

Quantitative Source Functions across the Disciplines is a blow-for-blow reconstruction of the standard “Source Functions across the Disciplines,” but with quantitative examples. It provides examples of how numerical evidence can serve a variety of functions in academic writing. Each example also represents a distinctive form of quantitative evidence, including simple counts (both original and paraphrased from another source), descriptive statistics, and inferential statistics (which are presented parenthetically, in detail, and in visual form).

Quantitative Source Functions is geared primarily toward teaching **source use** but also touches on **analysis, motive, orienting, structure,** and **thesis**.

Two requests if you adopt this resource for use in your seminar:

1) **Experiment away!** Like the many fantastic materials on our regular faculty Blackboard site, this resource is meant to be revised, reworked, rethought in ways that suit your teaching style and classroom needs. If you’d like a .docx version of the file to edit, shoot me an email (akd@) and/or come harass me in person (New South 303).

2) If you use (or update) a resource, **I’d love to hear about what you did—and how it went!** All Camel resources are subject to refinement and revision based on what happens when real students use them in real seminar scenarios. The more feedback the Camel team has to work with—good, bad, or ugly—the better our resource bank will be for future generations of PWP faculty.

Enjoy!

-Alex

Quantitative
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Source Functions Across the Disciplines

Just like other source types used across the disciplines, **quantitative** sources may be used...

- **To provide a primary focus of analysis.**

From an economics paper on the relationship between institutions and per-capita income: Table 2 reports ordinary least-squares (OLS) regressions of log per capita income on the protection against expropriation variable... The R^2 of the regression in column (1) indicates that over 50% of the variation in income per capita is associated with variation in this index of institutions. To get a sense of the magnitude of this effect, let us compare two countries, Nigeria, which has approximately the 25th percentile of the institutional measure in this sample, 5.6, and Chile, which has approximately the 75th percentile, 7.8. The estimate in column (1), 0.52, indicates that there should be about a 1.14-log-point difference between the log GDPs of the corresponding countries (or approximately a 2-fold difference). In practice, this GDP gap is 253 log points (approximately 11-fold). Therefore, if the effect estimated in Table 2 were causal, it would imply a fairly large effect of institutions on performance—but still much less than the actual income gap between Nigeria and Chile.

- **To invoke the status quo—the standard opinion(s) on a topic, the standard way in which a problem is approached, or the current state of knowledge in the field.**

From a sociology paper on knowledge production in economics: In 2003, economists Thomas Piketty and Emmanuel Saez published a surprising finding: the top 1% of income earners in the United States were now receiving 15% of all income, almost twice as large a share as they had 30 years earlier. And, perhaps even more surprisingly, top income earners were now receiving the largest share they had ever received, equaling their peak just before the Great Depression. But was Piketty and Saez's finding really so surprising? The trend of growth in the top 1% of incomes began in the mid-1980s, and was at least potentially visible in publicly available IRS tax data (see Figure 1). Piketty and Saez did not invent any fancy new statistical techniques, but rather updated an analysis published by Simon Kuznets half a century earlier (see Figure 2). What made it possible to miss the growth of the 1%?

- **To establish a problem or question worth addressing.**

From a politics paper on Supreme Court confirmations in the U.S. Senate: Roll call voting in the U.S. Senate on nominees to the Supreme Court in recent decades presents political scientists with a puzzle. In some cases, as shown in Table 1, the Senate routinely confirms the nominee. In these cases, liberal senators vote for conservative nominees and conservative senators vote for liberal nominees. But on other occasions—including 9 of the 20 post-*Brown-v.-Board of Education* confirmations (see Songer 1979)—the confirmation is extremely contentious. In these cases, many or even most senators vote against the nominee, and voting becomes ideologically polarized. We therefore face some puzzling questions: Why are some votes consensual? Why are some votes contentious? And what determines voting decisions in both cases?

- **To supply context or background information.**

From a history paper on gender and evangelical movements in the early 19th century: Utica and its environs, like other bounded localities, provides the specific population and a concrete and manageable body of records through which to identify the precise roles women played in the Second Great Awakening. The distribution of Christian names within the registries of four local churches indicates that women were in the majority during each revival and at every church. The proportion of female converts ranged from a low of approximately 52 percent in the Whitesboro Baptist Church in 1814 to a high of around 72 percent during the revival that occurred in the same church in 1838. All these proportions were above the sex ratio of the population at large: women constituted slightly less than 50 percent of the combined population of Utica and Whitestown at the beginning of the revival cycle and accounted for only 51.3 percent by 1838.

- **To grapple with or build on another opinion or interpretation.**

From a psychology paper on individualism and collectivism among European Americans (using meta-analysis of other published studies): Because researchers continue to contrast European Americans with heterogeneous groups of “Americans of color” (e.g., Gaines et al. 1997), we first contrasted them to all other American groups, using all of the 74 available comparisons. As seen in Table 12, European Americans are significantly lower in collectivism than Asian Americans and Latino Americans, but the combined effect size was small ($d = -0.28$, CI: -0.32 to -0.23) and heterogeneous ($Q_w = 192.14$, $p < .001$). The highly significant homogeneity coefficient underscores that generalizations about differences between European Americans and individuals of other ethnicities are unwarranted. Moreover, though not directly comparable, effects appeared generally more modest for within-U.S. than for cross-national comparisons.

Additionally, **quantitative** sources can also be used...

- **To consider the broader stakes of a smaller or limited analysis.** Like borrowing a key term or concept from a non-quantitative source (and then qualifying, refining, or adding to it), the writer draws upon contextual information or established knowledge to suggest the possible implications of their analysis and argument. Note: this does partially overlap with two other source functions, “*To invoke the status quo*” and “*To supply context or background information,*” but it is also a distinctive source use strategy—one most often deployed in a paper’s conclusion.

From an anthropology paper on the widespread political and social stigma of being HIV-positive in South Africa: South Africa now has one of the largest HIV/AIDS treatment programs in the world. Yet only approximately 60,000 of the estimated 600,000 people needing treatment are receiving ARVs through the public health sector, whereas another 45,000 are accessing treatment in the private sector (*Cape Times* 2006). This limited access to treatment is particularly worrying given current estimates that there are between five and six million HIV-positive South Africans. The nature and scale of that pandemic calls for “new contract” between clients and providers—in which public health professionals recognize that their clients are, as this ethnographic work reveals, empowered, knowledgeable, and “responsibilized.”

TABLE 2—OLS REGRESSIONS

	Whole world (1)	Base sample (2)	Whole world (3)	Whole world (4)	Base sample (5)	Base sample (6)	Whole world (7)	Base sample (8)
	Dependent variable is log GDP per capita in 1995						Dependent variable is log output per worker in 1988	
Average protection against expropriation risk, 1985–1995	0.54 (0.04)	0.52 (0.06)	0.47 (0.06)	0.43 (0.05)	0.47 (0.06)	0.41 (0.06)	0.45 (0.04)	0.46 (0.06)
Latitude			0.89 (0.49)	0.37 (0.51)	1.60 (0.70)	0.92 (0.63)		
Asia dummy				-0.62 (0.19)		-0.60 (0.23)		
Africa dummy				-1.00 (0.15)		-0.90 (0.17)		
“Other” continent dummy				-0.25 (0.20)		-0.04 (0.32)		
R ²	0.62	0.54	0.63	0.73	0.56	0.69	0.55	0.49
Number of observations	110	64	110	110	64	64	108	61

Notes: Dependent variable: columns (1)–(6), log GDP per capita (PPP basis) in 1995, current prices (from the World Bank’s World Development Indicators 1999); columns (7)–(8), log output per worker in 1988 from Hall and Jones (1999). Average protection against expropriation risk is measured on a scale from 0 to 10, where a higher score means more protection against expropriation, averaged over 1985 to 1995, from Political Risk Services. Standard errors are in parentheses. In regressions with continent dummies, the dummy for America is omitted. See Appendix Table A1 for more detailed variable definitions and sources. Of the countries in our base sample, Hall and Jones do not report output per worker in the Bahamas, Ethiopia, and Vietnam.

Table originally published in Daron Acemoglu, Simon Johnson and James A. Robinson, “The Colonial Origins of Comparative Development: An Empirical Investigation” (*American Economic Review*, 2001).

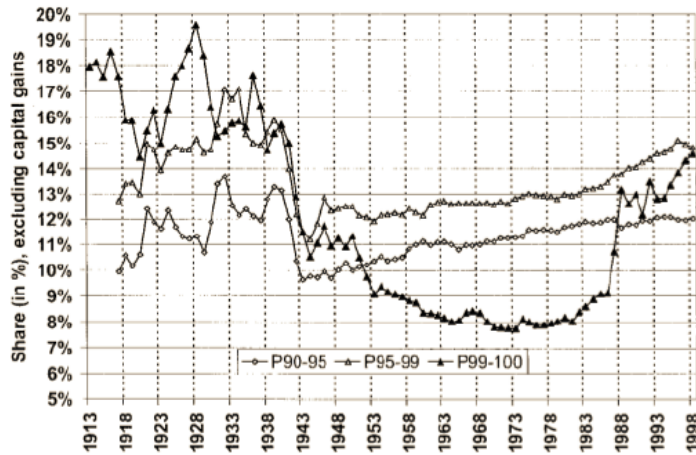


FIGURE II
The Income Shares of P90–95, P95–99, and P99–100, 1913–1998
Source: Table II, columns P90–95, P95–99, and P99–100.

Figure 1: Piketty and Saezs (2003: 12) famous chart showing the growth of top incomes in the 1980s–1990s.

Chart 2
Income Shares of Upper Income Groups, Total Population
Three Variants, 1913–1948

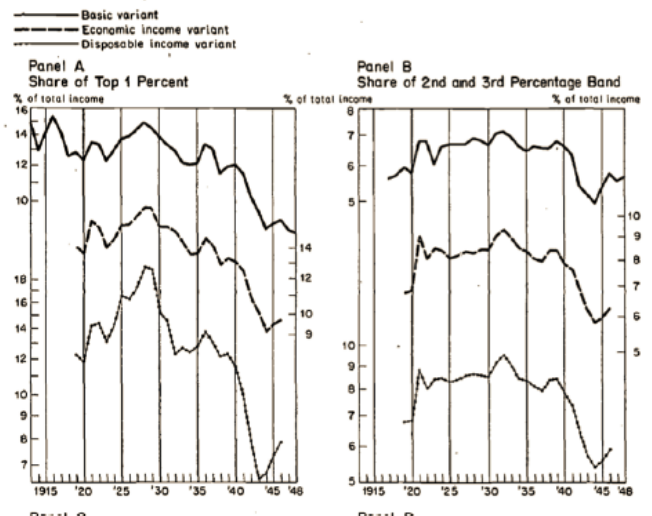


Figure 2: Kuznets (1953:33) less famous chart showing the downward trend of top incomes in the 1930s–1940s.

Charts reproduced in Daniel Hirschman, “Theory-Laden Knowledge Infrastructures and the Stylized Facts of Inequality” (*American Journal of Sociology*, 2019). Figure 1 was originally published in Thomas Piketty and Emmanuel Saez, “Income Inequality in the United States, 1913–1998” (*Quarterly Journal of Economics*, 2003), and Figure 2 in Simon Kuznets, “Shares of Upper Income Groups in Income and Savings” (*Bureau of Economic Research*, 1953).

Table 1. Nominee Margin and Vote Status

Nominee	Year	President's Status ^a	Margin	Vote ^b
Warren	1954	strong	96-0 ^c	consensual
Harlan	1955	weak	71-11	conflictual
Brennan	1957	weak	95-0 ^c	consensual
Whittaker	1957	weak	96-0	consensual
Stewart	1959	weak	70-17	conflictual
White	1962	strong	100-0 ^c	consensual
Goldberg	1962	strong	100-0 ^c	consensual
Fortas 1	1965	strong	100-0 ^c	consensual
Marshall	1967	strong	69-11	conflictual
Fortas 2	1968	weak	45-43 ^d	conflictual
Burger	1969	weak	74-3	consensual
Haynsworth	1969	weak	45-55	conflictual
Carswell	1970	weak	45-51	conflictual
Blackmun	1970	weak	94-0	consensual
Powell	1971	weak	89-1	consensual
Rehnquist 1	1971	weak	68-26	conflictual
Stevens	1975	weak	98-0	consensual
O'Connor	1981	strong	99-0	consensual
Rehnquist 2	1986	strong	65-33	conflictual
Scalia	1986	strong	98-0	consensual
Bork	1987	weak	42-58	conflictual
Kennedy	1988	weak	97-0	consensual

^aThe president is labeled "strong" in a non-election year in which the president's party controls the Senate and "weak" otherwise.

^bA vote is labeled "conflictual" when less than 90% of the votes cast are cast on the winning side and "consensual" otherwise.

^cVoice vote.

^dVote on cloture—failed to receive necessary two-thirds majority.

Table originally published in Charles M. Cameron, Albert D. Cover and Jeffrey A. Segal, "Senate Voting on Supreme Court Nominees: A Neoinstitutional Model" (*American Political Science Review*, 1990).

Table 12

Within-U.S. Meta-Analysis: Overall Collectivism Results

Group	n	Mean weighted effect size (β_{i+})	95% CI	Homogeneity within group (Q_{wi})
African Americans	20	-0.04	-0.14/0.06	38.28**
Asian Americans	31	-0.39	-0.45/-0.33	75.31***
Latino Americans	23	-0.21	-0.31/-0.11	39.94*

Note. Positive values indicate higher European American collectivism; negative values indicate lower European American collectivism. Combined effect sizes that differ reliably from 0 are bold. CI = confidence interval. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table originally published in Daphna Oyserman, Heather M. Coon, and Markus Kemmelmeier, "Rethinking Individualism and Collectivism: Evaluation of Theoretical Assumptions and Meta-Analyses" (*Psychological Bulletin*, 2002).