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A critical analysis of standardized testing in speech and language therapy

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Abstract

Purpose: This article critically interrogates the history and the current practice of standardized assessment in speech and language therapy. Speech and language assessments utilizing standardized linguistic norms are a critical tool for constructing disability and controlling disabled individuals. Such practices are rooted in a medical model of disability where the linguistic practice(s) of the individual is pathologized to create normalcy and disorder.

Method: We examine how these practices are anchored in eugenics and the racist logics of intelligence testing in which racialized populations were rendered as linguistically and biologically inferior.

Results: The article shows how ideologies governing these assessments are influenced by racism, ableism and the nation state and serve as foundational mechanisms to enable surveillance and capital production. It demonstrates how standard language ideologies are central to standardized testing. Speech and language therapy practices upholding these ideologies contribute to unrestrained wealth generation for the testing industry.

Conclusions: The article ends with a call for clinicians, educators, researchers, to critically examine the relationship between standardized assessment, race, disability, and capitalism in speech language therapy. This process will contribute towards dismantling the hegemonic role of standardized assessment in oppression and marginalization of speech and language disabled individuals.

Key words: Standardized testing, critical analysis, racist ideologies

Introduction

It has been argued that speech and language disabilities were discussed as ancient as the early and Middle Ages (e.g., Duchan, 2002). For example, the ancient Egyptian, Greek, Mesopotamian, and Roman civilizations had references to speech disabilities and have utilized tongue and voice exercises as remediation techniques. During Middle Ages, Arab cultures have made advancements in remediating articulation problems using phonetic placement and drill. The Arabs were also progressive in including individuals who have speech and language disabilities as part of the mainstream Muslim cultures (e.g., Duchan, 2002 for a detail on the history of speech and language therapy). In early modern times there were explicit efforts to teach sign language, written language, and lip reading to Deaf individuals in many parts of Europe (e.g., France). In ancient India, significant advancements were made to codify speech, language and hearing disabilities and remediate them based on Ayurveda and medical principles (see Savithri, 1988 for a survey of Sanskrit literature on speech and hearing sciences). However, in Europe, the transformation of speech and language therapy as a discipline occurred sometime after the Second World War (e.g., Duchan, 2002). The emergence of modern speech and language therapy as a disciplinary field has occurred in a world during British and Euro-American colonialism. The profession was expanded in the early part of the 20th century to remediate communication difficulties in soldiers following a head injury. Given that speech and language therapy addressed a range of disabilities from medical (e.g., head injury, stroke) to educational (e.g., learning disabilities), several different professionals including neurologists or teachers of speech and drama were involved in the remediation process (e.g., Stansfield, 2020).

The early part of the 20th century was still witnessing a rise in industrialization and economic production. The logic of economic production was not limited to creating profits but also viewed

citizens as agents of economic productivity (e.g., Hursh, 2004). This meant that speech and language abilities were key commodities for capital production (St.Pierre & St.Pierre, 2018). “Speaking Well” had an economic value because it was a key capital for the successful functioning of the market. Disabled individuals were either economically exploited or excluded from the market because their bodies were non-conducive for economic production (e.g., Russell, 2019). Industrialized societies (e.g., Britain) viewed any form of disability as a barrier for nation building and profit generation (Barnes, 2018). The logic of economic production gave critical legitimacy to speech and language therapy as a discipline because it focused on the remediation of “pathology” inherent in disabled individuals. The remediation was intended for disabled individuals to achieve the ideal status of able-bodiedness¹.

The construction of able-bodiedness was based on White^{1a} European standards of physical abilities. This was not accidental because European colonialism enabled construction of different races and disabilities as separate categories and individuals in these categories were viewed lesser than the White European men. It is critical to point out that the intersection between race and disability created further differences and oppression (e.g., Grech & Soldatic, 2015). This meant that a Black disabled individual was oppressed for both race and disability. Standardized testing of speech, language (and cognition and communication) was developed within this context to estimate how speech and language abilities of disabled individuals (and often disabled individuals of color) were deviant from the ideal able-bodied norm of White European men (see the seminal work of Gould, 1996; Alland, 2002 critiquing the idea of biological determinism and the inherent superiority of White Europeans). Standardized testing became the most critical tool

^{1a}In consistent with the diversity style guidelines, we are capitalizing W in White to highlight whiteness and reject racial neutrality (Diversity Style Guidelines, n.d).

for calculating speech and language norms and for creating labels of disorders and pathologies. Thus, standardized testing was used to hierarchically grade people based on their supposed difference from the White European norms in cognition and language abilities. The White European norms on cognition has been projected as superior and ideal—for example, Canadian Psychologist John Philippe Rushton claimed that the cranial size of Whites is larger than Blacks (Southern Poverty Law Center, n.d). It was argued that Blacks are at the bottom of cognitive ability and IQ compared to Whites and this was due to genetic difference between the two racial groups (e.g., Rushton & Jensen, 2005). Although Rushton’s work was debunked for its scientific racism, conflating race with genetic homogeneity and White supremacy, he was a highly influential figure especially with his advocacy in media for fueling anti-immigrant and xenophobic sentiments. He was elected as a fellow of both American and Canadian Psychological Association (Hur & Lynn, 2012). The Southern Poverty Law Center has identified him as racist and a White nationalist (Southern Poverty Law Center, n.d). This history indicates how harmful ideologies of racism and superior European cognitive norms have been supported by institutions and propagated as science to marginalize and dehumanize Black individuals. In language, these ideologies are enacted to police practices of Black and Brown children and their linguistic features. This is done through labeling minoritized children as Standard English learners through standardized testing and in need of remediation to appropriate their language to White norms (Rosa & Flores, 2017). Similar to standardized testing utilized in the field of education, speech and language tests have been projected as scientifically objective to achieve equality and “effective communication” for all. With the creation of pathology labels, standardized testing has evolved as a tool for exclusion and oppression of disabled identities. It

also acts as a tool for pathologizing Black and Brown children without cognitive, language, communication, and behavior impairments because of their embodied differences such as race.

This paper critically interrogates the racist, ableist and capitalistic ideologies inherent to standardized testing and how they embody a hostile form of market driven economics for profit generation. Although there are a wide range of standardized tests available to measure speech and language skills, this paper will mostly limit its discussion to the testing of language abilities in children. It will also primarily focus on the history and development of standardized testing in the USA whilst also providing references to the UK^{2a}. We will first provide a brief history of standardized testing in education, its relationship with market interests and interrogate the standard language ideologies embedded in standardized testing. Foregrounding this history and context is critical for our discussion on how standardized testing in speech and language therapy borrows and appropriate ideologies from education and utilizes them for the creation of disorder labels and disability markets. We end the article with a call for speech and language therapy practitioners to engage in criticality and reflexivity to disrupt systems that perpetuate standard language ideologies, racism, and degradation of Black and Brown bodies.

^{2a}This is because the development of these tests is not disconnected from the British and American colonialism and their role in shaping global education and economic policies. This does not indicate an immediate translation of British and American experience to other global contexts. Readers are encouraged to interrogate standardization and the development standardized test materials within their local contexts. However, such local contexts are linked to the global economy following the collapse of Soviet Union, rise in globalization and neo-liberal policies and deregulation of markets. The neo-liberal policies have exerted significant influence on global educational policies and expanding the US interests – for example, globalization in education, the flow of international students from global south to the United States and to other northern countries. Testing industries such as educational testing service plays a key role in profiteering from an unlimited globally connected market utilizing standard language ideologies (e.g., Graduate Record Examinations, Test of English as a Foreign Language) (see Marginson, & Van der Wende, 2007 for the impact of globalization in higher education).

Brief history of standardized testing

“Standardized tests have become the most effective racist weapon ever devised to objectively degrade Black and Brown minds and legally exclude their bodies from prestigious schools.”

Ibram X. Kendi

In the US, it is widely believed that Horace Mann who was the education secretary for the state of Massachusetts introduced standardized written exams in 1845. This was developed to counter the allegedly flawed oral testing in children (e.g., Gallagher, 2003). It was suggested that standardized testing in education was developed based on democratic ideals given that these tests are objective and promote equality (Gallagher, 2003). One of the rationales behind the introduction of these tests assumed that the quality of the education was deteriorating. This rationale guided the US education testing and policy for more than 100 years. Even as recently as 1983, the report “A Nation at Risk” by the US National Commission on Excellence in Education raised alarms that the schools were performing poorly on testing and the future of American innovation was at risk (e.g., Guthrie & Springer, 2004). Although this report was found to be wrong later, the Ronald Reagan government (presidential years: 1981-1989) instituted a series of policies that would make the federal government directly involved in the educational policy and testing (see Kamenetz, 2018 for a report on this). Further, policies of Bill Clinton (presidential years: 1993-2001) and George W. Bush (presidential years: 2001-2009) reaffirmed these commitments especially with the latter passing the landmark “No Child Left Behind Act.” This act not only placed a greater importance on improving standardized test scores but spent almost 2.8 billion dollars for improving teacher certification and quality (e.g., Holmes, 2009). In the UK too, standardized testing is administered by the Standards and Testing Agency which is controlled by the UK Department of Education (see UK Department of Education, 2018).

Standardized testing in the UK schools has a long history, with successive governments placing a rapidly increasing subscription to them since the introduction of a national curriculum in the late 1980s. Tests have become a key policy technology of the broader ‘standards agenda’ which characterizes contemporary education in the neoliberal² education market, with the increase in tests running parallel to heightened teacher surveillance and accountability (see Pratt, 2016). These policies indicate that greater state control is exerted for standardized testing and anxieties associated with lower test performance are viewed as hinderance to advancement of innovation and economic production of the nation-state.

The racist origins of standardized testing

Whilst standardized testing is a critical part of modern liberal education, it is well-known that there is deep inequality and racism entrenched in these tests (e.g., Rosales & Walker, 2018). The racist logic that underpinned standardized testing can be traced back to European colonialism. Victorian era eugenicist³ Francis Galton argued in his book “hereditary genius” that the Anglo Saxons were two grade intellectually superior to the “negro race.” Charles Darwin, his cousin, endorsed and praised the book of Galton and argued that the Australian Indigenous people were closer to gorillas than to the White Caucasians (e.g., Roy, 2018). In another example, T.B Macaulay, a colonial officer to India in his famous 1835 *Minute on Education* stated that a single shelf of European literature was equivalent to the literature of India and Arabia combined (National Archives of India, 1965). This indicates the intellectual superiority of European men over Indian or Arab men as well as the superiority of English and other Western European languages over Sanskrit or Arabic. In modern times, these ideologies are manifested in educational policies and classrooms where low-income and racialized children are remediated for their language practices. Working-class and racialized parents are blamed for exposing their

children to purportedly inadequate language and the so-called ‘word gap’ which arises out of this, especially when compared against White counterparts (Cushing, 2022). These beliefs are rooted in eugenics and colonialism because of the assumption that any language practices of Black, Brown, and Indigenous communities are inferior, less intelligent and in need of remediation.

The history of denigration and dehumanization of Black, Brown, and Indigenous people points out that the idea of intelligence and knowledge as biologically determined and transmitted through races was justified during colonialism. Indeed, Francis Galton (1822-1911) argued that intelligence is not determined by geography, culture, or climate but by heredity and race (e.g., Herrnstein, 1995). Much later, similar claims were made by Carl Brigham (1890-1943), a psychologist, who advocated for policies that would prohibit intermingling of different races because of the supposed superiority of the White Nordic race in IQ (Rosales & Walker, 2018). Herrnstein and Murray (1994) introduced the controversial bell curve which is based on standardized IQ testing. They argued that the intellectual ability of Blacks was inferior to that of Whites and other races. Thus, utilizing standardized testing these authors have justified eugenics and White supremacy. Both Brigham’s and Herrnstein and Murray (1994) racist claims would have significant impact on the US education policy. Carl Brigham had close connections with the US military, and he was commissioned to develop an IQ test. He developed Army Alpha Test which was used to measure the intellectual ability of soldiers in World War 1. Carl Brigham was later hired by Educational Testing Services and Harvard University to develop a test for admissions in colleges. He expanded his Army Alpha Test and developed the early version of the Scholastic Assessment Test (earlier Scholastic Aptitude Test; SAT). His tests involved identification of few shapes but also word familiarity that would be biased in favor of English-speaking White Anglo Saxons (see Perez, 2002 for a brief history on this). Note that Carl

Brigham was a known racist and eugenicist who believed that Blacks had the lowest intelligence compared to all other races. This idea was further reiterated and popularized by Herrnstein and Murray (1994) who not only ordered intellectual ability of races based on standardized IQ testing but also claimed that social inequality is a result of poor women producing babies who are low in their IQ.

The efforts to construct standardized assessment continued even after the World War 1. For instance, during the Cold War, standardized testing transitioned as a tool for US geopolitical influence (e.g., Shepherd, 2017). The concept of brain power emerged during the time of post war anxiety. This is because the United States needed to create governable and obedient populations who would serve toward the interests of national goals specifically of geopolitical control. Individuals were ordered based on psychometric skills related to science and engineering as advancement in these areas were key for controlling global power. This type of sorting of individuals based on psychological tests was a national project introduced in the schools. Shepherd (2017) argued that private corporations and philanthropic organizations such as the Rockefeller foundation invested heavily in the idea of brain power and created educational and military testing with the support of psychologists. Thus, a similar logic of hierarchical ordering of individuals utilized in military was extended and integrated within education by state, philanthropic organizations, and private corporations. This was a way to identify individuals who can contribute to the US control of global geopolitics as well as for the expansion of the market (see Shepherd, 2017 for a detail on the relationship between standardized testing, education, war, and geopolitical control of the USA).

This history indicates that standardized testing is neither objective nor based on meritocracy but is rooted in colonialism, war, and racist thinking. Although standardized tests have been claimed

to be objective and meritocratic, these tests have been used to either include or exclude underrepresented and poor students. For instance, Au (2013) critiqued both the claims of objectivity and meritocracy in standardized testing. The claim of objectivity suggests that the test is equal and fair to all individuals whereas meritocracy is promised to ensure opportunities for individuals regardless of their social class, wealth, or race. Au (2013) argued that data from high stakes standardized testing has a 35% error rate for teaching effectiveness and a 25% error rate for the three-year data for student performance. These high percentages of error show standardized testing are not a reliable measure of true student aptitude (see Schochet & Chiang, 2010, U.S Department of Education report on standardized test scores). It is also well known that high school grades rather than standardized testing are a good predictor of success in college (Geiser & Santelices, 2007). The idea of meritocracy is critiqued as research demonstrates wealthier students who get coached perform better on standardized testing (e.g., Perez, 2002).

Standardized testing, capitalism, and market interests

What is often not discussed in the debate on standardized testing is how capitalism⁴ drives the testing industry that controls testing at school and college level. Hursh (2004) argued that neo-liberalism has destroyed the localization of education to one that promotes standardized testing to prepare individuals for a market driven global economy. This world view hardly acknowledges individual knowledge or sharing of knowledge to the local community but views individual as a raw material capable of economic production. This logic that originated during industrialization and colonialism is fused with capitalism where the value of education is limited to profit that the individual may generate. Standardized testing provides a key role by providing the market with individuals who are likely to fill their economic demand. The application of standardized tests is not limited to school and college education but also to immigrant students to

countries such as the US and the UK. Thus, standardized testing widens the global inequality by disadvantaging students whose English is not their first language or students who are economically disadvantaged. In addition, by accessing immigrant students, standardized tests tap into a global economy to maximize their profit. The maximization of the wealth often happens through penalizing immigrant students so they are forced to take the tests multiple times to improve their scores. It often negates the intersectional identities (e.g., race and class) of these students within the global education as they are marginalized because of their “cultural and racial differences” as well as limited availability of financial resources or loans (see Yan & Berliner, 2013). The constructs (e.g., speaking, listening, reading, or writing) measured in tests such as English language proficiency are rooted in monolingual ideologies and not valid for speakers of World Englishes or individuals who use sign language(s). Yet these tests are used to dictate policies governing immigration, education, access to workplace and citizenship throughout Australia, New Zealand, Europe, and North America (Roever, & McNamara, 2006).

The racist ideology of these tests is layered with market interests, and they are used for wealth generation and as tools of exclusion for poor and disabled students and immigrants (also see Kendi, 2016). Wealth generation is critical because both state control and market interests indicate a mutually beneficial relationship between the state and the testing industry. There is a deliberate attempt by the state and the market to remove education from the local and community interests and place it under the preview of federal laws and global economy (e.g., Au, 2013; Hursh, 2004). The alliance between a capitalist nation-state and the testing industry was further evident during COVID-19 pandemic where the testing industry claimed significant “learning loss” in children. A recent Forbes report indicated that, in the US, a learning loss is predicted in the form of poor performance on standardized testing, attrition of previously acquired knowledge

and loss of jobs and career opportunities (Bello, 2021). The report also showed that 6.5 billion dollars were released to address the learning loss by the US Federal government. The testing industry proposed more assessment and learning via digital tools as solutions for learning loss as these tools would feed into the market interests and maximize their wealth. Recall that this type of fear-based economy has been practiced before in the US especially with the release of “A Nation at Risk” report. What is less known is the precise profits the testing industry makes by inducing fear into the market. The figures remain hidden, however a Huff post report indicated that the standardized testing industry has an overall value that ranges anywhere between \$400-\$700 million (Stauffer, 2017). A 2002 PBS report suggests that there are four big companies that control the testing (see Table 1).

Table 1: Annual sale of the Big 4 standardized testing industry

Big 4 Testing Industry	Annual Sale	Sales from education
Harcourt Educational Measurement	5.6 billion	301 million
CTB McGraw Hill	4.2 billion	34 % of overall sale = 1.42 billion
Riverside Publishing	2.2 billion ^a	Unknown
NCS Pearson	629.5 million	202.4 million

Notes

^a indicates overall value of the company than the annual sales value.

These numbers must be interpreted with caution as these statistics are from nearly two decades ago. There is a high likelihood of change in these companies' market position including their annual sales, net worth and the names of the parent companies. A full detail of these statistics can be accessed via <https://www.pbs.org/wgbh/pages/frontline/shows/schools/testing/companies.html>

Although this report is from two decades ago, it provides an idea of wealth amassed by the testing industry through the exploitation of students and in collusion with the state. The wealth is likely to have increased significantly especially after the rise in standardized testing in schools and colleges. This is also because of the opening of the global market and the increase in immigrant student testing in the last two decades. The examples from the history and the statistics strongly suggest a direct relationship between the nation-state and the testing industry. Whilst the nation-state utilizes the testing as a surveillance mechanism to monitor academic progress and divide its citizens based on psychometric performance (e.g., Rubin, 2011), the testing industry enable the surveillance to feed into the nations demands of economic productivity and utilize that data for wealth generation.

Standardized testing upholds standard language ideologies

Standard language ideologies represent deeply embedded and durable beliefs about idealized standards in language, where the perceived need for uniformity imposes linguistically arbitrary borders in and between languages. These borders work to produce dichotomous categories in language, such as ‘correct’ or ‘incorrect’, and ‘proper’ and ‘improper’ (Milroy, 2001). Standard language ideologies are exclusionary in that they marginalize speakers deemed to produce “non-standard” patterns and privilege social groups who are deemed to produce ‘standard’ patterns. Any ‘standard’ language is a social and colonial construct, largely designed by White, middle-class, literate men, and is here conceptualized as a mechanism to maintain White supremacy (see Cushing, 2021; Kroskrity, 2021). Indeed, the origin of standard language ideologies is rooted in colonialism where uniformity was the driving force for domination and economic production. For example, in English colonization English was the language of rationality and science. Other European colonization (e.g., Dutch, French, Spanish, Portuguese, Italian, German) was done through imposing the majority language of these countries. The colonized were forced to learn these languages as part of the European mission to civilize the uncivilized (Mies & Shiva, 1993). Linguistic ideology was one of the factors that justified colonial violence because it viewed Indigenous people, and their languages are at the bottom of the evolutionary ladder. This is the same ideology that justified removal of children from families of Indigenous Australians and violence against Indigenous people of Canada (see for example, AIATSIS, n.d for history of stolen generation). Indigenous people, their cultures and languages were thought to be disposable. In 1830 the Indigenous people of Africa and America were excluded from human species as they were believed to be sub-humans. Killing an Indigenous man in Canada was reward worthy (see Mies & Shiva, 1993). Colonial ideologies leading to violence are critical to

the discussion of standardization. This is because the psychological violence is still prevalent through cultural domination, most importantly by assuming the superiority of the White man in almost every walk of contemporary life. The material effects of such superiority on language are that White man's language (e.g., English) has economic value because of the greater intrinsic worth granted to the White body. As Kroskrity (2004) pointed out, language ideologies are constructed to serve the interest of a dominant social group for economic reasons. These ideologies are not only imposed on the colonized people outside Europe but also to people who are perceived to be the other within Europe. For example, the state and its institutions have enacted policies that erased the heterogeneity of cultures, nations, and languages in many European countries. Similar to the persecution of colonized people globally, the European institutions have promoted homogeneity and singularity as a way to uphold ideas of federalization and a single nation state. This has resulted in the persecution of minoritized, for example, the Roma people across Europe or the Indigenous Sámi communities in Sweden (see Theo Goldberg, 2006 for a detail on the racial European state).

In the UK and USA, these ideologies emerging from colonialism have both race and class consequences. Whilst in the UK, this is mostly manifested through devaluing working-class and immigrant English(es) and language(s) (intersection of class and race), in the USA language ideologies intersects with race, devaluing and dehumanizing Black and Indigenous languages. Flores and Rosa (2017) argued that the intersection between race and language—raciolinguistic ideologies—are systematically enacted by the state to stigmatize the language use of racialized children. According to Flores and Rosa (2017), these raciolinguistic ideologies are a characteristic of a colonial nation-state that is claimed to espouse modernity but impose White supremacy. Mignolo (1996) defined “linguaging” as moving away from the understanding of

language as fossilized structures of phonological or syntactic rules to languaging as a cultural practice. Colonialism has always seen fluid language practices of the communities as a threat to national identity. Flores (2013) pointed out that erasing the heterogeneity in language practices of communities who have experienced colonialism is central to the creation of nationhood and a single standard language. Standardized testing that is claimed to measure cognitive or language abilities of students epitomize standard language ideologies of the nation. These tests marginalize racialized bilingual children by castigating their language and abilities as a lack (academic gap) and demands assimilation into White middle class norms. The human impact of this process is enormous. As Baker-Bell (2019) argued, Black students' language is deficient as they deviate from the linguistic standards of White mainstream English. The students will internalize the oppression in the classroom and in the wider society, and they develop attitudes that are not conducive to their socio-emotional growth. Cunningham (2018) argued that standardized testing is a key tool for a capitalist market that is systematically aimed at erasing the knowledges of the oppressed. Standardized testing aims to capture the data useful for a competitive market designed by White men, thus contributing to the epistemological erasure of all other knowledges that is deemed inferior by the market (e.g., Cunningham, 2019). Epistemological erasure in this context refers to the erasure of knowledges that are marginalized or deliberately eliminated (e.g., the real world, community or household knowledges, language practices of students of color that are crucial for academic achievement and well-being). This is done to uphold dominant standard language or standardized testing ideologies (see Cunningham, 2019 for a detail on this). Standard language ideologies are at the center of standardized testing, both emerging from colonialism, sustained by the nation state and integrated within capitalism as a crucial tool for economic profit.

Standardized testing in speech and language therapy

Biased and racist testing utilized in schools are often justified for labelling Black and Brown children as having disabilities and pushing them into school to prison pipeline (Annamma, Morrison, & Jackson, 2014). Whilst discussions on the relationship between standardized testing, racism and disability have occurred in the field of special education (Annamma, Connor & Ferri, 2013), how standardized testing is utilized to construct disability is rarely discussed in speech and language therapy (Yu et al. 2021). This is crucial because speech and language therapy as a profession is built to remediate disorders and pathologies of speech, language, and communication. Standardized testing is a critical tool for this and is applied carefully to create binaries of normal vs disorder/pathology or typical vs atypical. Such binaries are brought within the preview of a medical model⁵ where researchers in speech and language sciences often examine the biological determiners of disorder/pathologies through genetic studies (e.g., Newbury & Monaco, 2010). By identifying the genes responsible for language disorders, these studies pathologize disability as a disease or a medical problem rather than socially constructed reality and place standardized testing as an objective medical tool to identify disorders^{3a}.

Although the precise history of the evolution of standardized testing in speech and language therapy is unknown, both norm and criterion referenced tests are common in the field. These tests either utilize “normative language data” based on factors such as age or list specific language skills children are supposed to achieve by a particular grade (ASHA, n.d). Recall Carl Brigham who developed one of the first IQ tests to hierarchically order different races based on intelligence. Standardized testing in speech and language therapy utilizes similar ideology to

^{3a} Concerns on genetic studies examining genes responsible for “disorders” or co-occurring conditions have increased recently. A recent example is the spectrum 10K study examining autism in the UK. Autistic community have argued against the study for perpetuating eugenics and deflecting from the real issues autistics face such as marginalization (see Chapman, 2021).

hierarchically order children either based on presence/absence/delay of a set of socially constructed speech and language skills. This process violates all principles of justice and panders to the wealth generation of the testing industry. In the following section, we critically interrogate standardized testing in speech and language therapy on two dimensions a) standardized testing as a hegemonic⁶ process for creating pathology and disorders and b) standardized testing as a tool for the creation of a disability market.

Standardized testing as a hegemonic process for creating pathology and disorders: Disorders are constructed within speech and language therapy utilizing discrete linguistic variables to create normativity and pathology. By discrete linguistic variables, we mean the idea of language as defined by traditional linguistic units such as phonology, morphology, syntax, semantics, and pragmatics. Cognitive skills such as attention or memory abilities are often included in the testing as children who are labelled as having language disorders are argued to show deficits in these areas (e.g., Blom & Boerma, 2020). These linguistic or cognitive variables are mapped onto a standardized test to create a set of norms, for example, based on age. A good example of common tests used to mark “language abilities” in children is Clinical Evaluation of Language Fundamentals (CELF) (Wiig, Semel, & Secord, 2013) and Peabody Picture Vocabulary Test (PPVT) (Dunn & Dunn, 2007). CELF has sections measuring receptive, expressive language abilities or memory skills. PPVT is a test that is widely used for measuring receptive vocabulary in children. Similar to tests used in education, these tests are constructed based on testing a large number of US White middle class children (also see Leaders Project, 2014 for the inherent bias in tests such as CELF). However, the logic of standardized tests such as CELF or PPVT is based on a Gaussian distribution. The Gaussian distribution (also known as normal distribution) is generally presented as a bell curve where the data closer to the mean occurs more frequently than

data farther away from the mean (Annamma et al. 2013). Annamma et al. (2013) argued that construction of normal is ideological with normal appropriating as good or ideal. Any deviance in comparison to the normal is a based-on ideologies of race, language, intelligence, and ability. What is presented as the norm within these tests are performances of specific language or racial groups (monolingual middle-class White children) that is deemed to be ideal and universally applicable. Difference and disorder are constructed through this ideological lens where data farther away from the mean of Gaussian distribution is recommended for exclusion or remediation.

The applicability of these tests in Black and Brown children due to “cultural differences” is a point of contention (e.g., Gould, 2008). For example, utilizing standardized testing, the language use of the Australian Indigenous children of Bunya community are constantly medicalized and their usage of Australian Aboriginal English is pathologized (Gould, 2008). The negative ramifications of these tests cannot be cast away by simply limiting the discussion to a mere cultural difference. This is because the pathologization of Australian Indigenous children is not due to any cognitive or linguistic impairments but because of their perceived differences in embodiment (i.e., race). In addition, by reducing language as a technical skill, these tests conform to the notion of language as a set of arbitrary linguistic units determined by a select group of researchers who design and construct these tests. This type of hegemonic process places no emphasis on the historical realities of languages or their evolution (e.g., Bird, 2020). For example, the various forms of named varieties of English (e.g., Black English, Indian English, Australian Aboriginal English) are a product British colonization of Africa, USA, India, and Australia. These languages were evolved because people were either enslaved and brought to a different continent or due to the imposition of settler language (e.g., English). Evolution of such

language varieties are complex, and communities have sustained and evolved these languages as tools for their own liberation, creativity, and sustenance. By ignoring the complex history and evolution of these languages, standardized tests such as CELF impose a set arbitrary norm onto Black and Brown children. The administration of these tests on minoritized children is akin to a colonial logic where children that deviate from these majority norms are categorized as “disordered.” Translating or constructing these tests into minoritized children’s languages does not solve the problem as it still stems from treating language as a set of discrete variables and not as a product of colonialism and cultural domination. Oppressed communities, especially communities where Black and Brown children grow up, have the right to self-determination for using their languages. Similarly, they have a right to reject the norms imposed on them.

The problematic aspect of standardized testing is not limited to undermining historical legacies of colonialism in shaping the identity of minoritized languages. It fundamentally rejects any paradigm that is developed outside a positivist⁷ science and a medical model. Speech and language abilities are envisioned utilizing a reductionist idea where communication can only be possible through hearing and speaking (oral language/oral language comprehension and expression). Receptive/expressive language or vocabulary which is usually measured through standardized testing act as a tool for measuring uniformity—meaning it rejects diversity in communication and centers rigidity and homogeneity. This means that a dominant worldview that originated from colonialism fails to consider that communication is not just a set of linguistic variables that can be manipulated and located within the human mind for economic production. What is labelled as “disordered or pathologized” is infact a variability that rejects the reduction of communication to mere verbal or oral communication (Henner & Robinson, 2021). Henner and Robinson (2021) argued that whilst it would be difficult to assume that no language

can be disordered, disorder or impairment exist only because of material and social structures failing to understand variability in communication as natural part of human diversity.

Standardized testing acts as a tool to maintain the supremacy of the arbitrary norms that are used to grade children based on their vocabulary or receptive language abilities in order to create a disorder/pathology label.

Standardized testing as a tool for the creation of a disability market: Although we have tried to place standardized testing in speech and language therapy in a historical and social context, it is critical to further examine how creation of disorder and pathology benefits the market. It is evident from the field of education that the testing industry is invested in maximizing their wealth rather than improving equality and social justice. Whilst the testing industry marginalizes students of color by labelling them as having disabled, it makes further profit by supplying standardized testing to professions that are involved in the remediation of language disorders. For the testing industry, as the old markets shrink, carving out new areas for economic production is important. Disorders are a key market for the industry as it would enable them to create new tests and tools not only to diagnose a new disorder but also to remediate them (Naggy, 2022). This type of expansion of disability market is also a key surveillance mechanism for the state. The intersection of surveillance and market is a prime example of surveillance capitalism (Zuboff, 2019). In surveillance capitalism, wealth generation happens through treating humans as data, tapping into our most intimate aspects of life—feelings and emotions—as they provide rich customized data that can be sold back to us based on monitoring our behavior (Zuboff, 2019). This surveillance would enable the testing industry to treat disabled individuals as raw material for wealth generation. Take for example, Affdex, a company that builds artificial intelligence on emotions and mental states utilizing data from autistic individuals

(Naggy, 2022). Researchers involved in this company have developed a series of computers that they consider excellent for computing and programming, however, as emotionally non-intelligent. Development of this technology is fixated on the idea that autistic individuals are good at computations but lack emotional intelligence and shows deficit and disorder in the theory of mind (Baron-Cohen, 1995; Tager-Flusberg, 2007). Whilst dehumanization of autistic individuals is used as a rationale for developing computers, more recent research has called the theory of the mind into question (e.g., Milton, 2012). Theory of Mind (ToM) assumes that there is a normal idealized standard for emotions and empathy and these standards must be exhibited in social contexts. People who deviate from standardized testing measuring ToM are pathologized, stigmatized and labelled as having impaired social communication. Affect developed many artificial intelligence technologies, most famously, emotional prosthetics that allow autistic individuals to wear and track their behavior and social communication. Emotional prosthetics have been commercialized as a technology for improving emotions and social communication in autistics through providing feedback and correction to fit in with the social norms of the non-autistic world (see Naggy, 2022 for a detail on this). This example clearly illustrates a) questionable theories on autism are used as rationale to push new technologies and b) there is a complex intersection between standardization, disability, surveillance, and wealth generation. We argue that disabilities such as autism provide a crucial market for companies to expand their wealth, and these markets are based on arbitrary standards set for behavior, communication, or cognition (e.g., Milton, 2012). These markets are not only expanding for autistic individuals but also to improve attention in children utilizing surveillance technologies such as Nervanix as a tool to improve attention, brain power and learning (Nervanix, n.d) or LENA to monitor language use of parents through measuring input (LENA, n.d). LENA is a

recording device controlled by the clinician or researcher, physically strapped to children as young as two months old and is aimed at monitoring and recording the language use of parents. Poor working class and minoritized mothers are penalized for using “less quality input” with their children resulting in an alleged ‘word gap’ or at risk of a language disorder (Allen & Spencer, 2022). Remedial programs are then applied and monitoring the language use through LENA to lift the children out of a perceived word gap or false pathology/disorder and bring them closer to the standards (vocabulary) of middle-class White children. What is seemingly a kinder and a just approach is a ruthless imposition of White standards rooted in policing racialized and working-class families, devaluing variability, and creativity in their language use, whilst opening endless spaces for public funding of research based on deficit thinking and wealth generation for the testing industry (also see Cushing, 2022 for a critique on word gap ideologies and policies in England’s schools; Yu, et al. 2022 for the imposition White standards on accents).

This type of deficit thinking, by selecting and grading individuals based on standardized norms and testing, does not consider the agency of the disabled subjects. This is crucial for speech and language therapists as they position themselves as the ultimate authority to assess and test the language disorder resulting in the unequal accumulation of power within the clinician. What is invisibilised here is the particular location of the speech and language therapist—as experts in administering standardized testing, they situate themselves between the state and the testing industry—a powerful connector that makes the surveillance of the state and wealth generation of the testing industry possible. In order to further examine the economic profits of the testing industry as it relates to speech and language therapy, we have selected ten standardized tests that are routinely applied to evaluate language abilities in children.

Table 2: Common standardized testing for language abilities utilized in speech and language therapy

No:	Standardized test	Publisher	Price on the publisher's website
1	Expressive Vocabulary Test (2 nd Edition)	Pearson Assessments	\$279.90 USD*
2	Clinical Evaluation of Language Fundamentals Preschool Spanish (2 nd Edition)	Pearson Assessments	\$279.90 USD*
3	Comprehensive Test of Phonological Processing (2 nd Edition)	Pearson Assessments	\$374 USD*
4	Expressive Vocabulary Test (3 rd Edition)	Pearson Assessments	\$242.30 USD*
5	Mullen Scale for Early Learning	Pearson Assessments	\$1081.80 USD*
6	Preschool Language Scales English (5 th Edition)	Pearson Assessments	\$366 USD*
7	Preschool Language Scales Spanish (5 th Edition)	Pearson Assessments	\$406 USD*
8	Peabody Picture Vocabulary Test (5 th Edition)	Pearson Assessments	\$242.30 USD*
9	Test of Language Development – Primary (5 th Edition)	Pearson Assessments	\$433.70 USD*
10	Test of Word Reading Efficiency (2 nd Edition)	Pearson Assessments	\$342.00

Notes

*indicates support materials and forms are available for additional price. Pricing of these tests and other test information is available on <https://www.pearsonassessments.com/>. Readers are also encouraged to refer to tests in Spanish utilizing the same link

Table 2 indicates that Pearson assessments dominate the testing industry and the basic price for individual tests (even after excluding support materials and forms) are highly expensive. For those clinicians serving the local community, children in underfunded schools, students from small universities or clinicians working in developing countries (e.g., India, Sri Lanka, Brazil), utilizing these tests becomes impossible due to the high economic cost associated with the test purchase. Additionally, these tests are updated frequently utilizing the language of “product improvement” resulting in the release and purchase of new versions. The domination of Pearson on testing industry is problematic as it indicates increased corporate control over educational policy (Mansell, 2012). The influence of Pearson in assessment indicates their dominance in controlling large number of clinical tests, but also their overpowering ability to control the state and dictate disability policy. Critical analysis of standardized testing in speech and language therapy must consider of how application of these tests marginalizes disabled bodies by casting them as the “other” to be fixed and how this oppressive process is benefitting the testing industry such as Pearson for the expansion of their market and profit generation.

Future – looking forward or inward?

Before looking forward to the future of our profession we must interrogate, excavate, and form an understanding of the nature of the field (Nair & Brea, 2022). It is not the intention of this paper to propose alternatives to standardized testing or reform speech therapy or chart a future for it. This paper is a call to initiate criticality of thought in clinicians, by providing knowledge of the history of the standardized testing industry. This is because we believe that sharing this knowledge is a firm basis for the beginning of ethical enquiry and resistance in our field (see Love, 2019 for a detail on creating resistance in the field of education). What is required is the emergent and critical thinking of clinicians to understand and engage in the negative impacts of

standardized language ideologies and testing has on Black and minoritized communities (Flores, 2013; Flores et al. 2015). To platform this change we must understand our positioning as clinician's gives us the power to proliferate or to decline the tools of oppression that are readily used on Black and minoritized people globally for their own pathologization and the maintenance of the ideals of White supremacy. The profession, the standardized assessments, therapeutic approaches, and research is not seeped in benevolence, nor is it apolitical, this work does not sit purely in the box of scientific objectivity, nor does it exist outside the realm of oppressed people's reality (see Nandy, 1988 for a perspective on the relationship between ideology and the violence of colonial science).

To conceive the possibilities of what we can become away from the limitations of standardized testing and standardized language ideologies, criticality and reflexivity which includes the process of questioning, debating, and grappling with our current state of being must take place (see Odera et al. 2021 for criticality and reflexivity in the context of social work). Could we as practitioners or educators really participate in a racist practice that deliberately oppresses minoritized communities for economic profit? Whilst there could be arguments regarding the merits of standardized testing such as receiving a disability label for disability benefits, this rationale cannot justify speech and language therapists' complicity in utilizing racist tests in their clinical practice. It cannot legitimize our own professional organizations' involvement in promoting and popularizing these tests. It is critical that we engage in reflection specifically interrogating the histories and conditions that have contributed to the current situation (Smith, 2011). Although not aimed as a tool kit (in a linear fashion) for self-reflection, we provide the following clinical considerations to critique reductive ideologies and expand ideas that centers people over profit.

Clinical considerations

1. **Acknowledgment** – Does your practice acknowledge the racist and eugenic basis of standard language ideologies and standardized testing in speech and language therapy?
2. **Critical History**- Do you approach the history and genesis of the profession with criticality?
3. **Reimagining** – What does practice that subverts from standardized testing and resists racism look like to you?
4. **Integration** – What work can you do to fully integrate the experiences, knowledge, and unique understanding of Black and minoritized clinicians and disabled children and their families to create alternate modes of being?

Endnotes

¹Ableism or able-bodiedness is the social construction of an ideology rooted in the belief that certain abilities such as competition and productivity are better than collaboration, sharing and empathy. Ableism castigates disability as a deficiency which is often supported by a medical diagnosis. Ableism intersects with racism, ageism, sexism and casteism where disabled or minoritized (or both) is considered to be lesser than the ideal body/ability (White, middle-upper class, literate, male) (see Wolbring, 2008 for a detail on this).

²Although neoliberalism is a complex concept to define, it is generally considered to be a critical economic policy where the state control of economy is deregulated to open new markets as well as to enable massive privatization of the public owned systems (see Ganti, 2014 for a history of neo-liberalism).

³Eugenics is a movement that was started by Francis Galton who was influenced by the ideas of his cousin Charles Darwin. Social Darwinism posited that the backwardness of people in the European colonies was because those people were evolutionary inferior. Galton believed in the superior genetic quality of the White race and used this idea to argue in favor of population control and selective breeding to preserve the best genes. He applied this idea into other fields such as statistics, social sciences and behavioral psychology and argued that Blacks were two grade less intelligent than the Whites. Eugenics played a key role in developing standardized testing such as the ones to measure IQ (see Mies & Shiva, 1993 for a history of eugenics including its relationship with Nazism).

⁴Capitalism is an economic system that allows private owners to control production of goods. Capitalism encourages wealth generation by providing government subsidies to private owners and giant co-operations for profit. A crucial feature of capitalism is a free-market economy where government exerts zero control over the product distribution. Distribution is maintained by the demand of the markets, and corporations are allowed to control such markets by controlling demand and supply to generate profit (see Economic Times, n.d for a detail on this definition).

⁵Medical model of disability castigates disability as a lack or a deficit located within the individual. It utilizes medical techniques to assess and treat disability with the goal of fixing the individual to achieve normalcy (see Donaldson et al. 2017 for a discussion of this model as it relates to speech and language therapy).

⁶Whilst the concept of hegemony has existed in ancient societies (e.g., in Chinese and Greek thought), the idea was popularized by the writings of Italian philosopher Antonio Gramsci. Although hegemony is a complex to define, it has been considered as a complete domination of a group or a leader—often with the consent of the majority. Hegemony is often seen in capitalistic societies where the wealthier upper class take complete political control of the society (see Cox, 1983 for Gramscian analysis of hegemony).

⁷Positivism is a key philosophy of science where evidence is gathered through measuring observable phenomenon. In positivism, apriori hypothesis and predictions are generated utilizing independent and dependent variables. Results are deducted through examining the

relationship between these variables (see Fox, 2008 for a summary of approaches offering a critique on positivism)

References

- AIATSIS (n.d). The Stolen Generations. Retrieved from <https://aiatsis.gov.au/explore/stolen-generations>
- Alland, A. (2002). *Race in mind: Race, IQ, and other racisms*. Basingstoke: Palgrave Macmillan.
- Annamma, S. A., Boelé, A. L., Moore, B. A., & Klingner, J. (2013). Challenging the ideology of normal in schools. *International Journal of Inclusive Education*, 17(12), 1278-1294.
<https://doi.org/10.1080/13603116.2013.802379>
- Annamma, S. A., Connor, D., & Ferri, B. (2013). Dis/ability critical race studies (DisCrit): Theorizing at the intersections of race and dis/ability. *Race Ethnicity and Education*, 16(1), 1-31.
<https://doi.org/10.1080/13613324.2012.730511>
- Annamma, S., Morrison, D., & Jackson, D. (2014). Disproportionality fills in the gaps: Connections between achievement, discipline and special education in the school-to-prison pipeline. *Berkeley Review of Education*, 5(1), 53-87. <https://doi.org/10.5070/B85110003>
- ASHA (n.d). Assessment Tools, Techniques, and Data Sources. Retrieved from <https://www.asha.org/practice-portal/clinical-topics/late-language-emergence/assessment-tools-techniques-and-data-sources/>
- Allen, A. (2014). *Benign violence: Education in and beyond the age of reason* (pp. 233-34). Basingstoke: Palgrave Macmillan.

Allen, A., & Spencer, S. (2022). Regimes of motherhood: social class, the word gap, and the optimisation of mothers' talk. *Sociological Review*. <https://doi.org/10.1177/00380261221104378>.

Au, W. (2013). Hiding behind high-stakes testing: Meritocracy, objectivity and inequality in US education. *International Education Journal: Comparative Perspectives*, 12(2), 7-19.

Baker-Bell, A. (2020). Dismantling anti-black linguistic racism in English language arts classrooms: Toward an anti-racist black language pedagogy. *Theory Into Practice*, 59(1), 8-21. <https://doi.org/10.1080/00405841.2019.1665415>

Baron-Cohen S (1995) Mindblindness: An Essay on Autism and Theory of Mind. Cambridge, MA:MIT Press.

Barnes, C. (2018). Theories of disability and the origins of the oppression of disabled people in western society. Barton. L (Eds). *Disability and society* (pp. 43-60). Routledge. New York: Longman.

Bello (2021, April 7). How Test Publishers Are Poised to Profit From Pandemic “Learning Loss.” Retrieved from <https://www.forbes.com/sites/akilbello/2021/04/07/how-test-publishers-are-poised-to-profit-from-pandemic-learning-loss/?sh=5050433d50c4>

Bird, S. (2020, December). Decolonising speech and language technology. In *Proceedings of the 28th International Conference on Computational Linguistics* (pp. 3504-3519).

[10.18653/v1/2020.coling-main.313](https://doi.org/10.18653/v1/2020.coling-main.313)

Blom, E., & Boerma, T. (2020). Do children with developmental language disorder (DLD) have difficulties with interference control, visuospatial working memory, and selective attention? Developmental patterns and the role of severity and persistence of DLD. *Journal of Speech, Language, and Hearing Research*, 63(9), 3036-3050. https://doi.org/10.1044/2020_JSLHR-20-00012

Chapman (2021). Why Autistic People Are Worried by Spectrum 10K. Retrieved from:

<https://www.psychologytoday.com/gb/blog/neurodiverse-age/202108/why-autistic-people-are-worried-spectrum-10k>

Cox, R. W. (1983). Gramsci, hegemony and international relations: an essay in method. *Millennium*, 12(2), 162-175. <https://doi.org/10.1177/03058298830120020701>

Cunningham, J. (2019). Missing the mark: Standardized testing as epistemological erasure in US schooling. *Power and Education*, 11(1), 111-120. <https://doi.org/10.1177/1757743818812093>

Cushing, I. (2021). 'Say it like the Queen': the standard language ideology and language policy making in English primary schools. *Language, Culture and Curriculum*, 34(3), 321-336.

<https://doi.org/10.1080/07908318.2020.1840578>

Cushing, I. (2022). Word rich or word poor? Deficit discourses, raciolinguistic ideologies and the resurgence of the 'word gap' in England's education policy. *Critical Inquiry in Language Studies*, 1-27. <https://doi.org/10.1080/15427587.2022.2102014>

Donaldson A. L., Chabon, S., Lee-Wilkerson, D., & Kapantzoglou, M. (2017). Mirror, mirror on the wall: Reflections on speech-language pathologists' image as advocates, activists, and aides. *Psychology in the Schools*, 54(10), 1285-1293. <https://doi.org/10.1002/pits.22083>

Diversity Style Guidelines (n.d). White, white. Retrieved from: www.diversitystyleguide.com

Duchan, J. (2002). A History of Speech and Language Pathology. Retrieved from https://www.acsu.buffalo.edu/~duchan/new_history/middle_ages/medieval_arabic.html

Dunn, L. M., and D. M. Dunn. (2007). PPVT-4 Manual. Bloomington: NCS Pearson.

Economic Times (n.d). What is 'capitalism'. Retrieved from: <https://economictimes.indiatimes.com/definition/capitalism>

Farah, W (in press). White System Black Therapist: Anti-Blackness & Liberatory Praxis in Speech & Language Therapy. Routledge: London (forthcoming).

Flores, N. (2013). Silencing the subaltern: Nation-state/colonial governmentality and bilingual education in the United States. *Critical Inquiry in Language Studies*, 10(4), 263-287.
<https://doi.org/10.1080/15427587.2013.846210>

Flores, N., Kleyn, T., & Menken, K. (2015). Looking holistically in a climate of partiality: Identities of students labeled long-term English language learners. *Journal of Language, Identity & Education*, 14(2), 113-132. <https://doi.org/10.1080/15348458.2015.1019787>

Fox, N. J. (2008). Post-positivism. *The SAGE Encyclopedia of Qualitative Research Methods*, 2, 659-664.

Ganti, T. (2014). Neoliberalism. *Annual Review of Anthropology*, 43, 89-104.

Gallagher, C. J. (2003). Reconciling a tradition of testing with a new learning paradigm. *Educational Psychology Review*, 15(1), 83-99.

Geiser, S., & Santelices, M. V. (2007). Validity of High-School Grades in Predicting Student Success beyond the Freshman Year: High-School Record vs. Standardized Tests as Indicators of

Four-Year College Outcomes. Research & Occasional Paper Series: CSHE. 6.07. *Center for studies in higher education*.

Gould, S.J. (1996). *The Mismeasure of Man: Revised and Expanded*; W. W. Norton: New York, NY, USA

Gould, J. (2008). The affects of language assessment policies in speech-language pathology on the educational experiences of Indigenous students. *Current issues in language planning*, 9(3), 299-316. <https://doi.org/10.1080/14664200802139562>

Grech, S., & Soldatic, K. (2015). Disability and colonialism:(dis) encounters and anxious intersectionalities. *Social Identities*, 21(1), 1-5. <https://doi.org/10.1080/13504630.2014.995394>

Guthrie, J. W., & Springer, M. G. (2004). A Nation at Risk Revisited: Did "Wrong" Reasoning Result in "Right" Results? At What Cost?. *Peabody journal of Education*, 79(1), 7-35. https://doi.org/10.1207/s15327930pje7901_2

Herrnstein, R. J. (1995). *The bell curve debate: History, documents, opinions*. R. Jacoby, & N. Glauberaman (Eds.). New York: Times Books.

Holmes, S. (2009). Standardized testing and the No Child Left Behind Act: A failing attempt at reform. *East Carolina University Library*. Retrieved from <https://registrar.ecu.edu/wp->

<content/pv-uploads/sites/242/2017/06/2009-Keats-Sparrow-Award-Winner-%E2%80%8B1st.-Standardized-Testing-and-the-No-Child-Left-Behind-Act-A-Failing-Attempt-at-Reform.pdf>

Herrnstein, R. J., & Murray, C. (1994). *The bellcurve: Intelligence and class structure in America*. New York: Free Press.

Henner, J., & Robinson, O. (2021, July 8). Unsettling Languages, Unruly Bodyminds: Imaging a Crip Linguistics. <https://doi.org/10.31234/osf.io/7bzaw>

Hur, Y. M., & Lynn, R. (2013). John Philippe Rushton, 1943–2012. *Twin Research and Human Genetics*, 16(1), 497-498.

Hursh, D. (2004). Undermining democratic education in the USA: The consequences of global capitalism and neo-liberal policies for education policies at the local, state and federal levels. *Policy Futures in Education*, 2(3-4), 607-620. <https://doi.org/10.2304/pfie.2004.2.3.13>

Kamentez (2018, April 29). What ‘ A Nation At Risk Got Wrong, And Right, About U.S Schools. Retrieved from <https://www.npr.org/sections/ed/2018/04/29/604986823/what-a-nation-at-risk-got-wrong-and-right-about-u-s-schools?t=1661008777895>

Kendi, I. X. (2016). Why standardized tests have standardized postracial ideology. *Academe*, 102(6), 26-29.

Kroskrity, P (2004). Language ideologies. A companion to linguistic anthropology, Duranti, A (Eds). Oxford, UK: Blackwell Publishing.

Kroskrity, P. (2021). Covert linguistic racisms and the (re-)production of white supremacy. *Journal of Linguistic Anthropology* 31(2): 180-193. <https://doi.org/10.1111/jola.12307>

Leaders Project (2014). Test Review: CELF-5. Retrieved from <https://www.leadersproject.org/2014/02/17/test-review-celf-5/>

LENA (n.d). Talk Pedometer. Retrieved from <https://www.lena.org/technology/>

Love, B. L. (2019). *We want to do more than survive: Abolitionist teaching and the pursuit of educational freedom*. Beacon Press.

Marginson, S., & Van der Wende, M. (2007). Globalisation and higher education. OECD. *Education working paper* (8). <http://dx.doi.org/10.1787/173831738240>

Mansell (2012, July 16). Should Pearson, a giant multinational, be influencing our educational policy? Retrieved from <https://www.theguardian.com/education/2012/jul/16/pearson-multinational-influence-education-poliy>

Mignolo, W. D. (1996). Linguistic maps, literary geographies, and cultural landscapes: Languages, languaging, and (trans) nationalism. *Modern Language Quarterly*, 57(2), 181-197.

Mies, M., & Shiva, V. (1993). *Ecofeminism*. Zed books: London.

Milroy, J. (2001). Language ideologies and the consequences of standardization. *Journal of sociolinguistics*, 5(4), 530-555. <https://doi.org/10.1111/1467-9481.00163>

Milton, D. E. (2012). On the ontological status of autism: the 'double empathy problem'. *Disability & Society*, 27(6), 883-887. <https://doi.org/10.1080/09687599.2012.710008>

Nair, V.K & Brea, M (2022, February 21). Reimagining Social Justice in Speech and Language Therapy. Retrieved from <https://research.reading.ac.uk/research-blog/reimagining-social-justice-in-speech-and-language-therapy/>

Nandy, A. (1988). Science, hegemony and violence: A requiem for modernity. Oxford University Press, Oxford.

Nagy, J. (2022). Autism and the making of emotion AI: Disability as resource for surveillance capitalism. *New Media & Society*, 14614448221109550.

National Archives of India (1965). Minute by the Hon'ble T.B Macaulay, dated the 2nd February 1835. Retrieved from:

http://www.columbia.edu/itc/mealac/pritchett/00generallinks/macaulay/txt_minute_education_1835.html)

Nervanix (n.d). Using Brain Science to Improve Learning. Retrieved from

<https://www.nervanix.com/about/#WhoUsesNervanix>

Newbury, D. F., & Monaco, A. P. (2010). Genetic advances in the study of speech and language disorders. *Neuron*, 68(2), 309-320. <https://doi.org/10.1016/j.neuron.2010.10.001>

Odera, S., Wagaman, M. A., Staton, A., & Kemmerer, A. (2021). Decentering whiteness in social work curriculum: An autoethnographic reflection on a racial justice practice course. *Advances in Social Work*, 21(2/3), 801-820. <https://doi.org/10.18060/24151>

Perez, C. (2002). Different Tests, Same Flaws: Examining the SAT I, SAT II, and ACT. *Journal of College Admission*, 177, 20-25.

Pierre, J. S., & Pierre, C. S. (2018). Governing the voice: A critical history of speech-language pathology. *Foucault Studies*, 151-184. <https://10.22439/fs.v0i24.5530>

Pratt, N. (2016). Neoliberalism and the (internal) marketisation of primary school assessment in England. *British Educational Research Journal*, 42(5), 890–905.
<https://doi.org/10.1002/berj.3233>

Roever, C., & McNamara, T. (2006). Language testing: The social dimension. *International Journal of Applied Linguistics*, 16(2), 242-258. <https://doi.org/10.1080/13603116.2013.802379>

- Retief, M., & Letšosa, R. (2018). Models of disability: A brief overview. *HTS Teologiese Studies/Theological Studies*, 74(1). <https://doi.org/10.4102/hts.v74i1.4738>
- Rosales, J., & Walker (2021, March 20). The Racist Beginnings of Standardized Testing. National Education Association. Retrieved from <https://www.nea.org/advocating-for-change/new-from-nea/racist-beginnings-standardized-testing>
- Roy (2018, April 5). Decolonize Science – time to end another imperial era. The Conversation. Retrieved from <https://theconversation.com/decolonise-science-time-to-end-another-imperial-era-89189>
- Rosa, J., & Flores, N. (2017). Unsettling race and language: Toward a raciolinguistic perspective. *Language in society*, 46(5), 621-647. <https://doi.org/10.1017/S0047404517000562>
- Rubin, D. I. (2011). The disheartened teacher: Living in the age of standardisation, high-stakes assessments, and No Child Left Behind (NCLB). *Changing English*, 18(4), 407-416. <https://doi.org/10.1080/1358684X.2011.630197>
- Russell, M. (2019). *Capitalism and disability: Selected writings by Marta Russell*. Haymarket Books.
- Rushton, J. P., & Jensen, A. R. (2005). Thirty years of research on race differences in cognitive ability. *Psychology, public policy, and law*, 11(2), 235. <https://doi.org/10.1037/1076-8971.11.2.235>

Savithri, S. R. (1988). Speech and hearing science in ancient India--a review of Sanskrit literature.

Journal of communication disorders, 21(4), 271-317.

Schochet, P. Z., & Chiang, H. S. (2010). Error Rates in Measuring Teacher and School Performance Based on Student Test Score Gains. NCEE 2010-4004. *National Center for Education Evaluation and Regional Assistance*. Available at <https://files.eric.ed.gov/fulltext/ED511026.pdf>

____ Shepherd, K. J. (2017). *Measuring Up: Standardized Testing and the Making of Postwar American Identities, 1940-2001*. University of South Florida.

Smith, E (2011). "Teaching critical reflection." *Teaching in higher education* 16.2: 211-223.

<https://doi.org/10.1080/13562517.2010.515022>

Southern Poverty Law Center (n.d). Jean-Philippe Rushton. Retrieved from:

<https://www.splcenter.org/fighting-hate/extremist-files/individual/jean-philippe-rushton>

Stauffer (2016, April 27). The Business of Standardized Testing. Retrieved from

https://www.huffpost.com/entry/the-business-of-standardi_b_9785988

Stansfield, J. (2020). Giving voice: an oral history of speech and language therapy. *International Journal of Language & Communication Disorders*, 55(3), 320-331.

<https://doi.org/10.1111/1460-6984.12520>

Tager-Flusberg, H. (2007). Evaluating the theory-of-mind hypothesis of autism. *Current directions in psychological science*, 16(6), 311-315. <https://doi.org/10.1111/j.1467-8721.2007.00527.x>

Theo Goldberg, D. (2006). Racial europeanization. *Ethnic and racial studies*, 29(2), 331-364.

UK Department of Education (2018). Standards and Testing Agency Framework. Retrieved from

<https://www.gov.uk/government/publications/standards-and-testing-agency-framework>

Wiig, E. H., Secord, W. A., & Semel, E. (2013). *Clinical evaluation of language fundamentals: CELF-5*. Pearson. Bloomington, MN: NCS Pearson.

Wolbring, G. (2008). The politics of ableism. *Development*, 51(2), 252-258.

Yan, K., & Berliner, D. C. (2013). Chinese international students' personal and sociocultural stressors in the United States. *Journal of college student development*, 54(1), 62-84.

<https://doi.org/10.1353/csd.2013.0010>

Yu, B., Epstein, L., & Tisi, V. (2021). A DisCrit-Informed Critique of the Difference vs. Disorder Approach in Speech-Language Pathology. In *Critical Perspectives on Social Justice in Speech-Language Pathology* (pp. 105-128). IGI Global.

Yu, B., Nair, V. K., Brea, M. R., Soto-Boykin, X., Privette, C., Sun, L., Khamis, R., Sheen Chiou, S., Fabiano-Smith, L., Epstein, L & Hyter, Y. D. (2022). Gaps in Framing and Naming: Commentary to “A Viewpoint on Accent Services”. *American Journal of Speech-Language Pathology*, 1-6. https://doi.org/10.1044/2022_AJSLP-22-00060

Zuboff, S (2019). *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. New York: Hatchett.