative social influences associated with traditional schooling, such as peer pressure and bullying.

The "socialization question" has received extensive attention among researchers and scholars, as well it should. In the United States, 67% of homeschool parents identified socialization-related concerns as the primary motivation for their decision to homeschool their children (McQuiggan et al., 2017). These reasonseither concern about conventional school environments, or a desire to provide moral instruction, or a desire to provide religious instruction-were three of the four most common rationales given by homeschooling parents. And while not offered as a choice in the NHES, a motivation that in some ways encompasses these other reasons is an emphasis on family as the center of daily life (Kunzman, 2016; Murphy, 2014). Many parents view their homeschooling as both a protective and nurturing enclave, a personalized resistance against a broader culture that does not reflect their values. While some parents acknowledge sacrificing wider social engagement for the sake of family cohesion, an abundance of studies reveal that homeschool parents generally think their children are receiving necessary-and often superior—socialization experiences through interactions with family, learning cooperatives, extracurricular activities, and broader community engagement (Medlin, 2013).

Despite the importance of socialization to the homeschooling endeavor, empirical research on this topic suffers from three major methodological limitations. Besides the sampling limitations endemic to most homeschooling research, studies exploring socialization have relied almost entirely on self-report of students or their parents. In addition—as noted in the Introduction—most studies treat school attendance as a binary, not taking into account how many years a student has been homeschooled or even whether they are currently being flexischooled in a mix of learning contexts. The lack of attention to these variables would seem especially problematic when considering the socialization experiences and outcomes for students.

Much of the debate over homeschooler socialization hinges on what constitutes desirable socialization, and this question is reflected in both the empirical and normative research literature on homeschooling. For the purposes of this review, we have distinguished between two general categories of socialization. The first involves learning how to interact effectively in group settings and broader society, understanding its rules of behavior and social customs. The second category involves navigating a range of social influences—parents, peers, local communities, broader society—in the formation of personal values and civic commitments.

#### **Socialization for Personal Interaction**

In light of homeschool advocates criticism of institutional schooling's socialization efforts, it bears mention that asking, "Do homeschooled children acquire the necessary social skills to function effectively in broader society?" does not mean homeschoolers (or anyone else) must mimic the behavior and customs of the wider culture. Rather, the relevant question is whether children gain the social fluency to navigate that context, learning how to develop relationships and work effectively with others.

Of the nearly 100 studies we reviewed that conducted empirical research exploring the socialization of homeschoolers, a majority focused squarely on this first category of personal interaction, evaluating children's social skills through a variety of methods. In most of these studies, homeschoolers do not seem to suffer in comparison with their conventionally-schooled counterparts across a range of social skills, and respondents report frequent participation in extracurricular activities that provide opportunities for group interaction (Murphy, 2014). As noted above, however, most of these studies rely almost entirely on self-report of students or their parents. Typical measurement instruments employed in homeschooler socialization studies include the Social Skills Rating System (with sub-topics of cooperation, assertiveness, empathy, and self-control) and the Piers-Harris Children's Self-Concept Scale; a variety of other questionnaires focusing on peer friendships and loneliness have also been used.

The mostly widely publicized studies on homeschooler socialization have been conducted by Ray (1997a, 2004a) and present a glowing portrait of homeschooler socialization outcomes, but their findings—drawn from surveys of homeschool graduates who were asked to help demonstrate homeschooling's effectiveness to the broader public—have been frequently misrepresented by homeschool advocates, who overlook the studies' non-random samples and reliance on self-reporting (see Gaither, 2008 for a fuller critique). A more recent large-scale survey of homeschool graduates shared a similarly limited methodology but yielded a decidedly more mixed picture of satisfaction with the homeschooling experience and healthy outcomes as adults (Coalition for Responsible Home Education, 2014).

In studying long-term outcomes, Knowles and Muchmore (1995) offered a richer methodology than the Ray (1997a, 2004a) and Coalition (2014) studies, albeit one still limited by self-report. Their research, while far less expansive in number than Ray's research, probed more deeply by conducting life history

interviews with ten adults who had been homeschooled (culled from a pool of 46 volunteers to represent a range of demographic diversity). The authors found no indication that their homeschooling experience had disadvantaged them socially and suggested that it may have in fact contributed to a strong sense of independence and self-determination.

This latter observation is echoed by research examining the social integration of homeschoolers in the college setting, which finds that homeschoolers compare favorably to their institutionally-educated peers in social behavior and leadership (Galloway & Sutton, 1995; Sutton & Galloway, 2000). Medlin (2000) offers the small caveat, however, that the college setting in which Sutton and Galloway conducted their research may have been especially well-suited for homeschoolers, since so many of them enrolled there.

Some studies, even while presenting largely positive analyses of homeschoolers' socialization, observe that homeschoolers occasionally express a greater sense of social isolation and appear less peer-oriented than public school students, and that homeschoolers with more peer interactions generally fared better on socialization measures than homeschoolers with fewer (Guterman & Neuman, 2017d; Pearlman-Avnion & Grayevsky, 2017; Seo, 2009). These findings echo concerns voiced by some public school officials, who worry that homeschoolers do not receive adequate peer group socialization (Abrom, 2009; Fairchild, 2002; Kunzman, 2005). Other studies, however, observe that a lower dependence on peer relationships may have some positive benefits, such as less concern about fluctuating social status (Medlin, 2000; Reavis & Zakriski, 2005).

A few studies have included other data sources beyond self- and parentevaluation. Shyers (1992) employed a double-blind protocol of behavioral observations of 70 homeschoolers and 70 public school students which revealed significantly fewer "problem behaviors" among homeschooled children ages eight to ten. Chatham-Carpenter (1994) asked children to monitor and record all substantial (longer than two minutes) social interactions over a month's time. Homeschoolers and public school students reported no statistically significant differences in the number of social contacts they had, although the contact list include a wider range of ages for homeschoolers, and the public school students had more frequent interactions with their contacts. Haugen (2004) asked children's teachers to rate their social behavior and skills (in the case of homeschoolers, their parents selected teachers from church, learning co-ops, or other classes available in the community). Homeschoolers teachers' rated them significantly higher on social skills and significantly lower on problem behaviors than the ratings provided by teachers of conventionally schooled students. All of these studies, however, still used convenience samples, limiting their generalizability across the general population.

The very few studies employing large-scale random samples, and relying on self-report, offer some additional insights. When homeschooler parents responded to the 2016 NHES, 61% reported that their child participated in activities with other homeschooled children. When all parents of school-aged children were asked if their families had recently engaged in a range of 13 activities, homeschool parents answered affirmatively more often for every family activity except one (visiting a bookstore was essentially even) (Cui & Hanson, 2019). Further analyzing these NHES data, Hamlin (2019) suggests that, compared with conventionally schooled students, homeschoolers' ability to develop "cultural capital" may sometimes be hindered by insufficient humanities instruction, but that this deficit is compensated for by higher rates of participation in cultural and family activities.

Green-Hennessy (2014) drew from a different large-scale dataset, the National Survey on Drug Use and Health, to explore adolescents' extracurricular activity. In addition to health-related findings (addressed in Section VIII), Green-Hennessey noted that less-religious homeschoolers were 2.5 times more likely than less-religious conventionally schooled adolescents to have no extracurricular participation. More-religious homeschoolers, however, were 60% less likely to be isolated than their more-religious conventionally schooled counterparts (although church-related extracurriculars were the sole connection for 21% of the homeschoolers). Another notable finding is that at least half of all homeschoolers reported involvement in a school-based activity, underscoring the prevalence of flexischooling.

A final study that employed random samples of homeschoolers from the broader population offers a mixed evaluation of homeschooler socialization over the long term. The Cardus Education Survey explored the perspectives of high school graduates from the United States and Canada; while the actual number of homeschoolers who participated was relatively small (82 in the United States, 58 in Canada), the fact that they were obtained via random sampling makes them more statistically reliable than the Ray (1997a, 2004a) and Coalition (2014) research mentioned above. Cardus found that religious homeschoolers expressed less clarity about their goals and sense of direction, along with lower efficacy in dealing with life's problems and a higher divorce rate (Pennings et al., 2011, 2012). At the same time, however, U.S. religious homeschoolers felt that their education had prepared them for personal relationships, friendships, and family relations, especially marriage. In addition, they scored highest on the question that asked whether homeschooling had prepared them for a vibrant religious and spiritual life (a topic also related to the values formation category below).

Given the dispute over what constitutes desirable socialization, it is not surprising that an abundance of normative arguments about social skills and group interactions appear in the homeschool research literature as well (Meighan, 1984; Monk, 2004). Wyatt (2008) makes a thoughtful case for homeschooling as an appropriate and effective means of socialization for many families. He surveys the literature on the social context of public schools and theorizes that many choose homeschooling in pursuit of an alternative conception of the family and in resistance to broader culture and its values. Merry and Howell (2009) affirm this idea, arguing that homeschooling encourages a more intimate, supportive style of parenting that fosters healthy social and personal development in their children.

## **Socialization for Values Formation**

Beyond the notion of socialization as effective navigation of social norms and behaviors, however, exists a more complex question of socialization as values formation. That is, socialization entails not only how children interact with others in various social setting, but how children develop convictions about what is important to them and why. Such considerations veer quickly into normative territory and have generated a sizable body of literature, much of it philosophical in nature, focused on issues of children's autonomy, religious inculcation, and preparation for democratic citizenship.

The role of education in fostering personal autonomy has received ample attention in the scholarly literature (e.g., Brighouse & Swift, 2006; Callan, 1997; Galston, 2002; Spinner-Halev, 2000), but recent years have seen theorists turn their attention more squarely toward homeschooling in this regard. Reich (2002, 2008) posits a trinity of interests—parents, children, and the state—in education and argues that children have their own interests that must be distinguished from their parents. One of these interests, Reich contends, is in "minimalist autonomy": children should develop the capacity to reflect critically on their values and commitments, and they should have a range of meaningful life options to select and pursue. Reich and similarly-minded scholars (Bartholet, 2020; Blokhuis, 2010; Dwyer & Peters, 2019; West, 2009; Yuracko, 2008) worry that some forms of homeschooling will inhibit the development of such autonomy in children, since parents can serve as sole instructors and restrict access to a variety of ideas and perspectives.

Other theorists disagree with Reich's emphasis on autonomy, or dispute his contention that the homeschooling milieu poses a particular risk to its development, often questioning whether public schools are any more likely to foster minimalist autonomy (Glanzer, 2008; Merry & Karsten, 2010). Still others (Conroy, 2010; Kunzman, 2012) doubt that the state, in its role of guarantor of children's rights (Brighouse, 2002), possesses the wisdom or capacity to evaluate whether anyone has met some minimum threshold for autonomy.

As noted in Section IV, religion plays a prominent role in many parents' motivation to homeschool their children. Religious parents' often profound commitment to instilling particular values and beliefs in their children adds another layer of complexity to the project of values formation and the question of children's

autonomy. Buss (2000) contends that adolescents need exposure to ideologically diverse peers to help facilitate the process of identity development, and she argues that religiously-inspired homeschooling may inhibit such development (see also Blokhuis, 2010; Dwyer & Peters, 2019; Fineman & Shepherd, 2016; West, 2009; Yuracko, 2008).

But there may also be ways in which religious homeschooling promotes independent thinking and offers alternative life options to consider. Greater opportunities for self-directed learning may encourage stronger self-regulation and more substantial exercise of autonomy (Bailes 2016; Jackson, 2016; Riley, 2015). As noted previously, homeschooling is a countercultural endeavor for many families, and an ethos of resisting authority and questioning professional expertise is not uncommon—perhaps especially so for conservative religious homeschoolers (Kunzman, 2010). The very act of homeschooling serves as an assertion of their conservative religious identity (Liao, 2006; Markos, 2013) and their countercultural ethos may in turn foster the kind of mindset that characterizes autonomous thinking. Consider also the idea of "educational protectionism" (Mazama & Lundy, 2013) described in Section IV; the reasons those parents gave for homeschooling were also about empowerment—they seek to help their children develop a positive selfimage by providing cultural role models (racial and religious) and a supportive learning community to lend ideological counterweight against a broader society that threatens their self-determination. As with any educational endeavor, of course, much depends on whether the countercultural resistance is informed by critical consideration of a range of alternatives or merely unreflective acceptance of a single competing narrative.

Empirical studies related to homeschooler values formation offer a mixed and uncertain picture. Research on adolescents generally supports the idea that authoritative parenting produces outcomes more strongly associated with autonomy-providing a balance between clear expectations for adolescents and room to develop their own values and decision making as they continue to grow in judgment and responsibility (Steinberg, 2000). Some research suggests that conservative religious parents adopt a more authoritarian (i.e., strict demands on children with little room for questioning) stance to their homeschooling (Cai et al., 2002; Manuel, 2000; Vaughn, 2003), which would seem to discourage the development of autonomy. Batterbee (1992), on the other hand, reported that homeschoolers tested higher for intrinsic motivation and autonomy. McEntire (2005) found homeschoolers to be more settled in their personal values and commitments than a comparison group of public school students-but whether this serves as evidence of thoughtful personal reflection or inflexible adherence to dogma remains unclear. In a study of 30 children and their parents from two Christian homeschool support groups, Kingston and Medlin (2006) found no statistical difference in their response to the statement, "I want my child to decide

for him/herself what values to believe in," as compared with the responses of 50 public school parents from the same geographical area. Of course, what parents say they want for their children, and the actions that they take in that regard, do not necessarily align.

In a retrospective study of values formation, Hoelzle (2013) interviewed four young adult Christians, exploring how they viewed the impact of their homeschooling experiences in shaping their values and beliefs, as well as the ways in which these now align with or diverge from their parents. Hoelzle asserts that Reich's (2002) concerns about lack of exposure to different ways of life are overstated, pointing to participants' acknowledgement that they had encountered people and ideas not scripted by their parents as well as to their assertions that they felt free to shape their own lives. Even while retaining generally close relationships with their parents, participants revealed not insignificant divergence from their parents' religious views in ways that suggest autonomous functioning.

The most empirically compelling data regarding religious value formation suggests that parents' religious commitments are far more significant in shaping the religiosity of their children than the method of schooling that their children experience. In his analysis of the National Survey of Youth and Religion database, Uecker (2008) found that, for children with deeply religious parents, whether or not they were homeschooled made no statistical difference in their religious behavior and commitments. Drawing from the Cardus Survey, Uecker and Hill (2014) conclude that homeschooling had little effect on one's marriage age and birth of one's first child. Such findings call into question the assumption by many theorists that the homeschool milieu increases the ideological influence of parents. Rather, it appears that parents who are committed to a particular ethical vision of values formation in their children do not necessarily need homeschooling to accomplish this.

A number of studies have explored the social transition of homeschoolers to college. Most of these studies are quantitative, and most follow a predictable pattern. The researcher obtains a convenience sample of college students (often from the researcher's own institution) who had previously homeschooled and then compares them with a random sample of students of similar background from the same institution who had attended conventional schools. Most studies of this sort have found little to no difference on the emotional and social transition to college (Bolle, Wessel, & Mulvihill, 2007; Saunders, 2009-2010). A study of student stress levels likewise found no difference (Rowe, 2011). White, Moore, and Squires (2009) found that college students who had been homeschooled for their entire lives scored significantly higher for openness to new experiences, agreeableness, and conscientiousness, but on other personality measures there was no significant difference between groups.

A smaller number of studies have approached the homeschooled child's collegiate experience using qualitative methods, finding that these students on the whole do not change their religious or political views very much as a result of their collegiate experiences. Marzluf (2009) found that his writing students were able to learn the conventions of secular writing but did not budge from their consistently conservative political and religious views. Smiley (2010), similarly, found that most in his sample reported having their home values strengthened as a result of their exposure to other perspectives in college. As usual with qualitative findings, it is difficult to know how far to extend such generalizations, but these two observations do raise new questions that quantitative studies might take up in the future.

A democratic society also has an interest in the values formation of its youth, as it depends on informed citizens who are committed to respectful engagement with fellow citizens in the public square. Some scholars see homeschooling as the most extreme formulation of broader shift toward educational privatization and express concern that such a shift degrades a vital sense of mutual civic obligation and tolerance (Balmer, 2007; Lubienski, 2000, 2003; Ross, 2010). Homeschoolers, they worry, may lack sufficient exposure to a range of cultural and ethical diversity and thus may be ill-equipped for a citizenship that requires critical self-awareness and respectful engagement with pluralism (Blokhuis, 2010; Dwyer & Peters, 2019; Reich, 2008). Apple (2000) is especially wary of this dynamic with conservative Christian homeschooling, and in particular the political forces driving homeschool advocacy organizations such as HSLDA; their vision of the state (and its public schools) as the enemy of freedom, rather than the promoter of the public good, threatens a democratic vision of the common good. But homeschoolers do not necessarily see their avoidance of public schools and their resistance to contemporary culture as a rejection of community; some view homeschooling as a way to re-establish local communities in a modern society where such associations have withered (Moss, 1995). Homeschooling may enable politically robust yet countercultural civic perspectives to emerge in ways that the uniformity of conventional schooling suppresses (Dill & Eliott, 2019).

Empirical data regarding the civic outcomes for adults who were homeschooled provide some insights but leave many questions unanswered. Ray's (2004a) well-publicized study of adults who were homeschooled shows them voting more often than national averages, and volunteering for civic organizations at a much higher rate, but he neither employed random sampling nor controlled for income, education, or other key demographics. Smith and Sikkink (1999) did, however, and found that private school and homeschool families are consistently more involved in civic activities than public school families. Whether such activism adds to the vitality of the public square or fosters greater balkanization of perspectives and positions remains an open question. Kunzman's (2009a) study of six conservative Christian homeschooling families also found indications thatdespite some parents' concerted efforts to the contrary—children were exposed to outside social and ethical influences in ways that appeared to moderate religious and political ideology.

Other more recent studies that drew from large-scale random samples suggest a less positive view of homeschooler civic engagement. Employing data from the National Study on Youth and Religion, Hill and den Dulk (2013) explored whether the type of schooling has any impact on the persistence of civic engagement into adulthood. They found that homeschoolers were about half as likely to volunteer as public school students (and even less compared with Catholic or Protestant school students). This disparity held true even when controlling for a wide range of family background variables. Likewise, data from the Cardus Education Surveys find that religious homeschool graduates were less involved in politics and public affairs than demographically similar graduates of public or private schools.

One small-scale study questions the common perception that religiouslymotivated homeschooling fosters political intolerance. Cheng (2014) compared the political tolerance of college students who had been homeschooled with those who had not. He first asked 304 students at a private Christian university to identify the social or political group whose beliefs were most strongly antithetical to their own. Defining political tolerance as "the willingness to extend basic civil liberties to political or social groups that hold views with which one disagrees" (p. 49), Cheng then posed a series of questions to measure how politically tolerant students were of the group each had chosen. Results showed that study participants who had been homeschooled prior to college were more politically tolerant than those who had attended public schools, and the more years that students had been homeschooled, the more politically tolerant they were-although the school effects were significantly less than demographic effects of race, gender, parent education, and family income. It is also worth pointing out that Cheng's survey questions set quite a low bar for political tolerance, asking whether the least-liked group should be allowed to exercise basic rights such as making a public speech, running for elected office, and holding public demonstrations. While such attitudes are obviously to be encouraged—and offer a counterpoint to misperceptions of homeschoolers as intolerant—they fall well short of the kinds of virtues necessary for a healthy democracy undergirded by mutual understanding.

The formation of values—and the impact of parents and schools on this process—is hardly a straightforward matter. It is possible that participants in the predominantly retrospective studies mentioned here were not always able to recognize the ways in which their supposed perceptions and choices were actually narrowly channeled by powerful parental influence. Self-deception or lack of awareness seems an unavoidable possibility with survey or interview research; to the extent that childhood memories and adult self-appraisal could be triangulated by other participant perspectives, a richer and more compelling picture of socialization

might emerge. Continued exploration of these complex questions, combining the bird's eye view of survey research with the nuanced texture of narrative inquiry, remains a rich field of study.

## VIII. Outcomes: Psychological and Physical Health

Scholarly attention to homeschoolers' physical and mental health has grown significantly over the past seven years. Homeschooling-related articles published in medical journals reveal some concern among health care providers as it relates to homeschooled children's socialization, including their exposure to cultural and value diversity, as well as children's eventual capacity to navigate mainstream society. Pediatricians are urged to exercise extra vigilance with homeschooled children due to the absence of health care screening (formal and informal, mental and physical) that is typically conducted in school settings. This vigilance would include directing parents of children with special needs to resources otherwise provided in schools, as well as encouraging parents to provide group socialization opportunities outside the family context (Johnson, 2004; Klugewicz & Carraccio, 1999; Knox et al., 2014; Wallace 2000). Despite these various cautions and recommendations, however, the professional medical literature suggests a growing acceptance of homeschooling as a legitimate educational option, much in the way that some alternative medicine has slowly gained legitimacy among practitioners (Abbott & Miller, 2006). Medical professionals do note the need for long-term outcome data, however, to help better inform their understanding and interactions with homeschool families (Murray 1996).

As part of their resistance to the broader surrounding culture, some homeschool parents are particularly wary of government institutions and the notion of professional expertise (Gaither, 2017; Khalili & Caplan, 2007). This includes not only public schools but other forms of child-related authority such as social workers and health care providers. A study of nearly 1,000 parents of school-age children, for instance, found that homeschool parents are significantly more concerned about vaccine safety and have less belief in the importance of vaccinations; only 19% trust the government to set policy in this matter, compared to 57% of other parents (Kennedy & Gust, 2005; see also Johnson et al., 2013). Two other studies focused on the 2016 California law that eliminated non-medical exemptions from schoolentry vaccination requirements: interviews with 24 homeschooling mothers (McDonald et al., 2019) and an online survey with 140 homeschooling parents (Mohanty et al., 2020). Both studies found wide variation in attitudes toward vaccination. Among the larger group of surveyed parents, 69% reported that their child's doctor strongly recommended vaccines, and-in contrast to the smaller interview-based study-immunization mandates did play a role in the decision to homeschool for 22% of parents. Another smaller-scale study of Christian homeschooling parents in Pennsylvania revealed similarly diverse attitudes toward

vaccines, with the authors urging pediatric care providers to avoid assumptions about this population and engage in dialogue that acknowledges parents' central role in medical decision making for their child (McCoy, Painter, & Jacobsen, 2019).

Some researchers have compared the physical activity and fitness of homeschoolers to public school students. While small variations emerged, taken as a whole the studies suggest no consistently significant differences in diet and exercise, gross and fine motor skills, body composition and cardiovascular disease risk, endurance, and muscular strength (Cardel et al., 2014; Kabiri, Mitchell, Brewer, & Ortiz, 2017, 2018; Kabiri, Butcher, Brewer, & Ortiz, 2019; Long, Gaetke, Perry, Abel, & Clasey, 2010), although public school students with robust physical education programs tended to exercise more on weekdays than homeschooled children.

The data on emotional and behavioral problems are perhaps less consistent and clear. Employing the Child Depression Inventory on a small convenience sample, Guterman and Neuman (2016) found that children attending school had a greater level of depression and were also more likely to display emotional and behavioral problems according to the standardized Child Behavior Checklist. Especially as children aged, students attending traditional schools were more likely to possess externalizing problems such as delinquency and violation of rules. A study of college students by White et al. (2007), however, found that while homeschool graduates reported less anxiety, they were indistinct from their institutionally schooled peers on a variety of other measures of psychosocial health. Green-Hennessey (2014) drew from data on more than 180,000 students in the National Survey on Drug Use and Health to examine homeschoolers' rate of drug abuse. Controlling for key demographic variables, the analysis revealed that only three percent of homeschoolers with strong religious ties reported having a substance disorder, compared with six percent of religious, conventionally-schooled students. More than fifteen percent of homeschoolers with weak or no religious ties, however, reported substance abuse. A very high percentage of less religious homeschoolers said their parents wouldn't really disapprove if they used illegal substances (35%), while much smaller percentages of both very religious homeschoolers (6.5%) and religious conventionally schooled (8.5%) said their parents wouldn't care. Religious homeschoolers were far less likely than the other groups to report having been arrested or booked (1.6% compared to 3.3% of religious conventionally schooled and 9.7% of less religious homeschooled).

When considering homeschooler health, the most contentious issue by far relates to concerns about physical abuse. When cases appear in the media of horrific abuse by parents who were claiming to homeschool their children, community outrage sometimes prompts legislators to propose tightening homeschool oversight appear in the media (generally to no avail). But almost no peer-reviewed empirical research has been published that explores a possible relationship between homeschooling and child abuse, in part because comprehensive data are not available. Medical professionals in one study (Knox et al., 2014) gathered cases of severe child abuse that had been documented by their respective medical institutions in Virginia, Texas, Wisconsin, Utah, and Washington State. They found that 29% of the school-aged children had not been allowed to attend school, 47% were removed from school under the auspice of "homeschooling," and an additional two children had been removed from school with no parental explanation given. The authors note that no education was subsequently provided by parents and the children's increased isolation was followed by an escalation of abuse.

The ability for homeschoolers to more easily hide abuse is a commonly raised concern. The U.S. Department of Health and Human Services (2020) notes that professionals are responsible for reporting two-thirds (67.3%) of cases submitted to child protective services, with education professionals the most frequent sources (20.5%). While obviously a different national context, an extensive analysis of the risks to homeschooled children in Wales also raises this issue of hiding abuse (Forrester, Maxwell, Slater, & Doughty, 2017). The authors acknowledge that they do not have any reason to believe that abuse is more common in homeschooling, but their review of such cases in Wales leads them to conclude that the homeschooling context enabled parents to limit contact with health and educational professionals who might have reported concerns (see also Pollack, 2012). Drawing from an incomplete but growing database, the Coalition for Responsible Home Education (2020) asserts that homeschoolers' children are at disproportionate risk of dying from abuse compared to institutionally schooled children, a view reinforced by an analysis of three years of data (2013-2016) from six Connecticut school districts, which found that 36 percent of the families who withdrew their children to homeschool during those years had at least one and frequently multiple reports of suspected child abuse or neglect (Office of the Child Advocate, 2018). Clearly this is a topic that needs additional research, along with enhanced child welfare resources and better communication between child welfare professionals and homeschooling organizations (Goodpasture, Everett, Gagliano, Narayan, & Sinal, 2013).

#### IX. U.S. Homeschooling Law and Policy

Homeschooling law and policy have continued to receive significant attention since we first wrote in 2013. In Section XI we will discuss the legal situation in many countries. Here we examine homeschooling in the U.S. context, first at the constitutional level and then at the level of state statutes. In both domains the scholarly literature has tended to be either descriptive or normative, seeking either to explain the current status of the law or to craft legal arguments that might change that status. The U.S. Supreme Court has not to date entertained a case explicitly about homeschooling. That has not stopped homeschool advocates from claiming repeatedly that homeschooling is a constitutional right protected by the First Amendment's free exercise clause, which prohibits government from making laws that prohibit the free exercise of religion, and the Fourteenth Amendment's due process clause, which prohibits government from depriving any person of life, liberty or property without due process of law, and the right to privacy that has emerged from it (Farris, 1990; Henderson, 1993; Klicka, 2006; Whitehead & Crow, 1993). These constitutional claims, if true, undermine not only compulsory attendance laws but also complicate other legal limits imposed upon parents like child abuse or health policy laws (Duke, 2003). Is homeschooling a right guaranteed by the Constitution?

The general consensus among legal scholars and in the courts has been that neither First nor Fourteenth Amendment arguments for homeschooling are compelling (Dwyer & Peters, 2019; Fineman, 2017; Karinen, 2016; Raley, 2017). The Fourteenth Amendment argument may be the stronger of the two, as the Supreme Court has long recognized parental rights to raise children (Buchanan, 1987; Wang, 2011). Perhaps ironically—given that so many conservative homeschoolers want to overturn it—it was the abortion jurisprudence, especially the 1973 Roe v. Wade and the 1992 Casey decisions, that established most clearly that child-rearing is a fundamental right (Lerner, 1995). But at the same time, the Court has also consistently upheld state compulsory education legislation and the right of the state to regulate private schools. To date no lower court has found a constitutional right to homeschooling in the Fourteenth Amendment (Devins, 1984; Gaither, 2017; MacMullan, 1994; Peterson, 1985; Richardson & Zirkel, 1991; Zirkel, 1986).

First Amendment claims have been repeatedly asserted by homeschoolers and their lawyers, usually citing Wisconsin v. Yoder (1972) as a precedent. The legal consensus is that Yoder cannot be applied to most homeschoolers, for, in the words of the majority opinion, "probably few other religious groups or sects" could qualify for an exemption to compulsory school laws similar to that obtained by the Amish in this famous case (Lickstein, 2010; Peters, 2003). On two occasions, both times in Michigan, state courts have found a constitutional right to homeschool in the First Amendment's free exercise clause, though the federal appellate court in the circuit that includes Michigan rejected the "hybrid rights" logic that was the basis for those decisions (Dwyer & Peters, 2019). No other state has found a free exercise right to homeschool, and most legal scholars also disagree that current free exercise jurisprudence would support such a right (Gaither, 2017; Ross, 2010; Zirkel, 1986, 1997). That has not stopped some states from granting more independence to religiously motivated homeschoolers than to others (Bach, 2004).

Part of what legal scholars do for a living is to construct hypothetical arguments that could reasonably hold up in court. Several scholars have attempted to do this for the issue of homeschooling's constitutionality. Given the confusion over whether or not parental education is a fundamental right and the degree of scrutiny that must be applied by government to legitimate infringing on homeschooling parents' privacy, divergent arguments are plausible (Beckstrom, 2010; Lagos, 2011; Wang, 2011). Good (2005), for example, deconstructs the Supreme Court's First Amendment jurisprudence, especially as it interfaces with other rights to create hybrid situations, and argues for a less stringent "balancing test" to be applied to parents asserting free exercise claims. Lerner (1995) makes a similar argument grounded in Fourteenth Amendment abortion jurisprudence to claim that "Undue Burden" is a better regulatory threshold than "Rational Basis," a claim that would make it more difficult for states to regulate homeschooling.

Some scholars go further and argue, as homeschooling advocates typically do, that the Fourteenth or First Amendment do in fact make homeschooling a fundamental right (Anthony, 2013; Farris, 2013; Kreager, Jr., 2010; Olsen, 2009; Tomkins, 1991). On the other side of the political spectrum, some claim that the Constitution rightly interpreted prohibits home education outright, or at least requires strict regulation (Fineman, 2017; Fineman & Shepherd, 2016). Yuracko (2008), for example, argues that states not adequately regulating homeschooling violate the Constitution's equal protection clause. Other scholars seek to reframe the debate between parents and the state so as to limit parental rights by bringing in the interests of the child (Bartholet, 2020; Dwyer, 2006; Dwyer & Peters, 2019; Green, 2015; Woodhouse, 2002) or by appealing to the common law principle of *parens* patriae (Blokhuis, 2010). Still others call for increased regulation of homeschooling, arguing against the "hybrid rights" doctrine that has emerged of late to claim that the state's interests in producing literate, tolerant citizens outweighs parental rights (Greenfield, 2007; Ross, 2010; Waddell, 2010). Waddell (2010), in a particularly incisive summary of these issues, concludes that the Supreme Court's conflicting and vague jurisprudence is largely responsible for this chaos of competing views, and he hopes that a future decision by the Court will clarify the situation. Other analysts concur that the current situation is a messy patchwork of precedents, some of the most important of which extend back to the Lochner-era, well before the Supreme Court's levels of scrutiny jurisprudence were developed (Lagos, 2011; Wagner, 2014).

Turning to state statutory law we find an even more confusing and intimidating literature. Again, much of the scholarship is descriptive, fulfilling the much-needed task of bringing order to the dizzying array of state statutes and court decisions by providing historical context or categorization (Carlson, 2020; Gaither, 2017; Lane, 2015; Tobak & Zirkel, 1982). Between 1982 and 1988, twenty-eight states passed new homeschooling legislation, often in response to court decisions

finding their previous compulsory education statute unconstitutionally vague or otherwise deficient. Since then many states have tweaked their laws in various ways, most frequently by reducing accountability mechanisms (Coalition for Responsible Home Education, 2019). The result has been a piebald assortment of laws that vary widely between states (Baxter, 2010; Campbell, 2001; Carlson, 2020; Cibulka, 1991; Cooper & Surreau, 2007; Dare, 2001; Kararo & Knobloch, 2018; Kreager, Jr., 2010; Kreh, 2015; Kunzman, 2008; Miller, 1999). Some scholars have investigated the degree to which these intra-state policy differences correlate with differences between states in number of homeschoolers per capita, levels of racial integration in public schools, student achievement, and other variables (Bhatt, 2014; Levy, 2009). Studies thus far have found, so far as the limited data allow, that different regulatory climates correlate weakly or not at all with the percentage of homeschoolers in a state, the rate of growth in homeschooling, homeschooler test scores, or any other variable studied (Bhatt, 2014; Hail, 2003; Levy, 2009; Stewart & Neeley, 2005). Ray and Eagleson (2008), for example, found no correlation between degree of state regulation of homeschooling and SAT scores of 6,170 test takers self-designating as homeschoolers in 2001.

As with constitutional law, much of the literature on statutory matters is normative, seeking to influence public policy by constructing legal arguments that challenge or endorse the current situation. Typically, such arguments fall into one of two camps. Some legal scholars, either homeschooling advocates themselves or libertarian-leaning, advocate for reduced regulation or no regulation at all (Burkard & O'Keefe, 2005; Kallman, 1988; Mangrum, 1988; Nappen, 2005; Page, 2001). Others, often motivated by concerns about child welfare, gender equity, or ideological balkanization, argue for some sort of regulation, sometimes with focus on a particular state (Barnett, 2013; Richardson, 2013). Some regulation advocates argue for a more maximalist climate, including such components as annual testing, competence tests for parent educators, and curricular checks such as portfolio assessment or subject mastery tests (Bartholomew, 2007; Greenfield, 2007; Kelly, 2006a, 2006b; Kreh, 2015; Tabone, 2006). Others, seeking a middle ground that respects parent and state interests, advocate for a more minimalist regulatory climate limited to registration with the state and competency tests in basic literacy and numeracy (Alarcón, 2010; Baxter, 2010; Devins, 1992; Kunzman, 2009b; McMullen, 2002; Moran, 2011). These are just two among many regulatory scenarios proposed by scholars (Dwver & Peters, 2019; Vicry, 2019).

Finally, some legal scholars direct their analysis toward issues that do not easily fall into our constitutional or statutory categories. The overlap of child custody cases and homeschooling is a vexing issue that often pits one parent's desire to homeschool against another's not to, which has made it an interesting issue for scholars to study (Kolenc, 2010-2011, 2016; McMahon, 1995; Ross, 2010). The overlap between homeschooling and a state's vaccination laws or child abuse

protection policies have also been the subject of research given widespread interest in such matters (Barnett, 2013; Goodpasture et al., 2013; Johnson et al., 2013; Knox et al., 2014; McCoy et al., 2019; McDonald et al., 2019; Pollack, 2012). Likewise, much research has been done on the interface between homeschooling and public education law and policy. The next section considers this topic.

### X. Homeschool/Public School Relationships

The relationship between homeschoolers and public schooling has varied widely over time and locale. As discussed earlier, many homeschool parents express dissatisfaction with the environment and academic quality of institutional schooling; it appears that many public school officials share similar sentiments about homeschooling. The National Education Association is generally critical of homeschooling and advocates increased regulation, including a teaching license for all home instructors, and prohibiting homeschoolers from all public school extracurricular activities. Most empirical studies (the bulk of which have been doctoral dissertations) of superintendents' and state-level officials' views on homeschooling reveal strong scepticism concerning the academic and social quality of the homeschooling experience, as well as the conviction that homeschooling should be more tightly regulated (Abrom, 2009; Boothe, Bradley, Flick, & Kirk, 1997; Brown, 2003; Fairchild, 2002; Hendrix, 2003; Kunzman, 2005; Slavinski, 2000; Yeager, 1999). Interestingly, Riegle & McKinney (2002) found that homeschoolers concede that not all families provide a high-quality homeschooling experience, but they often place the blame on school districts that encourage failing students to withdraw with the intent to homeschool, which allows districts to avoid counting them as dropouts (Francisco, 2011; McCoy, 2019; Radcliffe, 2010). Legal challenges to homeschooling have largely subsided since the 1990s and some school districts have adopted a more collaborative stance, but conflicts do remain (Johnson, 2013).

Homeschoolers access public school resources in a variety of ways, and the degree of access afforded them ranges widely by state, and often even by districts within the same state. Currently, fourteen states have laws mandating that homeschoolers be allowed to enrol as part-time students, and four states explicitly prohibit it; the rest leave it up to district discretion. As noted earlier, it appears that around half of homeschoolers enroll in some sort of institutional schooling, although this would include settings other than public schools as well. In terms of extracurricular participation, about half of states require districts to make room for homeschoolers (some with certain eligibility requirements) and six states leave it up to district discretion. Among the remaining 21 states (plus Washington, D.C.), homeschoolers are prevented from interscholastic competition but not necessarily all extracurricular activities.

Some homeschoolers have filed lawsuits to force districts to allow greater access, but courts have consistently refused to recognize a constitutional right by homeschoolers to partake in public school classes and activities (Batista & Hatfield, 2005; Keddie, 2007; Prather, 2000; Thompson, 2000); such decisions are instead left in the hands of state legislatures or the discretion granted to local districts. Despite the general resistance by many public school officials to homeschooler access, a few studies suggest that cordial and cooperative relationships do exist between homeschoolers and some local school districts (Angelis, 2008; Dahlquist, York-Barr, & Hendel, 2006; Lamson, 1992; Waggoner, 2005). In Florida, where homeschooler involvement in public school extracurriculars is permitted, 147 athletic directors surveyed generally felt that homeschoolers participated successfully—they were good teammates, maintained good grades, and adhered to required codes of conduct (Johnson, 2002).

Most legal analyses of this issue advocate for policies, or even court rulings, that mandate wider homeschooler access (Atkinson, 2014; Fuller, 1998; Gardner & McFarland, 2001; Grob, 2000; Keddie, 2007; Lukasik, 1996; Roberts, 2009; Webb, 1997). Other commentators argue from a more philosophical vantage point that welcoming homeschooler participation in public school activities can provide civic and curricular benefits for all students (Holt, 1983; Lukasik, 1996; Reich, 2002). Homeschoolers themselves are split on whether accessing public school resources and experiences is a wise move, with some worrying that participation in statefunded activities will subject them to greater state oversight and, ultimately, more regulations in all aspects of their homeschooling (Gaither, 2017; Huerta, 2000).

Over the past two decades, however, a new kind of partnership between homeschoolers and local districts has emerged (Dahlquist et al., 2006; Lines, 2000). The tremendous growth in homeschooling spurred districts to design and support hybrid programs, wherein schools provide curricular materials, record-keeping, and some academic oversight, but homeschool parents play an active, often primary, role in the instructional process. Local districts can thus count these students in their daily attendance and receive additional funding. Small-scale studies suggest that, for homeschoolers willing to establish a formal relationship with the local district, the combination of curricular resources from the school and instructional support from parents provides homeschoolers with a valuable learning experience (Angelis, 2008; Dalaimo, 1996; Lamson, 1992). Given the substantial degree of movement between homeschooling and conventional schooling (noted in Section III), greater attention seems warranted regarding how these transitions are navigated by students, and the ways that schools in particular might assist through steps such as orientation, faculty mentoring, and peer support (Sutton-Black, 2017).

The proliferation of online technology has clearly helped school districts provide a convenient and flexible schooling experience for homeschoolers, who may not need to be physically present at all to avail themselves of district resources and guidance. But these same technological advances, combined with increasing legislative support for school choice, have also created a fertile landscape for the growth of privately-run cybercharters. These online charter schools, supported by public funds, are often run by for-profit companies who view homeschoolers as a lucrative target audience, but their lack of standardized record-keeping and external oversight have led to mixed but mostly poor academic outcomes for participants (Cavanaugh, 2009; Gaither, 2017; Huerta, Gonzalez, & d'Entremont, 2006; Huerta, d'Entremont, & Gonzalez, 2009; Mann, 2017; Molnar et al., 2019). States also worry that cybercharters result in what is essentially state-sponsored homeschooling, with homeschoolers who were previously "off the books" now straining already-depleted education funds (Huerta et al. 2006; Huerta et al., 2009; Klein & Poplin, 2008; Rapp, Eckes, & Plucker, 2006). The most current, comprehensive analysis of virtual schooling options for homeschoolers shows consistent underperformance compared with conventional public schools, although district-operated virtual schools received acceptable ratings more often (56.7%) than privately-run cybercharters (40.8%). Underperforming most dramatically were for-profit virtual schools, with 29.8% receiving acceptable ratings (Molnar et al., 2019). Backus and Jones (2015) offer policy recommendations for virtual charters, including more stringent record-keeping, lower class sizes, more requirements for teachers (especially education in best practices in the virtual environment), stronger external board accountability, and more transparent financial accounting.

Twenty years ago, Hill (2000) predicted that the burgeoning growth in homeschooling would ultimately lead to new configurations of schooling that transcended traditional school structures, and this has certainly come to pass. Whether in the form of hybrid partnerships with public schools or for-profit cybercharters using state resources, the lines between public and private, home and school, continue to blur (Wearne, 2019). With this in mind, some theorists fear that the "public" in public schooling may disappear in ways that threaten the civic mission of common schooling (Apple, 2000; Cox, 2003; Dwyer & Peters, 2019; Fineman & Shepherd, 2016; Lubienski, 2000). Other scholars see this phenomenon as a welcome re-integration of private and public spaces that had been severed by the industrial revolution (Klein & Poplin, 2008). One especially pertinent issue, given the prominence of homeschooling among conservative religious families, is the appropriate role of religious instruction in a hybrid context when public monies are used for parent-directed instruction infused with religious content (Apple, 2007; Cambre, 2003; Huerta, 2000; Malkus, Peshek, & Robinson, 2017).

### XI. International Homeschooling

Much progress has been made in the study of home education in countries other than the United States since our 2013 review. Earlier international research, at least that available to English-language readers, tended to use the U.S. research for context and simply replicated the agenda of the U.S. literature in the researcher's home country. But in the past seven years that has changed. Some of the most innovative research on home education is now coming from countries outside of the United States. Some of this research has already been cited in earlier sections of this article. Here we will aim for something more systematic. While the global literature has improved dramatically, it has not done so everywhere. There are still many countries where little to nothing is known about home education, and many more have only one or a small handful of studies on the topic. This section will summarize the English-language literature on home education around the world.

### Canada

Home education has always been legal in Canada's ten provinces and three territories. Regulations vary by province, and data collection practices and homeschooler adherence to the law differ dramatically across regions. As a result, no comprehensive statistical portraits of Canadian homeschooling are available (Brabant & Dumond, 2017; Luffman, 1997). The most informed scholar of Canadian home education estimated there to be around 27,000 Canadian home educators in 2014 (Brabant & Dumond, 2017). Since 2007 five Canadian provinces have changed their home education regulations, increasing accountability but at the same time, in three provinces at least, providing funding for home education expenses, which in turn has increased the numbers (Van Pelt, 2015). Canadian libertarian-leaning advocacy organization The Fraser Institute, which has released three reports on home education in Canada since 2001, would like to see this combination of increased accountability and government funding spread to other provinces (Bosetti & Van Pelt, 2017).

In their two-year study of Canadian homeschooling, Aurini and Davies (2005; see also Davies & Aurini, 2003) conducted 75 interviews with a range of individuals, either homeschoolers or active observers of the phenomenon. The authors concluded that homeschooling was becoming increasingly accepted in Canada, not so much because of the embrace of neo-liberal philosophies of market-driven school choice as in the United States but because homeschooling allows parents to customize their child's education in accord with their own values and priorities. Arai's (2000) small-scale study of Canadian home educator motivation suggested that mothers were less motivated by religion than U.S. parents but shared a similar dissatisfaction with conventional schools' curricula and environment. Brabant, Bourdon, & Justras (2003) echoed these findings in their survey of 203 homeschool families in Quebec, a markedly different sociocultural context than English-speaking Canada. More recent work has continued to confirm the much smaller role of religion in Canadian homeschooler motivation (Brabant & Dumond, 2017). Instead, parents typically emphasize an alternative conception of family life.

Similar to research in the U.S. context, reliable longitudinal data is scarce. In a study of 620 Canadian adults who had been homeschooled, a significant majority describe themselves as well prepared for life and engaged in a wide variety of civic activities (Van Pelt, Neven, & Allison, 2009). The participants, however, had been drawn from a larger sample of Canadian homeschoolers recruited by Ray (1994), and as with Ray's other large-scale studies, were clearly not representative of the broader Canadian homeschool population. A 2011 randomized sample of 2,054 Canadian young adults age 24 to 39 by the Cardus organization captured several previously home-educated young adults. In its report it screened out its Quebecois and non-religious home educated subjects as there were not enough of either group to make statistical comparisons possible, so in theory the sample should be the same basic demographic as that captured by the previous studies of Van Pelt and Ray. Though Cardus is a pro-homeschooling organization, its survey found that in fact religious Canadian home educated young people were less engaged civically than their government-educated peers, more insular in their friendship networks, less happy overall, less likely to graduate from a university, and likely to work less and make less money overall than comparable young people who attended government schools (Pennings et al., 2012). The data here were not as bleak as those reported in the U.S.-based Cardus studies, but randomized sampling netted similar results in both countries.

### The United Kingdom

The greatest number and percentage of European homeschoolers reside in the United Kingdom, where the absence of regulation allows significant latitude for a variety of content and instruction (Monk, 2009). Modern homeschooling in the UK emerged in the late 1970s and has grown steadily ever since (Lees & Nicholson, 2017). While 20,000 homeschoolers registered with the government in 2009, scholarly estimates of actual numbers have fluctuated between 50,000 and 100,000-the uncertainty being due to the perception that a large number of homeschoolers don't notify state authorities, which they are not required to do (de Carvalho & Skipper, 2019; Hopwood, O'Neill, Castro, & Hodgson, 2007; Waterman, 2016; Webb, 2011). There exists one quantitative study of home education enrollment in the United Kingdom. It drew on the monthly Opinions and Lifestyle Survey (OLS) of the Office of National Statistics, which for six months in 2013 included questions about home education, netting responses from 6.135 subjects. Extrapolating from this nationally representative source, Smith and Nelson find that 1.1% of the UK population home educated for at least part of the time with their children, and .2% did so full time, suggesting an overall home educating population of upwards of 80,000 in 2013 (Smith & Nelson, 2015). While there is some evidence of dramatic growth since 2013, systematic numbers remain elusive given the UK's deregulated environment (Fensham-Smith, 2019).

Not surprisingly, a good bit of the UK research has emphasized parental motivation. Rothermel's (2011) interviews with 100 homeschooling families reveals a diversity of motives and methods, and it appears that religiously-motivated homeschoolers are a significantly smaller group than in the United States (Monk, 2009; Webb, 2011). That finding was corroborated by Smith and Nelson's quantitative data, which found that only 15% of OLS respondents selected religion as a motive for their home education (Smith & Nelson, 2015). Scholarly study of UK Travellers, including Romany Gypsies, members of the fairground and showman communities, and Irish Travellers, finds that for this subgroup at least, the experience of persecution and bullying their children receive at local schools pushes them toward home education, frequently using hired tutors (D'Arcy, 2014a, 2014b; Ivatts, 2006).

One problem that remains with the UK research, as Jennens (2011) noted, is that the great majority of it is conducted primarily by homeschool advocates. Webb (2011) criticized UK studies of homeschooler academic achievement (e.g., Rothermel, 1999, 2002, 2004) as suffering from the same sample flaws of self-selection and uncontrolled testing conditions as the HSLDA-funded U.S. studies. Much of the most recent UK literature continues this activist spirit, finding, for example, very good results from within the unschooling community and very positive socialization experiences (de Carvalho & Skipper, 2019; Pattison, 2016; Thomas & Pattison, 2013). On the other hand, some scholarship has emphasized the potential negatives of the UK's unregulated environment, arguing that it may be being used by abusive parents to cover their crimes (Waterman, 2016). Lees, a leading activist-scholar, has acknowledged the potential for abuse and argued for accountability in the form of interviewing home educating parents about the philosophy that has led them to embrace the practice (Lees, 2014).

A final and important theme of the UK literature is the topic of special education. The OLS data found that some 23% of UK home educators elected to home educate because of a child's special needs (Smith & Nelson, 2015). Several studies of this population have been published, with the consistent finding that mothers turn to home education only out of exasperation after repeated frustration with their local school's handling of their child's special circumstances (Kendall & Taylor, 2016; Parsons & Lewis, 2010; Winstanley, 2009). As the internet increases the likelihood that frustrated UK parents will hear about elective home education, the UK seems poised for continued growth in the home education of children with or without special needs, though this growth has the potential to increase the already tense relationship between government agencies and suspicious home educators fearful of heightened regulation (Fensham-Smith, 2019; Lees & Nicholson, 2017).

# Europe

No other European country enjoys anything approaching the quantity of UK scholarship. The primary focus of recent scholarship on Continental home education has been the proper role and authority of the state in education. Home education regulations vary widely in Europe and continue to change (Petrie, 2001; Blok & Karsten, 2011; Blok, Merry, & Karsten, 2017; Kostelecká, 2017). In a review of the policy environment in European countries with readily available data, Blok, Merry, and Karsten (2017) found nine that specifically designate homeschooling as a legal right, though policies range from fairly lenient (in Austria, Belgium, France, and Poland) to more restrictive (Estonia, Hungary, Italy, Norway, and Portugal). Five countries virtually or completely prohibit the practice (Bulgaria, Germany, the Netherlands, Sweden, and Spain). In all of these countries, the percentage of the school-age population that homeschools is estimated at less than one-tenth of a percent, and often much lower (Blok et al., 2017). Frequently, regulations are enforced selectively and inconsistently at the local level, so home education can sometimes take place even where it is not legal (Estarellas, 2014; Kostelecká, 2010; Petrie, 2001; Sliwka & Istance, 2006; Spiegler, 2010).

Scandinavian countries differ dramatically in their approach to home education regulation. Academic scholarship has focused on the Norwegian and Swedish contexts in particular. Beck (2010) estimated that two-thirds of the approximately 400 Norwegian homeschoolers did not register with the state given the onerous regulatory environment. Motivations for homeschooling differ by region in Norway, but Beck (2008, 2006) identified an underlying populist spirit resisting the structures and pedagogies of public schools while stressing the freedom and centrality of the family. As such, Beck (2010) contended, homeschooling has the potential to contribute to greater diversity in social perspectives. In Sweden, however, where only about 100 families homeschooled in the first decade of the 21st century (Villalba, 2009), the prospect of such ideological diversity was viewed with such suspicion that the country revised its law in 2011 to make home education essentially impossible to do legally (Blok et al., 2017).

Concern about alternative educational experiences and the potential for social divisiveness appears most acute in Germany, where homeschooling is legally forbidden except in rare medical circumstances. Even here, however, some localities turn a blind eye toward the practice. Approximately 600-1,000 German children were being homeschooled in the early 21st century (Spiegler, 2009, 2010). More recent empirical data is unavailable. Recent scholarship on German home education has been entirely legal analysis, all of it concluding in one way or another that Germany's outright ban is misguided. Doroshenko (2014) and Donnelly (2016), noting the Nazi-era origins of Germany's compulsory schooling law, each make the case that a human rights issue is at stake and that Germany's policy contradicts its own principles as codified in several international treaties. Reimer (2010) and

Spiegler (2009) argue against the logic and rationales given by German courts for their findings, appealing to the situation in other European countries as evidence that fears of parallel societies and educational failure are misplaced. Groenveld (2010) finds room within the history and letter of the German law for home education and predicts that as public opinion gradually grows more tolerant, the opinions of the courts will follow.

A few other European countries have been studied by scholars writing in English. Bongrand and colleagues are currently undertaking the most ambitious and interesting European study by attempting to quantify the records kept by the French public administration on every French home educating child, ultimately achieving a population-level dataset (Bongrand, 2019). Home education has increased dramatically in France, from 13,547 registered children in 2008 to 24,878 in 2015. Every two years a report is filed on each child after a home visit. Early results from an analysis of these reports in one region reveal that most French home educators use a formal curriculum (they are not unschoolers); that mothers move over time from push motivations related to negative school experience to pull motivations emphasizing the intrinsic goods of home education; and that in about a quarter of investigations concerns are raised by officials about lack of family integration into the broader society, lack of educational quality, and/or religious radicalization (Bongrand, 2016, 2019).

For Spain, Estarellas (2014) found that frustration with the Spanish school systems has led more families to exit for home education. He estimated that about 2000 families were doing so in 2014. Prior to 2010 families prosecuted for home educating, which is against the law, were typically not convicted in court. A 2010 Spanish Constitutional Court ruled that there exists no a priori right to home education but left open the possibility of statutory regulation. As no statute has emerged, local situations remain fraught. For Poland, Paciorkowski (2014) described the history of Polish home education law, which in 2009 was restructured to require families choosing the practice to obtain an opinion from a psychological and pedagogical counselling centre as to their fitness to do so. Kostelecká (2012, 2017) summarized the situation in five post-Communist countries—the Czech Republic, Poland, Slovakia, Slovenia, and Hungary, each of which dramatically revised its education laws after the fall of Communism. Poland was the first to legalize home education, in 1991. Hungary did so in 1993, and Slovenia followed in 1996. In 1998 the Czech Republic began a pilot program to test the practice, and in 2004 that country legalized home education under certain conditions. Slovakia finally legalized home education in 2008. In all of these countries the practice is heavily regulated. A qualitative study of home educating mothers in the Czech Republic, rare for Continental European research, found that mothers talked of home education as a sacrificial life of devotion to their children (Beláňová, Machovcová, Kostelecká & McCabe, 2018).

# Australia and New Zealand

Australian homeschool regulations vary by regional jurisdiction, and in recent years regulations have grown stricter in several Australian states, resulting in more tension between government and home educators and more widespread noncompliance with the law (Drabsch, 2013; Jackson, 2017). New South Wales, for example, increased regulations in 2011, requiring home educators to follow prescribed scopes and sequences in curricula and to maintain a detailed timetable. These regulations changed the tenor of home inspections, making them more adversarial, and they made home education less flexible overall (Liberto, 2016). In her comprehensive review of Australian homeschooling research, Jackson (2017) reported findings similar to the U.S. in terms of the variety of curricular approaches employed by parents, whose primary motivation appears to be concern about school environment and curricula. The one major difference seems to be that "the influence of right-wing politics and religion evident in the United States is not so obvious in Australia" (Jackson, 2017, p. 341). While no comprehensive studies have been performed on Australian homeschoolers' academic achievement, smaller-scale studies reveal homeschooler test scores equal to or greater than those of their public schools peers (Jackson, 2017). Neighbouring New Zealand has received less attention. Varnham (2008) described a relatively strict regimen of state oversight in New Zealand. What little research there is on New Zealand is summarized by Jackson (2017).

### Israel

There has been a true explosion in scholarship on home education in Israel since 2013. The most prolific researchers over the past few years in any country have been the duo of Guterman and Neuman, who together published 12 articles covering a range of topics. Their work has combined creative methodology, often by assembling demographically equivalent home educated and institutionallyeducated children and parents so that valid comparisons can be made, with creative topics, investigating concepts new to the literature such as parenting attachment style, parent personality type, metaphors for learning, and evolving homeschool motivation narratives (Guterman & Neuman, 2017a, 2017b, 2017c, 2017d, 2019, 2020; Neuman & Guterman, 2016a, 2016b, 2017, 2018, 2019a, 2019b). Many of their findings were summarized in previous sections. Another pair of researchers in quality comparative work, likewise recruiting Israel have also done demographically similar groups of home and conventionally educated children. In their case homeschooling had no effect on civic engagement, but the more years a child was homeschooled, the lower her or his self-efficacy score (Pearlman-Avnion & Grayevsky, 2017).

# China

Given that it is officially illegal, home education in China has received a fair amount of scholarly attention. The legal terrain is canvassed by Sheng (2018), who also has interpreted the rise of homeschooling as a reaction against modernizing trends in China by a middle-class, western-educated group of mothers combining both religious and pedagogical motivations as they prepare their children for higher education in the United States or Europe (Sheng, 2015, 2017, 2019). Sheng estimated that in 2017 there were perhaps as many as 25,000 home educating families in China. The approach seems popular among Chinese Christians and Confucians, both of whom express nostalgia for older traditions of respect for elders and family values (Sheng, 2015, 2019). Other researchers have come to similar conclusions. Two qualitative studies of homeschooling mothers found both pedagogical objections to the drill-and-kill test prep approach to education common in China and a desire to inculcate conventional Confucian or Christian values in their children (Zhao & Badzis, 2014; Zheng, 2014). Interestingly, all studies to date have found that given the small family size in China (many have only one child), homeschooling mothers and children feel isolated and often turn to communal schooling and even communal living to cope. Several Chinese homeschools are in fact multi-family affairs (Sheng, 2015, 2017; Zhao & Badzis, 2014; Zheng, 2014).

# **Other Asian Studies**

Kemble (2005) explained that homeschooling, while not explicitly legal in Japan, is typically prompted by social difficulties at school; the state's approach to such situations is case specific and students excused from school attendance to study at home are not officially viewed as homeschoolers. One Japanese activist estimated that two to three thousand families were home educating in 2014 (Sheng, 2017). Jung (2008) interpreted the increasing numbers of Korean homeschoolers as an adoption of Western individualism, both for the children and the mothers who break away from the school system to teach them. Seo (2009) studied four middle-class Korean homeschooling families who rebelled against the rigid, test-driven state school curriculum, but who all eventually returned to conventional schools. Seo predicted that homeschooling's prospects for growth are limited because of the culture's deep-seated collectivist values. Tung (2010) described the homeschooling experiences of four Taiwanese Christian families, who sought to provide a more religiously-infused learning experience. These families valued the flexibility that homeschooling provides both in terms of curricular content and increased family time, but they worried that Taiwanese society's ignorance toward homeschooling and strong emphasis on conventional academic credentials would limit their children's future educational and career options. Kim-Soon, Bin Ahmad, Bin Sulaiman and Sirisa (2015) explained that Malaysia's 2003 Compulsory Education Act required parents to get permission to home educate from the Ministry of

Education. Their mixed-methods study of 30 homeschooling parents (almost all mothers) from the capital city of Kuala Lumpur revealed that most were wealthy and well-connected, with advanced degrees, concerned more for their children's academic futures than for religious or moral formation.

### **Other Countries**

South African homeschoolers, small in number but growing, appear to have similar demographics and motivations as U.S. homeschoolers (Brynard, 2007; de Waal & Theron, 2003). The history of South African homeschooling has been covered well by Olatunji, who reveals the strong connections between early South African home educators in the mid-1990s and HSLDA in the United States (Olatunji, 2014, 2017). He also canvasses various estimates and counts of the home educating population in that country, which has seen growth from about 1,300 in 1996 to somewhere between 30,000 and 100,000 by 2017. It seems especially popular among more well-to-do families seeking to protect their children, especially their girls, from the extreme violence and sexual predation that frequently occurs in the school setting (Olatunji, 2014, 2017).

Kiliç (2017) explains that home education in Turkey is technically illegal except for the ill or for children with special needs. However, government census data reveals nearly four million Turks who learned to read but who never attended formal schools, meaning that at least rudimentary education is being provided in the homes of millions of Turks apart from any government oversight (Kiliç, 2017). A survey of 130 Turks found widespread disapproval of home education across the economic spectrum (Korkmaz & Duman, 2014).

The only English-language scholarly treatment of home education in Chile estimated that about 1,000 families were doing so in 2013. This article synthesized the extant Spanish-language literature (only one scholarly article and four student theses). From this small body of work it seems that Chilean motivations are more like those of Europe, Canada, and Australia than the U.S. and South Africa, with religion only being claimed as a motivation by about 15% of mothers surveyed (Conejeros-Solar & Smith, 2019).

Brazil was estimated to have about 3,200 home educating families in 2016. There have been several efforts to pass home education legislation there since 1996, all unsuccessful, but in 2009 a local court allowed a family to continue the practice given their children's excellent academic achievement. According to Barbosa (2016), home education is not a feasible option for many of Brazil's poor given the need for a stay-at-home parent.

Colombia and most other Latin American Countries, unlike Brazil, permit home education, but according to a group of Colombian scholars there is lack of clarity about home education's legal status across the continent because many laws are unclear about the distinction between education and schooling. Ecuador explicitly permitted home education in a 2013 law, though it is heavily regulated. Argentina permits it in some cases. Mexico permits and does not regulate home education (López, Tenorio, & Fonseca, 2017).

## **Comparative Study**

Comparative home education research is in its infancy given the limited but growing empirical base from which it can work, but already some intriguing generalizations have been posited. One study looking across multiple nations finds that the more restrictive the regulatory climate, the more entrepreneurial home educators tend to be, using innovation, risk-taking, and struggle against government to meet their objectives (Gofen & Blomqvist, 2014). Another set of studies has called for consistency in regulatory climate across nations, especially those in the European Union, whose Court of Human Rights has thus far deferred to national policy on the issue (Allan & Jackson, 2010; Koons, 2010; Kostelecká, 2017).

## XII. Conclusion

As Petrie (2001) contends, governmental policy regarding homeschooling should be informed by careful, well-reasoned research. Yet homeschoolers are often urged by their fellow practitioners and movement leaders to avoid participating in research studies (Kaseman & Kaseman, 2010; Stevenson, 2009; Webb, 2011), unless the study is sponsored by homeschool advocacy groups themselves (Ray & Smith, 2008). Public dialogue and political decision making about homeschooling should not be guided by either advocacy-based research or isolated anecdotes, the latter of which tends toward the extremes of self-taught geniuses or children locked in cages. As noted throughout this review, many questions about homeschoolingparticularly about "the average homeschooler"-remain unanswered. Nevertheless, a substantial and growing body of scholarship is available to inform policy decisions. Comprehensive studies that provide data about homeschooling writ large are admittedly scarce, but taken as a whole, the partial glimpses provided by the 469 texts cited in these pages-and many more not included here-sketch a useful portrait of homeschooling philosophies, practices, and outcomes. And with more than 175 doctoral dissertations from the past decade focused on homeschooling, it seems likely that scholarly research will continue to grow, and with it our understanding of the practice and its implications for society.

In what ways has the research base improved since the first version of this review in 2013, and what kinds of research will be especially useful moving forward? We noted in 2013 that microstudies based on convenience samples were already common and provided only limited insight regarding the homeschool population more broadly. We suggested that our understanding would benefit from new methodologies and research questions, and identified two areas of weakness in the scholarly literature. First, very few quantitative studies employed random

sampling or provided enough data and subjects to allow the researcher to control for background variables. This lacuna has narrowed somewhat with the use of large datasets such as the National Study of Youth and Religion and the National Survey on Drug Use and Health. But as noted in Section III, much room remains for more sophisticated analysis of those data, particularly the National Household Education Survey. The second weakness we identified in the homeschool research base was the lack of rigorous longitudinal data that would enable us to probe the long-term impacts (or lack thereof) of homeschooling on adult lives. While the number of retrospective studies of homeschoolers-turned-adults has grown over the past seven years, most have still been smaller scale convenience samples.

In addition, one deficit related to analysis of large datasets and longitudinal data remains largely unaddressed: we need to account for the number of years any given child has been homeschooled versus conventionally schooled, and we need ways to measure the many forms of flexischooling that are employed by parents and their children. The revised structure of the National Household Education Survey in 2019 should help clarify these variables and hopefully provide more nuanced insight into the many variations of homeschool practice.

As we had urged, the research base has grown beyond topics such as academic achievement, parental motivation, and socialization, and we are beginning to understand more about homeschooling among various ethnic minorities, among children with special needs, and amidst the proliferation of new media—but much remains to be done. Finally, we still need comparative research in the international context to broaden our understanding of homeschooling across cultures and geographies as well as the various ways that government regulations might support or hinder successful homeschooling.

While the number of homeschoolers may have plateaued in the United States, it appears to be expanding across the globe. Nations and communities will continue to grapple with the question of how best to balance the interests of children, parents, and society in the realms of education and schooling. Tensions between the relative domains of the state and family run strong in the United States, and in some ways track political affiliation-although with the irony of libertarian conservatives and anti-establishment liberals making strange bedfellows in their resistance to state oversight of home education. While homeschooling may not be as overtly politicized in other countries, this could be as much a function of homeschoolers' lower numbers and influence elsewhere as it is a by-product of a unique political dynamic in the United States. Even now countries enact markedly different interpretations of the UN Convention of the Rights of the Child (which the United States has not ratified), and government involvement in schooling ranges from nearabsolute control (e.g., in Germany and Sweden) to the minimal regulation typical of many U.S. states (e.g., in the United Kingdom). Further complicating questions of state oversight will be the inevitable proliferation of educational alternatives enabled by the accelerating role of technology in education. Technology will also increasingly influence homeschooling itself in profound ways—not only in terms of instructional content and delivery, but also by facilitating communication among homeschoolers for both support and political mobilization.

Most fundamentally, homeschooling will continue to challenge modern conceptions of schooling, education, and the family. Conventional categories of schooling, curriculum, and achievement will continue to blur, shifting not only participants' conceptions of education but very likely broader society's as well (Lees, 2011). Homeschooling will remain fertile ground for research—not only as a fascinating educational phenomenon in and of itself, but also for what it pushes us to consider about the purposes of education more broadly.

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