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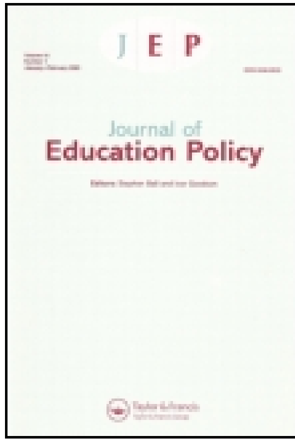

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Generating, comparing, manipulating, categorizing: reporting, and sometimes fabricating data to comply with No Child Left Behind mandates

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Generating, comparing, manipulating, categorizing, reporting, and sometimes fabricating data to comply with No Child Left Behind mandates

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This article ethnographically examines the ways in which No Child Left Behind (NCLB) links local practices to the centralized processing of data through its narrowing of procedures and measurements aimed at accountability. Framed by actor-network theory, it draws upon data consistently collected between June 2005 and October 2008, and then intermittently through October 2010, to consider the ways in which policy technologies, such as standardized testing, bring together New York City (NYC) public schools, district administrators, for-profit educational support businesses, and government officials to address the accountability requirements of NCLB. This article reveals how, through a range of sophisticated mechanisms that support the generation and comparison of data, NYC schools become reduced to data calculation and management centers. NCLB's standardization, privatization, and marketization encourage local policy actors to become complicit in standardizing and quantifying academic assessment through their reliance on services and products marketed to schools and districts that are not meeting academic benchmarks. These services, mostly offered by for-profit vendors, help keep schools in compliance with policy requirements, but replace a focus on student learning with the production, management, and sometimes the fabrication, of data.

Keywords: qualitative; actors institutions

No Child Left Behind (NCLB), the latest United State's federal policy solution to academic 'failure' mandates states to 'develop and administer an accountability system that assesses students annually (in reading/language arts, mathematics, and science) and, based on those assessments, determines whether schools and districts are making adequate yearly progress (AYP)' (Sunderman and Orfield 2008, 125).[1] 'Overemphasizing compliance with federal process requirements and underemphasizing results,' NCLB moves federal policy from its historical focus on creating equitable education to regulating and evaluating day-to-day school practices (NCSL 2009, 3). It establishes an unprecedented national requirement for schools to meet annual achievement targets in order to receive federal aid. The policy's standardized and high-stakes tests act as mechanisms by which the state and local educational

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agencies can centralize accountability and organize achievement, as well as reduce the aims of education to measurable test scores (Loder 2006; McNeil 2000; Menken 2008; Valenzuela 2005). NCLB mandates specify certain data-based policy technologies, such as high-stakes testing, that 'organize human forces and capabilities into functioning networks of power' (Ball 2006, 143) that are manipulated by the government from afar.

As evidenced by NCLB, the federal government's current intervention into public education has become inextricably bound to market-based 'reform' and privatization (Apple 2006; Ball 2007, 2010; Burch 2006, 2009). Public education has emerged as part and parcel of what Harvey (2003) refers to as the 'accumulation of dispossession,' where everything from ideas to the human genomes are potential commodities and thus, open to privatization. Through policy, the federal government has transformed education into a market system with charter (publically funded privately governed) schools, vouchers (public funding that students can use for private school tuition) and school choice (the ability of students in underperforming schools to transfer to another schools). As has also been shown to be the case in England (Ball 2007; Ozga 2009), the US's reliance on market mechanisms has resulted in a redistribution of policy commitments and services across a wide range of actors and organizations. The use of outside venders, including but not limited to tutoring and testing companies, has accelerated as schools aim to 'jump-start compliance with NCLB' (Burch 2006, 2582) by increasing their reliance on products and services of for-profit educational support businesses and educational management organizations (Ball 2010; Koyama 2010).

Further, '[t]he discourse of "schools in the service of the economy" has achieved a hegemonic, "common sense" status…' (Bartlett, Frederick, Gulbrandsen, and Murillo 2002, 6) and securing economic growth and increasing market advantage have been made explicit across school systems (Ball 2007; Jessop 2002; Mosen-Lowe, Vidovich, and Chapman 2009; Rizvi and Lingard 2010). This is particularly evident in New York City (NYC), where Michael Bloomberg, who owns 88% of Bloomberg LP, a far-reaching media, data, and financial company and is among the world's ten richest people, has mayoral control over the city's schools. Together, NYC schools constitute the largest school district in the US and are also part of an extended assemblage of Bloomberg products, services, and information aimed at influencing public consumption, ideology, and discourse through a barrage of quantitative data. This positioning of NYC schools results in a unique localization of NCLB's processing of data through its narrowing of procedures and measurements.

In this article, I ethnographically examine the ways in which the NCLB-mandated technologies of quantification, comparison, and codification, such as high-stakes testing and AYP targets, are locally implemented across NYC. I draw upon data I collected between June 2005 and October 2010 in order to consider how these policy mandates mobilize, link together, and then operate through a network of things, ideas, and human actors. Examining NCLB's instruments and the implementation of particular technologies through a lens of network analysis, this study critically examines how NYC classrooms, programs, and entire schools become calculation centres or worse yet, are 'reduced to distribution points in the flow of data' (Ozga 2009, 160) across the district, the state, and the country. It demonstrates how a policy instrument, aimed at creating uniformity is appropriated variably and yet

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still comes to steer the very policy in which it was mandated – and further, to be seen as authoritative proof of the policy's necessity.

Utilizing actor-network theory – a perspective that aims to explain how people, their ideas, and the material objects they produce, join together in a dynamic network – this article makes four contributions to the study of policy. First, it provides a cultural analysis of policy technologies as complex social processes (Stone 2002) and as locally productive sociocultural practices (Levinson and Sutton 2001). Second, it expands the field of study to a broad sphere of interactions to capture, 'the sheer complexity of the various meanings and sites of policy… [that] cannot be studied by participant observation in one face-to-face locality' (Shore and Wright 1997, 14). Third, it follows actor-network theory in moving non-human objects, such as test score reports and AYPs, from the background to a symmetrical position with human actors to consider the role of material items as mediators of action. Finally, the article reveals that policy influences are redistributed across public–private spheres through policy technologies which then become 'scientific evidence' used to justify the existence of the policy.

To begin, I review scholarship that examines the standardization and calculations – the counting, manipulating, and categorizing – mandated by accountability-driven policies, like NCLB. Next, I introduce actor-network theory, consider its relation to other critical policy frameworks, and present its contributions to the study of educational policy, specifically the standards and accountability mandated by current federal reforms. I then move to the findings, which reveal multiple policy actors turning their attentions and actions towards what one district administrator repeatedly referred to as 'the big numbers game,' forged around accountability and assessment data. The findings suggest that policy actors charged with localizing federal interventions, like NCLB, become complicit in elevating the importance of high-stakes testing and a quantification of assessment. Schools are shown to rely on what Ball (2010) describes as 'turnaround services' – those services and products marketed to schools and districts that are not meeting their academic benchmarks. These services, mostly offered by for-profit educational support companies, help keep schools in compliance with policy requirements by replacing a focus on student learning with the production, management, and sometimes the fabrication, of data.

Standards and accountabilities: calculations, comparisons, and the flow of data

Standards and their high-stakes assessments have become integral to educational policies and ubiquitous in educative practices that aim to meet accountability (Anagnostopolous 2003; Apple 2006; Au 2007; Au 2009; Menken 2008). And although standardization and classification are presented in federal policy as neutral tools of the state, they have been shown to be the explicit or implicit authoritative allocation and validation of a particular set of government values (Ball 2010; Rosen 2001; Shore and Wright 1997). Popkewitz (2004) argues that standards construct objects out of children and their teachers to be interpreted and evaluated as part of the activities aimed toward a perceived educational problem. Recent analyses of educational policy reveals that they rely upon the ongoing work of constructing and implementing sorting systems, masked as apolitical diagnostic tools (Lipman 2004; Shore and Wright 1997; Wedel et al. 2005).

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Examining the relationship between the changing forms of government, governance of education, and the increasing use of data and accountability in England, Ozga (2009) demonstrates how the government controls education through policy technologies, such as standardized curricula and evaluations, even as it appears to decentralize and deregulate educational governance. In an argument similar to the one I make here for the situation in the US, Ozga insists that the government's search for effectiveness results in a growing industry focused of the production and constant comparison of data. Similarly, Nóvoa and Yariv-Marshall (2003) situate comparison as a particular manner of governance that legitimizes political action. According to these authors, comparison becomes both the result of data collection used to support the political discourses of an educational 'crisis' and also the driving force for the collection of more data to remedy it.

Critical approaches (Bowker and Star 2000; Fenwick and Edwards 2010; Ozga 2009) have pointed to the ways in standards orient relations and inflict a classification system, forming boundaries between activities, objects, and people. In schools, such classifications of children are 'both conceptual (in the sense of persistent patterns of change and action, resources for organizing abstractions) and material (in the sense of being inscribed, transported, and affixed to stuff)' (Bowker and Star 2000, 152). Over time, the numbers and the classifications become taken for granted facts – nearly unquestioned truths – that circulate across contexts as necessary 'scientific evidence' for meeting the accountability requirements of NCLB and also for supporting the need for educational reform of this nature.

In her work on evidenced-based educational policy, Gorur (2010a) discusses multiple meanings of accountability relevant to the focus of this study. She argues that in this era of accountability, it is a way to monitor, evaluate and 'call to account' or 'hold accountable.' It is a 'means by which blame or praise can be accorded...' (4). An account can also be a retelling, a presentation of a particular narrative. It is a performance, an interpretation. Another meaning of account focuses on evaluation or calculating – of categorizing, classifying, and reckoning. Gorur notes that '"accounting for" involves explanations – making connections between events to explain (or explain away) situations' (6). All of these meanings can be clearly identified in the localization of NCLB in NYC.

Much work (Darling-Hammond 2007; Karp 2006; Karp 2007/2008; Koyama 2010; Koyama 2011; Meier and Wood 2004; Valenzuela 2005) has shown that NCLB creates new calculations of success and failure – and further, that these calculations promote the use of private sector educational support services, such as after-school tutoring and test-preparation courses. Increasingly private educational businesses, which develop and market policy 'solutions,' are becoming integral actors in policy processes. Recent studies reveal the public–private relationships developed under NLCB to show how the policy legitimizes the use of private services (Burch 2006; Koyama 2010; Koyama 2011). Koyama (2010) concentrates on the for-profit Supplemental Education Services (SES) businesses that provide after-school tutoring, which is mandated by NCLB and paid for with public funds; Burch (2006) reveals how urban districts depend on the private services – including test development and preparation, data analysis, and targeted remedial instruction – to enhance their compliance with NCLB.

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Tracing policy processes through networks and actor-network theory

In general, network analysis as a theoretical and methodological framework for policy studies provides a way to examine policy being 'produced through multiple agencies and multiple sites of discourse generation' (Ball and Exley 2010, 151). However, there is little consensus in social research as to what the term 'network' implies. Some (Frankham 2006; Ozga 2009; Vidovich 2007) have challenged conventional conceptions of networks that represent or explain 'benign distribution, depoliticized "flows," or connections of consensus' (Fenwick 2009, 117). I follow Nespor (2002) in recognizing a network as a set of dynamic, complex, and often contested relationships among actors, who are 'dialectically constituted by social relations' (368). Viewed in this way, networks are thus 'assemblages' of heterogeneous materials, 'all of which can move educational practices across space and time' (Nespor 2002, 369) through non-linear linkages that do not necessarily represent or construct consensus, decentralization, or democratic decision making.

Actor-network theory (ANT) precisely extends the field of study to interactions that cross multiple sites and contexts to reveal the complexities and power embedded in policy processes; 'ANT treats networks as contested and precarious multiplicities which order practices, bodies, and identities through complex enactments' (Fenwick 2010, 119). An ANT approach reveals and interrogates how, within a network, 'things are invited or excluded, how some linkages work and others don't, and how connections are bolstered to make themselves stable and durable by linking to other networks and things' (Fenwick 2010, 120). It offers a way to examine how networks of disparate, and often temporarily linked, actors act as fluid assemblages.

ANT, which was initially developed, employed, and then challenged, and reworked by Latour (1988), Latour (2005), Callon (1986), Callon and Latour (1981) and Law (1986) to interrogate the theoretical framework of Science and Technology Studies (STS), situates the social as dynamic networks built and maintained by actors to achieve particular goals. The strength of the theory lies in its insistence on following the ongoing processes 'made up of uncertain, fragile, controversial, and ever-shifting ties' (Latour 2005, 28) rather than attempting to fit the actors and their activities into bounded categories, geographical sites, or groups of analysis. Importantly, the theory collapses long-standing binaries such as human–non-human, local–global, and agency–structure by emphasizing the interactions of actors who sustain and transform the networks.

ANT has similarities with (and also diverges from) other framings of educational policy that encourage a critical examination of the messy, often unstable, and political assemblage of policy processes and practices that decenter authority. Anthropologists (Shore and Wright 1997; Sutton and Levinson 2001; Wedel et al. 2005) question the centers of power and also the location of agency to demonstrate the shifting and precarious moments of authority and consensus. In their recent work, Levinson, Sutton, and Winstead (2009) make important distinctions between official, often government-generated, and informal policy by conceiving policy as an ongoing sociocultural 'practice of power' (767). In their positioning of global policy, Rizvi and Lingard (2010) challenge values accorded to privileged official policymakers, but depart from ANT by retaining distinctions between the policy and the contexts in which it operates. Similarly, Ball (1998, 2000) situates policy as

text, embedded with complex contestations, within policy as discourse, a dynamic frame that both constrains and enables the enactment of the text.

While researchers working with ANT have various treatments of policy – some positioning it as a circulating object and others treating it as a multiple enactment, a difference I discuss later as a methodological issue – in ANT human actors do not act alone. Complex human–non-human relations mediate educational practices and 'shape intentions, meanings, relationships, routines...' (Fenwick and Edwards 2010, 6). For example, NCLB-mandated testing has been shown to narrow curriculum, redistribute resources for test preparation, and redefine the role of teachers on test day. ANT focuses not on what an object means, but rather on what it does, with human investment. Further, '[t]he human subject is not agentic and intentional, but is itself an effect of a particular network of associations. The things that have become part of this actor-network are effects produced by particular interactions with one another' (Fenwick and Edwards 2010, 8). In ANT framings, human actors and non-human objects join to create impermanent vectors of agency.

Applied to policy processes, ANT demonstrates how policy actors make sense of their daily situations and take actions through associations with others. It frames how actors become, once enrolled, accountable to the assembled constellation of others. In the larger ethnography from which this article is drawn, the theory is applied to an emerging NCLB-directed network as it develops, holds actors from government, private educational support businesses, and schools together – and alters its compositions as linkages between these disparate actors are made, remade, and unmade. Associations between actors in disperse agencies are traced, blurring boundaries between government, politics, schooling, and commerce in NYC.

In this article, I examine what results when actors in for-profit educational support companies, public schools, and a variety of district and city officials become assembled together and generate, manage, report, and come to be accountable to policy calculations. From an ANT perspective, calculations involve three processes: 'First, relevant things are sorted, detached and displayed in single frame. Second, these entities are manipulated and transformed to show or create relationship between them. Third, a result is extracted such as a new thing, a ranking or a decision' (Fenwick and Edwards 2010, 123). To further explain the notion of calculation, Callon and Law (2005) provide the concept of 'qualculation,' in which things, both quantitative and qualitative, are manipulated into calculations. These things, some material and some human, must then qualify for calculation in a common frame. Calculations do not reside in human actors who then project them; they are enacted through material practices and multiple translations.

Translation, a key ANT process, refers here to the chain of actions and activities whereby dynamic, incongruous, and complex parts of everyday schooling are quantified and become nearly unquestioned facts. The test scores, through translations, become detached from their origins, and are made commensurate and analogous with other scores across the district, the state, and the nation for the purposes of fitting into the ongoing activities of NCLB. They are amplified and transported from location to location, school to district to state, and act at a distance from the experience from which they were extracted. Test scores are then evoked as scientific evidence and authorized knowledge in support of NCLB. They are, in Latour's (2005) terminology, 'immutable mobiles' that circulate across messy, dynamic, and contested everyday practices – both changing the practices and being changed by them.

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Negotiating methodology and designing an ANT study of policy

Framed by ANT, the social world 'is a fluid one and a similar flexibility is claimed by the theorists who use it' (Hamilton 2010, 2), variably applying it as 'sensibility' (Fenwick 2010, 118) or as a philosophical/methodological/theoretical hybrid to analyze complex social phenomena. In what Fenwick (2009) characterizes as the recent, but limited, 'uptakes' of ANT by educational interests and research, ANT ideas have been extended and reconfigured to 'trace the mess, disorder, and ambivalences that organize policies and practices' across educational systems (118). Analyzing educational issues with ANT has resulted in studies focused on literacy (e.g. Hamilton 2010; Leander and Lovvorn, 2006), pedagogy and curricula (e.g. Edwards and Usher 2008), and policy (e.g. Edwards 2002; Fenwick 2010).

Researchers using ANT to study policy have made distinctions between examining policy as an object that circulates across contexts (e.g. Burgess 2008; Emad and Roth 2009) and policy as multiple enactments affected by and constitutive of these contexts (e.g. I'Anson and Allan 2006: Mulcahy 2010). Burgess (2008) examines how policy is enacted in one policy instrument; she traces how a textual policy instrument for evaluating adult literacy mobilizes actors and mediates activities. In contrast, Mulcahy (2010), as an example, demonstrates how an Australian policy specifying professional teacher standards is enacted or performed multiply, as a text, as a classroom practice, and as a political consultation. More similar to Mulcahy's than Burgess', my methodological design promotes the investigation of multiple, interconnected, and simultaneous enactments of NCLB's testing and reporting mandates.

As noted by Hamilton (2010): 'ANT's preferred methodology is ethnographic and it is especially sympathetic to what Marcus (1995) calls a 'multi-sited ethnography' that links data across different geographical spaces and times rather than focusing on a bounded local context (4). To initiate an ANT study one either begins by following the human actors via interviews and observations or first examine material objects, such as texts, reports, and databases, serving as intermediaries that pass between actors and then following those material objects that become, with human investment, actors.

I began by following actors in 2005 to examine what happens to school failure under NCLB when actors – adults in the public school system, for-profit educational support companies, and authorized policymaking institutions – set about eliminating it in NYC. At that time, I was in a training position at an educational support company and had become interested in the ways that the business sector increasingly participated in public education. I aimed to diverge from conventional educational ethnographies and policy analyses by considering the behavior of disparate, but linked, policy stakeholders as policymakers. Relations between policy actors served as my unit of study and the field became defined as transactional spaces across multiple contexts in schools, for-profit educational companies, and government agencies.

After attending events where school administrators were introduced to businesses offering SES or 'afterschool tutoring,' as it was often called, I contacted a handful of principals that I'd met. Several of these principals signed contracts with one of five leading for-profit SES companies. Over the 40 months of the study, my sample size of principals grew to 45, again all of whom 'partnered,' under NCLB mandates during the study, with these for-profit SES providers. Although the

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principals led 22 schools (3 of the 55 replaced 3 others initially interviewed) across the five NYC boroughs, they were joined in the emerging network through their linkages to the for-profit SES providers, their position within the city's DOE, their linkages to the city's politics, and their progress status under NCLB.

That larger ethnographic study concluded in 2008, but was extended with additional interviews, observations, and policy artifacts collected through October 2010. The additional information was gathered with a renewed emphasis on critical policy analysis amidst the educational politics of NYC.[2] Data for the entire study included interviews with principals, assistant principals, parent coordinators, and other school staff as well as others associated with of the Department of Education's regional superintendent offices, the Office of Strategic Partnerships, the 32 Community Education Councils, the Division of Contracts and Purchasing Vendors, and a variety of other boards and panels associated with NCLB and local reforms in NYC. I conducted nearly 90 interviews with the school administrators – principals, assistant principals, and deans; some administrators, including more than half of the 45 principals in the initial study, were interviewed more than once. Fifteen school and district administrators who had been interviewed between 2005 and 2008, when contacted again by email, agreed to be interviewed again during 2009 and 2010.

In addition to the interviews conducted with educational administrators, interviews with various for-profit educational support companies, as well as observation and participation in after-school tutoring or SES programs, governmental meetings, DOE hearings, school meetings, teacher-training workshops, community assemblies, and policy forums contributed to the data. Overall, including the previously mentioned interviews with administrators, I conducted 87 informal interviews and completed more than 144 formal audiotaped interviews, including those conducted with the school administrators. I collected and reviewed more than 550 SES and NCLB-related documents and amassed greater than 250 pages of typed observational notes, which along with the interviews were initially broadly analyzed using NVivo 2.0 (and later version 8.0).

NCLB mandates operating through the proliferation and management of data emerged as a theme during the initial analysis of data. Here, I focus on the ways in which NCLB legitimizes itself and the goals of the federal administration through the linked interactions between human and non-human actors. Statistical techniques, databases, technical reports, and tests join with human actors, including principals, district administrators, supplemental educational services providers, and test developers to measure, monitor, evaluate, compare, and document academic achievement, as mandated by NCLB.

Findings: assembling the facts and reporting the evidence

Assessing NCLB's performance mandates, with their high-stakes testing assessments, resulted in an explosion of data at the school and district levels. The processes associated with assessment placed heavy burdens on instructional practices, administrative duties, district data management (including analysis and reporting capabilities), and the district budget. During the study, the NYC school district was required to administer, score, and report more than 50 million standardized tests annually to remain in compliance with NCLB assessment orders. District and school administrators, as well as those working for educational support vendors, spoke about the processes and costs (profits for the vendors) associated with testing

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and data management. During 2008, the last year of consistent ethnographic data collection, the district spent an estimated 130 million dollars on testing (Medina 2008). Moreover, to prepare for the tests and manage the testing data, the district paid hundreds of millions of dollars to mostly for-profit vendors, including test and curriculum publishers, online database developers, and tutoring and test preparation companies.

In 2008, as NYC was working to remain compliant with NCLB-standardized testing and data reporting mandates by paying large sum of public money to for-profit educational support companies, it was also facing a $771 million reduction in state aid (US Department of Education 2009) and eminent reductions in the teaching force. The reduction in state aid was later offset by economic stimulus money, in exchange for aggressively reforming teacher evaluations, bolstering standards and improving assessments, and participating in the state data systems (Center of Education Policy 2010). New York State also received Race to the Top funds in the second round of the competition, which tied the federal funding to the use of student test scores to teacher evaluation and compensation and lifted the cap of the number of charter schools. In fact, in order to compete for the funds, New York State had to remove its bar on using student-achievement data for evaluating teachers and principals.

Centralizing standards and assessments was in line with the aims of the NYC Mayor and Schools Chancellor. After being granted control of the school system, Mayor Michael Bloomberg, supported by Schools Chancellor Joel Klein, began Children First: A New Agenda for Public Education in NYC (known as Children First), a set of NCLB-aligned, standards-based organizational actions, in 2003. To cure what Bloomberg stated were the district's persistent and multiple operational, structural, and academic failures, he chartered an overhaul of the system – from the selection and purchase of textbooks and notepaper in the district's 1400 schools to the reorganization of its bureaucratic structure. In an interview, one Bronx middle school principal called the reforms 'an absolute takeover by the powerful business elites who run the city,' while Mayor Bloomberg and Chancellor Klein publicly referred to their actions as 'unifying and stabilizing' during a time of standardized local accountability.

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Generating and gathering test data

In order to comply with NCLB much attention was paid to preparing for and administering the annual state mathematics and English language arts tests; however, much effort was also aimed at documenting the test scores and publically reporting the completion of the testing processes. It became clear that what was often as important as the scores was the 'performance' of the testing. Administrators took great pains to demonstrate to state officials and local policy actors, including students' parents, that they were being compliant with the NCLB testing mandates. Several administrators of schools, at the district level, and from for-profit SES providers explicitly admitted that although having all the testing data often overwhelmed their analyzing and reporting systems, it was important to demonstrate that the tests were being given and that the data were being collected.

According to the director of a for-profit SES company, the pretests and midterm tests they administered in their after-school program were not diagnostic and their results were not intended to inform instruction. What then, I asked, did the tests

inform? The manager replied: 'To measure how we're doing.... The DOE requires we do quarterly progress reports and parents like when we include test scores... Numbers or scores matter to parents.' The tests, which could have been a curriculum-guiding tool for instructors were instead used as props that allowed the SES providers to appear as if they were measuring – and by logical extension, attending to the students' specific skill weaknesses. They were not. None of the providers reported having the academic expertise or support to use testing data to differentiate instruction. Data served a reporting purpose; the DOE required providers of support services to track and report student progress. Compliance trumped targeted instruction.

Fluctuations in the pre-, mid-, and post-tests were common, but the SES providers often used the administering of the three tests as a marketing tool. Internal marketing instructions of one company stated: 'Be sure to tell parents that we give three tests, a pretest to see where their child is, a midterm test to prepare their child for the state examinations, and a posttest to measure progress.' Thus, the actions of giving the tests and reporting the results were given importance over the actual scores. All scores reported by the SES providers were secondary to the actions – testing and reporting scores – which kept them in compliance with NYC's DOE.

The SES provider's emphasis on the administering of tests resonated with the priorities of several principals in the study, as well. One Queens' principal explained:

> I need the SES providers to do their jobs. If they say they're going to do something, they better damn well do it. Like the pre, pre, post, mid, whatever tests they say they do. They better just do them. And then they better tell me how it went. If they don't, I just don't return their calls or ask them back. They let me down – and that matters more to me really than the scores. Scores go up and down, always have, always will. I want to see results, but I really want to see effort.... (Interview, March 15, 2006)

The assistant principal, in a separate interview, confirmed that performing the tests was as important, if not more important, than the actual results. She said:

> Well, it's really about doing the tests. We need to do the tests repeatedly, again and again, so that kids and parents see we are serious about this testing stuff... When the providers give tests or practice tests it's like one more time... And the scores, well we need the numbers, God knows, especially this year since we went down last year, but what we really need is the testing. Parents are always asking about testing. They actually want more testing. (Interview, May 10, 2006)

Initially, I was skeptical that parents wanted more testing, but this was confirmed by annual DOE parent surveys. The importance of testing in the mandated after-school SES programs for the school administration seemed to be two-fold: They wanted the SES providers to administer three tests and they also wanted parents to know that the school administration was supportive of testing their children throughout the day, as well as, in the after-school programs.

Across the district, members of the Community Education Councils concurred that testing was an essential facet of educational reform. One parent member of a Queens council who was introduced to me by the assistant principal above, argued that since 'we know that testing improves retention of important information, we are all for transparent testing' (personal communication, April 3, 2009). Similarly, a member of a council in the Bronx noted that testing was the best way to gauge where the district

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stood in meeting its academic benchmarks and NCLB compliance goals (personal communication, September 14, 2010).

As shown in the previous examples, standardized evaluation practices – such as the high-stakes testing under NCLB – are 'organizations of activity that produce space and time by mobilizing and accumulating distant settings [in which such things as academic standards were adopted and test questions devised] into present contexts and accounts' (Fenwick and Edwards 2010, 114). They are 'cultural devices with various meanings' (Shore and Wright 1997, 7). Testing of the official standards was recognizable, in practices and discourses, as an important aspect of complying with federal policy. It became a durable component of the nation's educational system. Policy actors in this study had to contend with the NCLB mandates by at least, repeatedly (and frequently) performing the rituals of testing for all to see. Accountability often hinged not on test results, but on the performativity of testing.

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Managing and manipulating figures

Testing data were grouped, compared, and ordered in a variety of ways to create reportable testing data during the study. Schools became accountable for generating, managing, storing, and using the data. NYC tackled the issues of data and information management through several integrated strategies. An 81 million dollar data management system was purchased from IBM. A division of the DOE was devoted to data management and another focused on data-driven instruction. Multiple reports were created and populated annually for each school in the district and made available online. Data-teams were organized at schools and educational support companies were hired to provide professional development for administrators and teachers in disaggregating and using test score data, in tracking NCLB compliance, and documenting students' academic progress.

Of the strategies, the purchasing and implementation of the 81 million dollar Achievement Reporting and Innovation System (ARIS) best demonstrated NCLB's emphasis on quantifiable data. Several principals in the study expressed concern at the price of ARIS during a time of budget cuts and also at the uneven implementation of the system. After the release of ARIS was delayed, one Brooklyn principal explained that he'd already purchased an alternative data system created by a fellow principal: 'My accountability timeline couldn't wait for ARIS. I'm accountable. IBM isn't, and apparently the DOE [that] concocted this specialized system isn't either, despite their obsession with data' (interview, December 7, 2008). A few principals in the study used five to ten thousand dollars of their discretionary funds to buy the alternative system, which tracked student progress, grades, and compliance with NCLB. One principal explained, 'we have to at least look like we're buying into this data stuff' (personal communication, November 14, 2009) and even those who resented the focus on data management begrudgingly adopted ARIS.

In contrast, throughout the district, administrators and city officials were hailing ARIS as an essential tool, especially for principals whose schools were already under review for low student performance. One expounded:

> ARIS allows teachers and principals to see all their data in one place. That's unheard of.... Principals might not like it, anyway at first, but this is the future. They won't be able to meet their obligations to the district and so on if the data in ARIS isn't

> looked at. No Child [Left Behind] requires this kind of hyper-specialized data system. We didn't make it up. (Interview, February 19, 2009)

The administrator's comments were echoed by Schools Chancellor Klein and US Secretary of Education Arnie Duncan. During an introductory ARIS workshop, Klein told journalists that 'for NYC teachers, the future is now' and he predicted that NYC would be a national model of data-driven instruction (http://insideschools.org/blog/2008/11/17/aris-live-at-last). At a press conference in Brooklyn, Duncan expressed his hope that states would use the economic stimulus money to adopt accountability-oriented reforms, such as ARIS (Cramer 2009).

Others, however, noted that the concentration on a new comprehensive data collection and management system reduced the amount of time administrators and teachers were actually spending on face-to-face time with students. A Manhattan assistant principal complained:

> Sure, ARIS is fancy. Teachers can look up trends in test scores and even blog, but all the time spent arming ourselves with ARIS isn't worth it. Yesterday, [I went] in a class and no teacher. No teacher teaching. She's at her computer, waiting for some table to load to see which students knew how to write topic sentences or something. I mean really. Is this a good use of her time? If this is compliance, it isn't worth it.... Impacting teaching with data isn't supposed to mean less teaching time. (Interview, April 29, 2009)

A district administrator, who I met the first week of the initial study, often talked about the difference between using data diagnostically to improve and differentiate instruction for a variety of learners versus using it mostly to be NCLB compliant by generating the multiple reports required by the policy. In several conversations, she admitted that although the DOE was working towards using data to inform instruction and curricular decisions, ARIS was predominantly used to meet the NCLB and Children First tracking and reporting components.

Across NYC, ARIS became instrumental in measuring, documenting, and reporting progress toward standards: Fenwick and Edwards (2010) explain that 'to ensure that standards are achieved, practices are accounted for, made both calculable and representable' (114). NCLB mandated local education authorities and state agencies to become reliant on what Ozga (2009), in her examination of the increased data production and use in England's educational system, aptly refers to 'the growth and development of data-based systems of inspection and performance management...' (149). ARIS kept schools focused on the production and comparison of data and required them to increase their capacity for integrating each individual student's data into school, district, and state evaluations. It emerged as an ongoing surveillance system that allowed the DOE to centralize and regulate schooling practices. It became a tool of federal policy (in which the evaluation data and the multiple reports in which it appeared) as growth, generation, and ultimate reliance on data production and management legitimized the increased governance of the federal government in matters of public education.

Throughout this study, compliance with NCLB was measured through the production and publication of student test results, yearly school progress reports, learning environment surveys, quality review reports, and the annual school report card.[3] Through a series of translations, attendance records, class size, teacher performance, student test scores, school surveys, and variety of materials collected at individual

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schools and across the district were transformed into educational measures. Once transformed and incorporated into a host of summaries and comparisons, these calculations circulated among several nodes in the network – schools, districts, state educational agencies, commercial entities, and the federal government.

Reporting and fabricating facts

Amidst the concerns over ARIS highlighted in the previous section, several district administrators and city officials bragged that ARIS was the best NCLB solution in the country. One veteran regional superintendent seemed to capture the district's sentiments when she stated:

> With ARIS, we don't need to worry about the same things. We have all this data to help us with our academics…. We've moved now from [a focus on] tests to how we can use these scores to improve teaching and learning. (Interview, August 8, 2009)

Yet, despite the superintendent's confidence in ARIS to maneuver the city's school data into a myriad of useful reports, the potential of the data to obscure what student's were actually learning – and being tested on – remained high throughout the study. The construction of the data, as well as the comparison of data was to be accepted at fact, often without knowledge of how the data was gathered or how the reports were generated. This concealed the governmental steering of practices through the data system and reduced schools to conduits of information and managers of data flow.

In 2010, an outside audit of the New York's third through eighth grade reading and math tests mandated by NCLB, requested by Merryl Tisch, the new chancellor of the Board of Regents, which governs the NYSED, revealed that New York had lowered its standards. To meet the federal pressure to increase test scores to meet NCLB's 100% proficiency goal by 2014, the NYSED lowered the bar by which 'proficiency' was determined. In 2006, students in all grades needed to earn nearly 60% on the mathematics exam, but by 2009, they needed to earn less than 50 (Ravitch 2009). When asked about the test-score inflation, several district administrators and principals responded, usually in hushed tones, that something seemed to be amiss. Similarly, several NYSED employees confided in me that they were concerned about the inflation. In a March 4, 2009 phone conversation, one told me that 'something is really wrong' and proceeded to admit that she was not the only one in the department who thought so.

For several years there had been a growing gap between students earning proficient scores on the state tests administered under the terms of NCLB and those earning proficient scores on the National Assessment of Education Progress (NAEP) tests. In a notable statewide example from 2008, 'the percentage of eight-graders reaching proficiency on the state's math test rose from 58.8% in 2007 to a stunning 80.2% in 2008' (Stern 2010), even as NAEP math scores remained nearly unchanged for the same period. The Board of Regents and the state's education commissioner at the time failed to investigate the incongruent state and national test scores and defended the state's testing practices on the NYSED website.

In NYC, Mayor Bloomberg and Schools Chancellor Klein touted the increased state test scores as evidence of the success of their reforms, choosing to ignore the multiple warning signs, including reports that demonstrated that in some grades, it was possible to pass the state exams by guessing (Kolodner 2009; Senechal 2010).

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The test scores replaced a multi-faceted knowledge about what children had learned, dictating many policy decisions and everyday practices. In Bloomberg's third mayoral reelection bid, the standardized tests and their scores achieved near superstar status as a campaign device, although too little consideration was given to their content. Even after the state recalibrated the 2010 test scores, resulting in many fewer students meeting or exceeding the new mathematics and English proficiency standards in 2010 than in previous years, Bloomberg and Klein continued to state that NYC students were still making substantial academic progress (Zraick 2010).[4]

However, those who worked most closely with the tests in schools frequently expressed concerns about the tests. A literacy coach in Queens explained:

> People in charge of tests, at the state level and here in New York [City] have reason to raise test scores. McGraw-Hill [the private education publisher that designed the tests], the teachers and principals who are scared shitless about losing their jobs if scores don't go up, everybody's watching his back now that NCLB has us by our balls. And that's just some of it. (Interview, December 4, 2009)

A Manhattan principal concurred, noting that it was likely that the test scores had been inflated through the work of CTB/McGraw-Hill who designed the tests, converted the tests' raw scores to a wider scale, and then set the cut scores, the minimum points required for each proficiency level. She said that the NYSED shared the blame for their lack of oversight and the DOE for their public enthusiasm over the test gains, but that CTB/McGraw-Hill, who shared none of the accountability faced by the state's schools under NCLB, should be sued for providing defective tests (personal communication, August 22, 2010).

A NYSED staff member defended the tests created by CTB/McGraw-Hill, but according to Fred Smith – a retired Board of Education senior analysis, who worked for the city public school system in test research and development – there is evidence to suggest that the exams 'are fundamentally flawed' (Smith 2010). In his blog, dated September 8, 2010, he argues that the 38 million dollars paid by NYSED to CTB/McGraw-Hill for the tests used from 2006 to 2009, was ill spent according to documents obtained under the Freedom of Information Act which showed internal inconsistencies between scores on multiple-choice and constructed-response questions emerged on field tests prior to the creation of the actual exams. All of the principals re-interviewed during 2009–2010 admitted that they noticed discrepancies when they disaggregated the scores by question-type on several practice tests provided by CTB/McGraw-Hill. One Queens assistant principal expressed her dismay:

> We spent all this money to get teachers and kids ready for the tests.... We had to create testing leadership teams and scoring teams. We bought PDs (Professional Development workshops) from McGraw. We even held the recommended mini refresher-workshops prior to the tests.... We did it all, everything they said we should and now [after the new scoring] we've fallen below proficiency in every grade. (Interview, September 19, 2010)

In fact, all 42 schools involved in the first 3 years of the study had also purchased some combination of adjunctive services offered by the test publishers through the district.

Using the concept of translation to consider what happened with the New York tests, it becomes clear that even when numbers, transformed into measures and

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scores, function as objective and immutable objects and are acted upon by humans, they are not infallible. However, as well-described by Gorur (2010a), it is through such 'evidence' that government policy aims both to legitimize itself and also garner support from the populace. She notes that 'numeric evidence, seen as neutral and infallible, is widely used to form, legitimate, inform and evaluate policy' (3). New York's inflated test scores also served to squelch resistance to the localization of NCLB mandates.

Concluding thoughts

Much of the policy work revealed in this article centers on organizing fragmented activities and heterogeneous materials to appear rationally (and quantifiably) aimed towards meeting AYP targets under NCLB. What I've highlighted are the ways in which actors, in and out of schools, become connected to and engage with the generation, manipulation, and reporting of testing data – which is then circulated as supporting evidence for the success of NCLB and the Bloomberg administration's educational reforms. My interest throughout has been on the circulation of these forms across multiple contexts through which NCLB testing and standardization become defined, organized, and enacted locally in NYC – and then fold back on federal and local policy to verify their certainty and to legitimize their future necessity.

Actors are seen enacting NCLB documents and also mutually constituting them 'in forms that could be accumulated, summarized, and compared' (Nespor 2002, 367). These forms reduce education to seemingly stable, comparable, and transportable categories and classifications; they are the result of translating complex educational practices into the limited categories of NCLB. In fact, the SES providers in this study admit that the primary function of the testing data they generated, and which circulated from the provider, to schools, to parents, and to the district is to maintain compliance with NCLB and the city's educational reforms. Yet, whilst the testing data and AYP reports are recognizable as they move across schools and the district, they are also transformed as they mobilized and changed actors.

This article follows other studies that use an ANT sensibility to examine standards in showing 'how precarious are attempts at ordering, how immutable mobiles are always mutable, and how the network spaces that proliferate around instantiations of standards always generate uncertainties, transgressions, and wonderfully generative ambivalences' (Fenwick 2010, 130). It uniquely demonstrates, however, how particular kinds of materials, events, and human actors are drawn together during the localization of NCLB testing mandates because of the interconnectedness of politically effective networks across NYC. A consistent circulation of data is a central feature of these 'Bloombergesque' networks, which spanned media, finance, and politics. Large for-profit tutoring and testing companies – most of which are owned by large media corporations – are well-established as DOE vendors, and can be quickly mobilized and enrolled in the NCLB network. Schools in NYC, under the direction of Mayor Bloomberg are linked to multiple evaluative and data producing networks, including those connected with the business, media, and finance spheres of Bloomberg's market-driven (and driving) 'machine.' These overlapping and intersecting constellations amplify the ways in which NCLB's testing mandates are connected with the data-generating systems that had been previously

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built into the city and 'held in place by other actors and chains of ongoing effort' (Fenwick 2009, 4).

More broadly, this particular ANT examination of NCLB standards and accountabilities resonates with critical perspectives that focus on the power and politics of policy, outside of education. It is informed by Apthorpe (1997) who interrogates the ways in policy language obfuscates a policy as 'data-driving' and it builds upon the work of Schneider and Ingram (1997) who demonstrate how numerical standards, quantitative decision aids, and standardized procedures infuse policy processes with professional and scientific values that narrow citizen participation, reduce democratic discussion, and reorganize everyday practices. This article also empirically confirms what Stone (2002) insists is the precisely political nature of policymaking, in which determining and measuring outcomes becomes disconnected from the decisions that include some things and exclude others as policy evidence. It contributes to this work by demonstrating how federal testing mandates, as policy instruments, generate new alliances in the city between government, schooling, and commerce, and organize public knowledge not just about schools, but additionally about the Bloomberg administration's vision and platforms.

ANT explains how visible parts of policy processes, such as rising test scores and reports generated by expensive data systems, become often unquestioned truths that temporarily solidify a policy's ability to reorganize and reorder actions and fields of activities; however, ANT also helps illuminate how this reordering is temporal, messy and unstable. ANT analysis can, as accomplished here, reveal both the micro-negotiations at particular links and the translations across links that ensue when disparate policy actors mobilize, accumulate, and actively reframe and reposition policy. It is particularly useful in capturing multiple policy and political fields of 'competing social forces and projects that are continually shifting, with alliances being formed and dissolved' (Hamilton 2010, 15). Thus, it has the potential to empirically reposition educational policy processes and their emerging networks with, rather than within, constellations or assemblages of other social, political, and economic processes, which all impact educational change and reform.

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Notes

1. Words and phrases that are socially constructed and contested first appear in quotation marks.
2. Interviews in 2009 and 2010 were conducted either via telephone or Skype. 'Personal communication' refers to an email communication or an untaped telephone conversation.
3. The Progress Report measures student year-to-year progress and compares each school's progress to peer schools and The Quality Review Report summarizes what the district observers viewed at the school, as well as the student achievement data. The Learning Environment Survey Report provided the results of annual surveys given to teachers, students, and parents. The Annual School Report, complete with an A-F grade, provides statistical data about the school, the staff, and the students' demographics, enrollment, and achievement.
4. Across grades 3–8, those students meeting the proficiency standards dropped from 77% in English and 86% in math to 53% in English and 61% in math across the state (NYSED 2010).

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