Literature Review		Areas helped by CausalImages / Wealth Maps		Study Guide: In the case of a methodological thesis, it should contain a discussion of other approaches to the research problems that the newly developed method hopes to solve, explaining their advantages and highlighting the shortcomings that the new methodological approach will address			
~~Intro ¶~~	~~Focus is micro-level studies and economic outcomes. Mention metastudies for readers interested in other outcomes and macro-level. Structure of what follows sentence.~~						
Determinates of aid (justification of tabular confounders and need for analytical strategies beyond fixed effects)	~~Influenced by both donor and recipient motives. Donors: contested between economic, political, and ideological/humanitarian motives over time, which vary by sector. Harder for one nation to control multi-lateral donors like WB to achieve their interests, but some studies show US interests influence WB aid.~~						
	Donor political/foreign policy interests: influence social sector definitely country-level decisions (votes in UN, recognition of Taiwan, etc.), which won't cover in detail - control for these with cntry fixed effects						
	Donor economic interests: can influence sub-national placement and project types						
		CH: use overproduced construction materials, loans with excess foreign currency, transport projects (BRI), co-location across sectors for agglomeration effects, natural resource acquisition (					
	Donor ideological/humanitarian motives						
		CH: doesn't interfere with local gov't (allowing political capture) while WB makes aid conditional on governance quality. When both present, WB more flexible on conditions.					
		Sector-specific: emergency aid for humanitarian motives					
		WB econ geography book highlights: for UN SusDevGoals, strategy of providing services in rural areas so people are not pushed out to urban areas but instead are pulled to urban areas by economic opportunities, even though more growth possible investing in agglomeration areas.					
	Pragmatic considerations: travel distance, appropriate conditions for projects of that sector (hydroelectric dams)						
	Recipients: contested between different groups, used by politicians to stay in power. Influences subnational allocation						
Micro-studies on econ impact Intro ¶	Mention inconsistent findings, key challenges, end with structure of what follows sentence.						
Issues in Existing Literature - ?organize based on those helped via new method/outcome measure and those not? **Do I mention the r**							

Data and Aid-related	**Spatial issues (modifiable areal unit problem and more)**	**Spatial issues (aggregation bias)**	**Time issues (aggregation/ simultanaeity / modifiable temporal unit problem)**	**Measurement error / missing data**	**Sector / Analysis issues**	**Analysis Related (Shared considerations):**

Treatments	Fungibility (characteristic of aid, not data). More accountability for more precise projects. Geographic extent of treatment (vary by sector)? Uncertain precision of CH data (excluded country and inprecise). Sample (World, Africa)	heterogenous treatment effects missed when aggregated. Do we still have this issue because we summarize into a single ATE estimate? (Although reduced because doing by sector?)	Delay between commitment and project initiation. Project length vary by sector and unknown for CH. CH projs faster than WB. Sample years. Contested donor motives over time.	binary, count (CH: many low $ projs; few high $ projs), or USD (CH: lacking data/ both: distributing over locations), per capita or not.	distinct sector logic for placement		**Endogenity (x correlated with error: isolating results specific to treatment) / reverse causality**	WB Ivs, Ch Ivs, GMM - year fixed effects to deal with common shocks; IV's interacted with region probability of receiving treatment
Unit of Analysis	Country, ADM1, ADM2, and 55km grids show different results.		NA	NA	having enough degrees of freedom for needed control variables, fixed effects. Not an issue with ML approach		Unobserved heterogeneity	fixed effects for time-invariant factors; sensistivity analyses with FE at different levels
Confounders	data availability to calculate confounders at same level, or inherit from less precise level.		time-invariant: terrain, ethnic group | slowly-changing: travel min to city, leader in power | time-variant: climate (drought), conflict	measurement error in calculation of these confounders. Images help with omitted variables (simultaneous projects in other sectors (CH), aid from other funders, firm decisions, recipient gov't decisions/displacement of their funding)			**Simultaneous endogeneity (aid and wealth bidirectional relationship): handled with 2SLS but difficult to find appropriate instrumental variables**	used nl for pre-proj wealth, lagged wealthmap for post; can access pre-project satellite imagery

Outcomes	Spillovers. Spatial impact can vary by sector (transport projects reduce concentration; rural education result in city jobs decades later). Some used dynamic growth model to account for path dependence / convergence dynamics.		When measure results. Annual, 3yr, 4yr averages. When impact expected varies by sector. Studies generally ignored project end dates.	subnational data hard to come by (gov't lack of cabability), so used nightlights. NL issue (top coded (truncated at brightest areas in cities). "The literature on aid allocation at the country level typically uses average per-capita income as an indicator of need. This measure is rarely available at the regional level." (Öhler and Nunnenkamp, 2014, p. 5)	sector-specific timeframes and goals		**Time-series dependence (include lagged dependent variable on the right side of the equation)**	GMM, IVs with Lags, Dynamic Panel Models
							Complex relationship between aid and outcomes. Non-linearity and interaction effects.	Using ML techniques that can handle non-linearity and interaction effects. Connor: embeddings approach does allow for some non-linearity with the relationship between the image and outcome, but for all the other tabular variables it is linear since it is using a regression.
New Method and Outcome Data								
	Describe CausalImages and the WealthMap and how they resolve some of the issues above (or integrate into above?)							
Issues that CausalImages/WealthMaps don't resolve are still relevant because they are ongoing issues in my analysis, but may not deserve a lot of space.								
Not planning to develop a hypothesis - since methodological								
Research question is in title:								
	China and the World Bank: using machine learning and daytime satellite imagery to identify how they select African communities for aid and to estimate that aid's effect on wealth							
Should I keep the part highlighted in red?								
	Using machine learning and daytime satellite imagery to estimate aid's effect on wealth: comparing China and World Bank programs							