Notes and Comments

Pitfalls in the Study of Democratization: Testing the Emancipatory Theory of Democracy

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In this issue, Dahlum and Knutsen (D&K) claim to disprove the emancipatory theory of democracy proposed by Inglehart and Welzel (I&W).[1] This theory posits that rising emphasis on universal freedoms, or what I&W call 'emancipative values', is a major force driving the emergence and survival of democracy.

To support their claim, D&K impute country scores to emancipative values for years in which real data are absent.[2] These imputations allow them to produce a time-series cross-sectional (TSCS) database, consisting of some 2,000 country-year observations.[3] Running panel regressions over these data, D&K find that a population's emphasis on emancipative values in a given year has no effect on its level of democracy in the next year. D&K believe that this result invalidates I&W's theory, in which case the values of a population are irrelevant for whether it attains and sustains democracy.

We appreciate this contribution because it provides a welcome opportunity to pinpoint some pitfalls of TSCS frameworks. To do so, we proceed in three steps. First, we describe the problem with TSCS data in conceptual terms; then we illustrate the problem with a simulation; finally we demonstrate what real data say about I&W's theory. We conclude that the evidence supports the emancipatory theory of democracy as powerfully as it did in I&W's original analyses.

THE PROBLEM

I&W argue that emancipative values and democratic institutions are linked through a demand-supply relationship with respect to freedoms: democratic institutions constitute the supply of freedoms, while emancipative values represent the demand for them.[4] The demand-supply linkage suggests a co-evolutionary dynamic between the two variables, but the question is whether supplies change in response to demands or the other way round. A third possibility is that both are driven by something else.

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[1] Dahlum and Knutsen 2015; Inglehart and Welzel 2005; 299–300; Welzel 2007; Welzel 2013, 37–56.

[2] D&K focus on 'self-expression values', even though Welzel improved the measurement and renamed the concept 'emancipative values' (cf. Welzel 2007; 2013, 66–9).

[3] D&K employ imputations to such an extent that more than 80 per cent of the data in emancipative values are unobserved. Hence, the analysis is a simulation rather than an empirical study. Below, we also conduct a simulation – not to make an empirical statement, but to illustrate a logical problem.

[4] Inglehart and Welzel 2005, 186–91.

To analyze this problem, one needs to understand the distinction between glacial and disruptive changes – and the fact that any TSCS framework based on years as the temporal unit of observation is inadequate to analyze either type of change.[5]

The rise in emancipative values advances at a glacial pace, involving incremental moves along stable trajectories.[6] Relative to its accumulated level, change in a glacial variable from one year to the next is always small, sometimes not even recognizable and often within the margin of measurement error. With a glacial change pattern, using country-year observations involves mixing negligible variation in the time dimension (years) with massive variation in the spatial dimension (countries). Doing so bloats the number of cases by admitting a heavy imbalance in variation between space and time. The result is an artificial gain in statistical power. The imbalance is aggravated when the TSCS matrix covers many more countries than years, as is the case with D&K's data.[7] Such an imbalance renders the authors' country-fixed effects models nonsensical: all these models show is the impact of minor annual differences within countries.[8] Since minor differences are unlikely to show a significant impact, country-fixed effects models increase the chances of rejecting an effect that actually exists.

TSCS frameworks using country-years are inadequate for glacial variables. But another type of variable inflicts equally serious problems on TSCS frameworks, albeit in an opposite way. Our second variable of interest, *democratic institutions*, is a case in point. As is true for regime characteristics in general, democratic institutions are designed to endure. Because of this intended endurance, regime changes are rare. Some countries have not experienced a regime change since they exist, and even in countries where such changes are relatively frequent, they rarely occur more than once or twice in a lifetime. But when they happen, they rapidly remodel a society's entire institutional make-up. This is precisely what happens in transitions towards or away from democracy: after decades of stability, countries suddenly experience drastic shifts in their level of democracy.[9]

The disruptive change in democratic institutions contrasts sharply with the glacial change in emancipative values.[10] Nevertheless, the long-term trend in both variables has been progressive in recent decades, with both emancipative values and democratic institutions becoming more widespread.[11]

How can one make sense of a co-dynamic in which the demand for freedoms moves glacially while the supply moves disruptively? I&W argue that the most plausible way to think of this co-dynamic is a 'tectonic' model of incrementally accruing tensions, causing rare eruptive shifts to release them.[12] This model assumes that glacially accumulating demands for freedoms build up a slowly growing tension with stagnant supplies, until the tension releases in a disruption that swiftly shifts the supplies into equilibrium with the demands.

In I&W's theory, modernization drives the 'tectonic' model. By increasing longevity, education and information, and by improving material conditions, consumer technologies and social connectivity,

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[5] TSCS data match spatial and temporal units in ways that give them an equal unit-dividing effect. Doing so assumes that space and time are captured at the point at which their reality-shaping power is equal. However, when the spatial units are countries and the temporal units are years, this assumption is violated. A series of years within the same country hardly ever produces differences even remotely as large as those produced by a cross-section of countries within any given year. Thus country-year observations match space and time in ways they should not, if both are considered equally important sources of variation. Using panel-corrected standard errors is a posterior cure of an already ill-designed matching of space and time.

[6] Inglehart and Welzel 2005, 112, 131–3; Welzel 2013, 91, 143, 160.

[7] D&K praise the superiority of their analysis because it maximizes the number of simultaneous control variables. However, Achen's work on 'garbage can regression' and Clark's work on omitted variable bias as a 'phantom menace' demonstrate that controlling for many variables simultaneously does nothing to improve a model.

[8] The purpose of country-fixed effects models is to eliminate unobserved differences in country trajectories. But including the countries' democratic tradition among the predictors in a prediction of democracy already takes care of this problem. Thus, D&K double treat a problem, 'omitted variable bias', that is anyways overrated.

[9] Inglehart and Welzel 2005, 212–15.

[10] Inglehart and Welzel 2005, 212–15.

[11] Welzel 2013, 91, 143, 162, 266.

[12] Inglehart and Welzel 2005, 41–3.

modernization enhances people's 'action resources'. Equipped with more and better action resources, the things that people can pursue at will – both individually and jointly – multiply. As they recognize their enriched options, people 'naturally' begin to see value in freedoms, realizing that they need freedoms to use their options as they wish. Thus, demands for freedoms rise as growing action resources elevate people on the 'utility ladder of freedoms'.[13] If this happens in regimes that deny freedoms, tension builds up until an event opens an opportunity to voice the increased demands. As Kuran pointed out, autocratic rulers are often surprised by the suddenness and breadth of the people's voice.[14] If the voice swells wide enough, regime alliances implode and the emerging opposition enforces a regime change through which freedoms rise to match demand. *Freedom Rising* presents ample evidence of this logic.[15]

The same demand-supply logic can, unfortunately, operate in the opposite direction: when mass demands for freedoms are far below supplies, authoritarian-minded rulers meet little resistance when imposing restrictions on freedoms.[16] Russia, Romania, Hungary and Turkey are cases in point.

D&K's panel regressions do not test the tectonic model.[17] Instead, their regressions assume that the underlying process is one of repeated reoccurrence in a series of equally thin-cut slices: demand in one year is supposed to have an equal effect on supply in the following year, for every pair of years in the time series.[18] If, however, supply moves in infrequent but massive shifts, even a powerful effect of demand remains undetected.

A SIMULATION

To illustrate this point, we simulate a reality in a typical TSCS framework. It matches thirty-six hypothetical countries and twenty years, generating 780 country-year observations. We create this virtual reality as follows:

(1) In year 1, both democratic demands and supplies exist at low, medium and high levels, so that all combinations between the two are present.
(2) From years 1 to 20, demands change in incremental moves on stable country trajectories, mostly on increasing slopes but sometimes also declining.
(3) Demands follow similar trajectories in economic development, lagged by one year.
(4) Supplies do not change until year 15, but from years 15 to 16, sudden shifts occur in some countries, albeit not in others, and in opposite directions and to different extents.
(5) These shifts move supply levels exactly to where the demands were in the year before the shifts.
(6) From years 16 to 20, supplies are stable again.
(7) From years 1 to 15, supply shifts in countries with incongruent demands are blocked by an international constellation that shields incongruent regimes from domestic pressures – like the situation that existed during the Cold War. In year 15 this constellation dissolves. We represent this condition by a dummy variable called *switch*, which we code 1 for year 15 and 0 otherwise.

These rules are simulated in such a way that they apply in perfection: our virtual reality conforms entirely to the tectonic model.

Would a conventional panel regression grasp this reality? The answer is a resounding 'no': already the most basic panel regression fails to uncover an effect of demand on supply. Specifically, regressing

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[13] Welzel's 'utility ladder of freedoms' reformulates Maslow's hierarchy of needs with respect to freedoms (Welzel 2013, 403–6).

[14] Kuran 1991.

[15] Welzel 2013.

[16] Zavadskaya and Welzel (2014) show that authoritarian success is more likely where weak emancipative values indicate a low demand for freedoms.

[17] This also holds true for the analyses by Spaiser et al. (2014) and Spaiser and Sumpter (2015). To test I&W's theory, these authors use various sophisticated techniques, but none of them tests the tectonic model. The results are thus inconclusive as concerns the emancipatory theory of democracy.

[18] Varying the lag length in a TSCS regression reproduces the unrealistic assumption that an effect always manifests itself in fixed temporal intervals.

TABLE 1   *The Incapacity of TSCS Panel Regression to Grasp a Temporally Pointed Effect*

	Dependent variable:		
	Supply of Democracy at T_0		
	Model 1	Model 2	Model 3
Constant	0.00 (0.01)[†]	0.00 (0.07)[†]	0.01 (0.04)[†]
Supply of Democracy at T_{-1}	0.93 (0.06)***	0.93 (0.09)***	0.95 (0.06)***
Demand for Democracy at T_{-1}	0.07 (0.70)[†]	0.05 (0.80)[†]	0.05 (0.80)[†]
Economic Development at T_{-1}		0.02 (0.76)[†]	0.15 (0.57)[†]
Switch (1: on, 0: off)			0.41 (0.01)***
Demand × Switch			0.93 (0.02)***
Adjusted R^2	0.91	0.91	0.95
N (countries)		36	
N (years, minus 1)		19	
N (country-years)		684	

Note: source of observations is a simulated dataset, as described in the online appendix. Entries are unstandardized coefficients with their standard errors in parentheses. Significance levels indicated at the 10-, 5- and 1-% level: [†, *, **, ***]. Results are obtained from running panel-corrected standard errors in STATA.

supplies in each year on their levels in the previous year and on demands in the previous year, Model 1 in Table 1 shows that demand has a completely insignificant effect on supply. Model 2 adds the lagged level of economic development as an additional control and repeats the result. Confirming D&K, this model suggests that democratic demands are irrelevant to supplies – despite the fact that the data have been constructed to represent the exact opposite reality, as the left-hand diagram in Figure 1 illustrates.

Panel regressions using country-year observations are prone to such errors.[19] I&W explicitly rejected a TSCS framework for this reason.[20] Instead, they tested the tectonic model for what it says: the direction and extent of regime transitions are a function of the misfit of the supply of freedoms to the demand for them present when these transitions occur.[21] This general proposition has three specific implications:

(1) When the supply of freedoms undercuts the demand, the direction of an occurring transition is towards democracy, elevating the supply to the extent to which it had previously undercut the demand.
(2) When the supply of freedoms surpasses the demand, the direction of an occurring transition is away from democracy, lowering the supply to the extent to which it had previously surpassed the demand.
(3) When the supply of freedoms is congruent with the demand, no transition occurs; we observe regime stability.

Arguably, this is the only theory that offers an explanation of both the direction and the extent of regime transitions and at the same time incorporates the possibility of regime stability – the case when the extent of the transition is 0. Explicitly, this theory operates under conditions involving international and domestic alliances.[22] Regime transitions only happen (1) when international alliances cease to shield given regimes

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[19] The only way to uncover the effect of demand on supply in a TSCS framework is to identify the particular periods of supply shifts and dummy-code them as a switch on/off variable with which one interacts the demand, as shown in Model 3.

[20] Inglehart and Welzel 2005, 213. Neither D&K nor Spaiser et al. (2014) – nor Spaiser and Sumpter (2015) – get this point. This is most obvious when these authors plot the change in democratic supplies against the level of democratic demands to argue that demand does not influence supply. Doing so is akin to comparing apples and oranges, because the same demand level radically changes its meaning depending on the supply level at which it exists. Hence, it is not the democratic demand *per se* that matters for regime change. Instead, it is the misfit of the given supply relative to the demand. Figures 2 and 3 demonstrate this point.

[21] Inglehart and Welzel 2005, 186–91; Welzel 2013, 301–4.
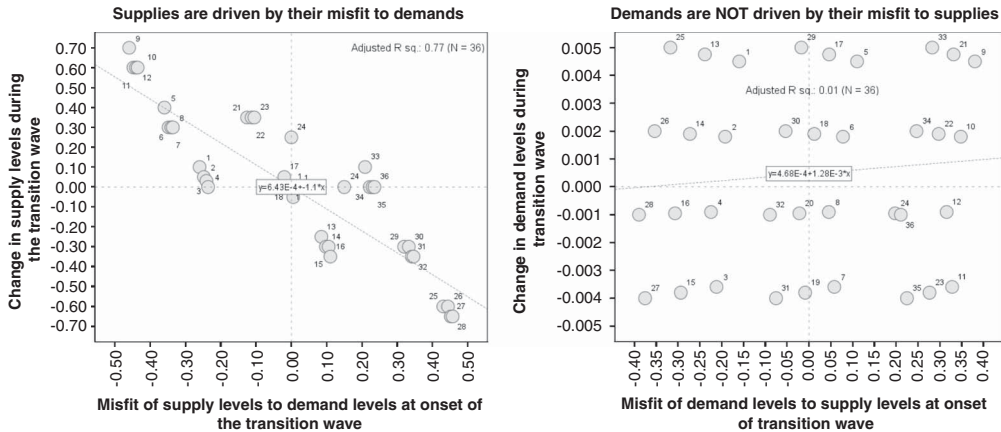
[22] Inglehart and Welzel 2005, 215–22.

Figure 1. Simulated relationship between mass demands for democracy and elite supplies of it.
Demand levels: *mass demands for democratic freedoms in hypothetical countries before and after a hypothetical wave of regime transitions.*
Supply levels: *institutional supplies of democratic freedoms in hypothetical countries before and after a hypothetical wave of regime transitions.*
Horizontal axis (left-hand diagram): *misfit scores grow negative as supply levels before the wave fall short of where the demand levels at that time suggested they would be; they grow positive as supply levels before the wave surpass where demand levels at that time suggested they would be. Misfit scores center around 0 as supply levels approximate where demand levels suggested they would be. Misfit scores are obtained from regressing the supply levels before the wave on the demand levels at that time, and saving the residuals.*
Vertical axis (left-hand diagram): *change scores grow negative as supply levels dropped from before the wave to after; change scores grow positive as supply levels jumped from before the wave to after. Change scores approximate 0 as supply levels remained stable.*
Horizontal axis (right-hand diagram): *misfit scores grow negative as demand levels before the wave fall short of where the supply levels at that time suggested they would be; they grow positive as demand levels before the wave surpass where supply levels at that time suggested they would be. Misfit scores center around 0 as demand levels approximate where supply levels suggested they would be. Misfit scores are obtained from regressing the demand levels before the wave on the supply levels at that time, and saving the residuals.*
Vertical axis (right-hand diagram): *change scores grow negative as demand levels fell from before the wave to after; they grow positive as demand levels rose from before the wave to after. Change scores approximate 0 as demand levels remained stable.*

from internal pressures and (2) when domestic alliances emerge that mobilize such internal pressures. Hence, democratic demands always affect transitions in the presence of these alliance conditions. This means that alliance conditions and mass preferences explain two distinct aspects of regime change: alliance conditions explain when regime change happens; mass preferences explain in which direction and how far it goes.[23]

THE EVIDENCE

Confirming the tectonic model, I&W demonstrated that the misfit of democratic supplies to democratic demands, present at the time when a 'wave' of transitions occurs, explains these transitions' direction and extent, including the many cases for which the extent is 0 (regime stability).[24] Figure 2 replicates the evidence with Welzel's data on a broader country base.[25] Figure 3 shows an update of this pattern that

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[23] Inglehart and Welzel 2005.
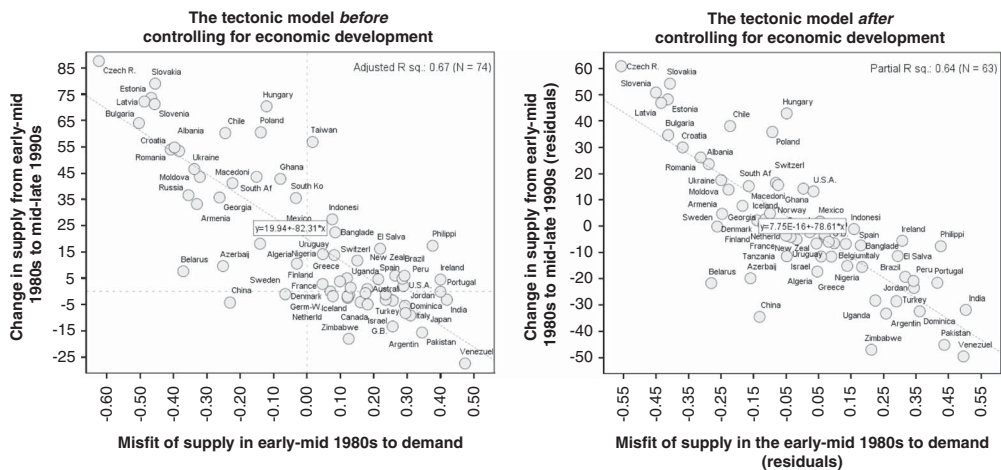[24] Inglehart and Welzel 2005, 189.
[25] Welzel 2007.

Figure 2. *Real relationship between mass demands for democracy and elite supplies of it (Wetzel's original data).*
Demand levels: *Welzel's (2007) index of emancipative values (minimum 0, maximum 1), measured at earliest available time from the late 1980s till mid 1990s.*
Supply levels: *Welzel's (2007) democracy index, combining Freedom House, Polity IV, Vanhanen and CIRI (minimum 0, maximum 100), measured 1981–85 and 1995–99.*
Horizontal axis (left-hand diagram): *misfit scores grow negative as supply levels in the early to mid-1980s fall short of where the demand levels suggested they would be; they grow positive as these supply levels surpassed where demand levels suggested they would be. Misfit scores center around 0 as supply levels approximate where demand levels suggested they would be. Misfit scores are obtained by regressing the supply levels in the early to mid-1980s on the demand levels, and saving the residuals.*
Vertical axis (left-hand diagram): *change scores grow negative as supply levels dropped from the early to mid-1980s to the mid to late 1990s; they grow positive as supply levels jumped from the early to mid-1980s to the mid to late 1990s. Change scores approximate 0 as supply levels remained stable.*
Right-hand diagram: *same relationship as on the left, but controlling for economic development, using a combined measure of per capita income and Vanhanen's 'power resources' from the late 1980s, as documented in Welzel (2007).*

extends the evidence over thirty years, including all countries ever surveyed by the World Values Surveys, based on plausible estimates of emancipative values for 1980 and 2010.[26]

D&K's findings, and those of similar critics,[27] are irrelevant to the evidence in Figures 2 and 3.[28] Besides, the claim that mass preferences do not matter for the fate of political regimes contradicts democratic theory. Key thinkers such as Dahl, Lipset, Easton, Eckstein, Almond and Verba understood that popular support vs. opposition is critical for regime survival vs. termination, and that mass preferences are a selective force in regime evolution for this reason.[29] In this line of thinking, I&W's approach is

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[26] Given emancipative values' inertia, one can estimate these values for a given year with a high degree of certainty if one has a measure from another year, taking into account the time distance between the two years and the cohort differentiation in emancipative values for the observed year. The online appendix (pp. 4–5) details the estimation procedure.

[27] Spaiser and Sumpter 2015; Spaiser et al. 2014.

[28] The evidence is not sensitive to controls. The right-hand diagram in Figure 2 shows this for economic development. But we also controlled for regional diffusion and global linkages, and the pattern remains the same. Moreover, while democratic supplies change in response to their misfit to demands, the reverse is not true: demands hardly change in response to their misfit to supplies. This is evident from the right-hand diagram in Figure 3. Hence, demands drive supplies more than the other way around. Further confirming evidence is available in Welzel (2013, 161–8 and 294–304).

[29] Acemoglu and Robinson 2006; Ansell and Samuels 2014; Boix 2003.

Supplies are strongly driven by their misfit to demands

Change in supply levels from 1980 to 2010 (vertical axis, values 0.90 to -0.60)

Adjusted R sq.: 0.57 (N = 90)

Fit: y=0.12+0.79*x

Misfit of supply levels to demand levels in 1980 (horizontal axis, -0.55 to 0.65)

Demands are hardly driven by their misfit to supplies

Change in demand levels from 1980 to 2010 (vertical axis, values 0.36 to -0.04)

Adjusted R sq.: 0.12 (N = 90)

y=0.11+0.44*x

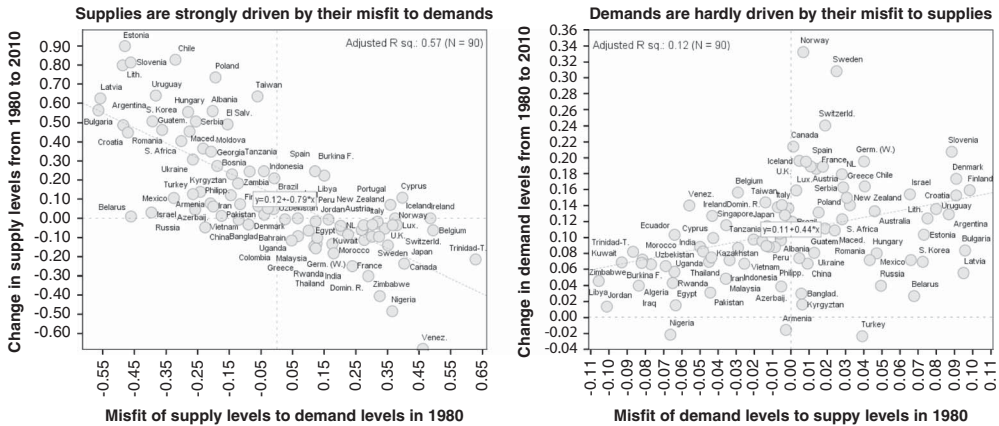**Misfit of demand levels to suppy levels in 1980** (horizontal axis, -0.11 to 0.11)

Figure 3. Real relationship between mass demands for democracy and elite supplies of it (extended country selection).

Demand levels: *Welzel's (2013) index of emancipative values (minimum 0, maximum 1), estimated for 1980 and 2010 using longitudinal regression on the basis of the closest observed data to these years.*

Supply levels: *Welzel's (2013) citizen rights index (minimum 0, maximum 1), combining Freedom House and CIRI data in 1980 and 2010 – the latest and earliest available time points on the citizen rights index.*

Horizontal axis (left-hand diagram): *misfit scores grow negative as supply levels in 1980 fall short of where the demand levels in 1980 suggested they would be; they grow positive as supply levels in 1980 surpass where demand levels in 1980 suggested they would be. Misfit scores center around 0 as supply levels approximate where demand levels suggested they would be. Misfit scores are obtained from regressing the supply levels in 1980 on the demand levels in1980, and saving the residuals.*

Vertical axis (left-hand diagram): *change scores grow negative as supply levels dropped from 1980 to 2010; they grow positive as supply levels jumped from 1980 to 2010. Change scores approximate 0 as supply levels remained stable.*

Horizontal axis (right-hand diagram): *misfit scores grow negative as demand levels in 1980 fall short of where the supply levels in 1980 suggested they would be; they grow positive as demand levels in 1980 surpass where supply levels in 1980 suggested they would be. Misfit scores center around 0 as demand levels approximate where supply levels suggested they would be. Misfit scores are obtained from regressing the demand levels in 1980 on the supply levels in 1980, and saving the residuals.*

Vertical axis (right-hand diagram): *change scores grow negative as demand levels fell from 1980 to 2010; they grow positive as demand levels rose from 1980 to 2010. Change scores approximate 0 as demand levels remained stable.*

unique because it is the only one that actually measures mass preferences. The key conclusion remains: rising emancipative values shift the selective pressures in the evolution of regimes towards democracy.[30] Four complementary findings in *Freedom Rising* underline this conclusion:

(1) The more strongly people emphasize emancipative values, the more their life satisfaction depends on perceived freedom of choice. Hence, emancipative values generate an intrinsic motivation to acquire and defend freedoms.[31]

(2) Because of this, emancipative values motivate non-violent social movement activity. This value–action link exists regardless of the level of democracy, and it is not disrupted by state repression.[32]

(3) Most people say they desire democracy but, in the absence of emancipative values, they fill the word democracy with various meanings, some of which flatly contradict the concept. In contrast, when

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[30] As Welzel (2007, 169) demonstrates, emancipative values affect both losses and gains in democracy: in countries with high levels of democracy, emancipative values prevent losses; in countries with low levels of democracy, they favor gains.

[31] Welzel 2013, 173–90.

[32] Welzel 2013, 215–48.

coupled with emancipative values, people's notions of democracy become unequivocally focused on the freedoms that define it. This 'enlightenment' effect operates irrespectively of whether a country has a long, short or no democratic tradition.[33]

(4) In disjunction from emancipative values, people's overt support for democracy has no explanatory power over the countries' actual levels of democracy; yet in connection with emancipative values, overt democratic support has great explanatory power. Thus one needs to qualify overt democratic support for its rootedness in emancipative values in order to identify the 'true' demand for democracy.[34]

What about D&K's claim that emancipative values are 'endogenous' to democracy?[35] This implies that people only learn values that their society's institutions teach, so people would never learn emancipative values in non-democracies. Evidence from the World Values Surveys suggests a different logic of how emancipative values emerge: people value freedoms when many of them possess the action resources that allow them to use freedoms purposefully, whether the regime supplies them or not. Action resources – which include time, money, skills and technologies – grow for large population segments as a result of economic development. And development is not the exclusive property of democracies; it can also occur in non-democracies. Thus emancipative values also rise under absent democracy, if economic development expands people's action resources. Indeed, the abundance of action resources in a society explains more than 70 per cent of the cross-national variance in emancipative values.[36] Moreover, when one uses country-cohort observations, one sees that people's economic upbringing shapes their emancipative values far more strongly than does their democratic socialization.[37]

Unaware of this evidence, D&K suggest the 'democracy stock index' to measure democratic socialization, expecting a powerful impact on emancipative values. Its impact is indeed significant – until one controls for action resources.[38] When one does so, democracy stock shows no effect on emancipative values, as Figure 4 illustrates. In conclusion, the human desire for freedoms grows wherever expanding action resources elevate populations on the 'utility ladder of freedoms'.

India and China provide a striking illustration. If democratic socialization explained emancipative values, India's sixty years of experience with democracy should have given rise to a high level of emancipative values. By contrast, the absence of democracy in China should suppress these values entirely. If, however, economic conditions explain emancipative values, the fact that both countries are still relatively poor suggests that neither of them should have a high level of emancipative values. If anything, China's higher income level compared to India suggests a somewhat higher level of emancipative values in China. And its steeper growth path suggests larger generational differences in China. Indeed, the Chinese population's emancipative value in 2012 scored 0.37 (compared to 0.32 for India); generational differences in emancipative values in China amount to 0.06 scale points, compared to 0 for India. These figures are incompatible with the idea that emancipative values grow through democratic learning. Again, they suggest that emancipative values evolve in response to improving existential conditions.[39]

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[33] Welzel 2013, 307–34.

[34] Welzel 2013, 276.

[35] To impute missing values in emancipative values, D&K use dozens of democracy-related predictors. Doing so artificially imports endogeneity into emancipative values.

[36] Welzel 2013, 115–17.

[37] Welzel 2013, 165.

[38] Spaiser and Sumpter (2015) also claim that emancipative values are endogenous to democracy. To demonstrate this false claim, they document an effect of prior democracy on subsequent values. But they fail to control this effect for the presence of action resources. Had they done so, they would have discovered that democracy affects emancipative values mostly, if not only, insofar as it is linked with greater action resources.

[39] The German experience, which D&K cite as counterevidence, actually confirms this point. In Weimar Germany, the democratic experiment happened in the context of economic disasters; in post-war Western Germany, it happened in the context of an economic miracle. Accordingly, emancipative values grew strong in the latter but not in the former case (cf. Inglehart and Welzel 2005, 161–2).
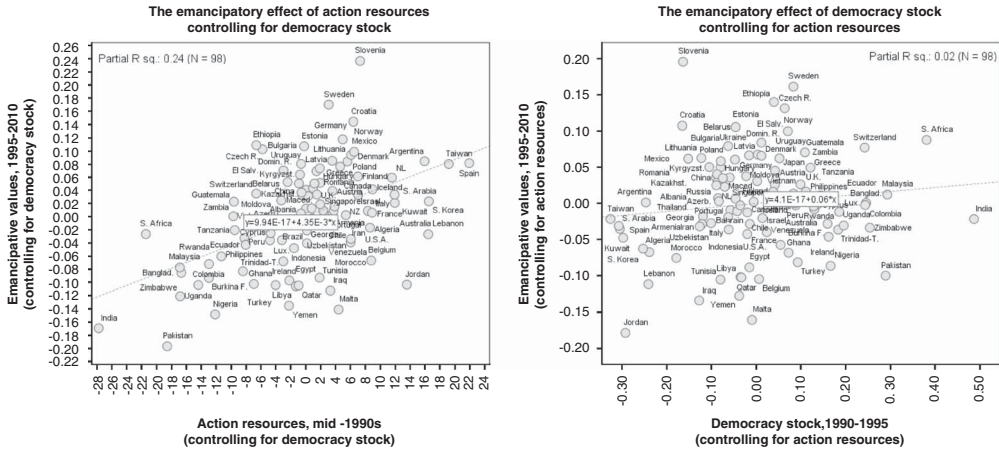
Figure 4. The emancipatory effects of action resources and democracy stock mutually controlled.
Note: partial regression plots obtained from regressing Welzel's (2013) emancipative values at the latest observation year per country on Vanhanen's measure of 'power resources' for the mid-1990s and Gerring et al.'s (2005) 'democracy stock' index for 1900–95.

CONCLUSION

D&K's analysis poses no challenge to the emancipatory theory of democracy.[40] It is nevertheless an important contribution because it illuminates the circumstances under which TSCS models produce erroneous results. If a 1 per cent increase in a society's demand for democracy each year were followed by a 1 per cent increase in its supply the following year, TSCS would be appropriate. But authoritarian elites are not responsive to mass demands in this fashion – until slowly built-up pressure suddenly explodes and initiates a regime change. TSCS is inherently unable to model this type of process, as our simulation demonstrated.[41]

SUPPLEMENTARY MATERIAL

For supplementary material/s referred to in this article, please visit http://dx.doi.org/doi:10.1017/S0007123415000605

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[40] The same holds true for an analysis by Spaiser et al. (2014), who also evaluate I&W's theory using country-year observations.
[41] Replicating D&K's TSCS models with a larger set of countries disconfirms their findings: in most models, emancipative values show a significant effect on subsequent democracy, and the effect is always stronger than the reverse effect of democracy on values. To be sure, this result does not enhance the credibility of the TSCS approach; it simply casts further doubts on D&K's conclusions, as they do not even hold in an already questionable framework.

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