**Calculating Critique: Thinking Outside the Methods Matching Game**

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What tools of research, what methods, are available to scholars of global politics working in different theoretical and epistemological traditions? While this question has been asked over and over, we argue that the standard answers from within the disciplinary tradition of International Relations (IR) tend to offer a limited range of methodological possibilities, and an even more limited palate of methods, to go with any given research program. For example, it is often assumed that quantitative models are the best method for neopositivist causal analysis. Critical feminist theory, on the other hand, is often understood to benefit most from methods like ethnography and discourse analysis. These traditional associations, however, confuse method with methodology, and homologize epistemology and research design.

More than twenty years ago Gary King, Robert Keohane, and Sidney Verba (henceforth KKV) saw this pattern of association, and suggested that the difference between qualitative and quantitative research in political science is not the *logic behind* the research, but the tools used to serve the ends of the research goals.[[1]](#footnote-1) The best principles of the definition and function of what research is and how it works, they argued, apply to all research. Therefore, their book focuses on translating the best principles of quantitative research in political science to a template for how to do qualitative research as well.[[2]](#footnote-2) In explaining this move, KKV contend that “all good research can be understood – indeed, is best understood – to derive from the same underlying logic of inference.”[[3]](#footnote-3) In other words, they argue for using a range of methods, but only in the context of inferential, hypothesis-testing methodologies and neopositivst epistemologies.

Our claim here is, in a way, the opposite of KKV’s. Whereas they argue that multiple methods can only legitimately be used when disciplined by neopositivism, we argue that methods can be used across epistemologies, when methods are matched to epistemologically-appropriate methodologies. KKV are right that the logic behind research is not *necessarily* different for qualitative and quantitative research. Patrick Thaddeus Jackson characterizes the “’quantitative’/’qualitative’ divide” as “a distinction without a difference – a distinction of *method* without a difference in methodology”[[4]](#footnote-4) where “it is basically all neopositivist in approach.”[[5]](#footnote-5) With Jackson, we are with KKV this far: most research in IR, quantitative and qualitative, is neopositivist in logic, such that the quantitative/qualitative distinction is just about the tools.

Where we, with Jackson, break from KKV is the argument that *all* good researchderives from the same (neopositivist) logic. We contend that different logics of research, including the postpositivist logics that most critical theories, among others, draw on, can *all* constitute good IR research. Those who agree with us on this point, however, have often limited their exploration of the appropriate methods for non-neopositivist research to various methods normally classified together as qualitative.[[6]](#footnote-6) We argue that the logics of non-neopositivist researchare not tied to qualitative methods. Rather, a wide variety of both qualitative and quantitative methods are not only available as tools for critical IR research, but can be useful to further the ends of critical research programs *on their own terms.* Quantitative methods are *not*, generally or for the purposes of IR inquiry, necessarily neopositivist in their disposition or utility, and can be used to explore a wide variety of constitutive, performative, and relational questions about how global politics works.

Accordingly, this article suggests to scholars trained in quantitative methodsthat the tools that they use (and often others they do not) are more broadly applicable across epistemologies than is often assumed in IR; to critical researchersthat there are many more tools available to their analysis than are traditionally understood to be appropriate; and to the IR discipline writ large that much of the disciplinary thinking about the relationships between research, ontology, epistemology, methodology, and methods is unnecessarily narrow. Particularly, the binaries often used to construct ‘research design’ in IR are logically unsustainable, and the traditions they support therefore need to be reevaluated. Scholars should be drawing on a much broader palate of methodological possibilities in research designs than most currently do. Methods are tools that can be used for a variety of tasks. Therefore, answers to the questions about available methods at the outset of this article are much broader than they are often assumed to be by scholars on both ‘sides’ of the quantitative/qualitative divide in IR. To illustrate this argument, we offer the opposite of KKV – quantitative methods for non-neopositivist epistemologies. More specifically, we focus on a set of methodological combinations that is particularly underutilized in the discipline, the use of quantitative, formal, and computational methods in critical IR research programs.

Our core goal is to reveal the problematically inaccurate nature of mapping the qualitative/quantitative onto positivist/post-positivist divide, and by extension, the traditional ways IR scholars train students in, and practice, methods. We suggest that the ability to pair, and the utility of pairing, quantitative (traditionally neopositivist) methods with critical (traditionally, and arguably inherently, non-neopositivist) theorizing makes this intervention. From this, three potential innovations arise: the understanding that quantitative methods can be used to address non-neopositivist questions in non-neopositivist ways; the potential that the use of these quantitative methods can *strengthen* critical IR; and the argument that those realizations require re-mapping traditional assumptions about epistemology and method in IR research. To demonstrate the point, we begin this article with discussions of the relationships between epistemology and method as well as inference and method in IR research. We continue on to frame a *disunity* of social science in the quantitative/qualitative divides, which lays the groundwork for a section in which we propose a rethinking of the discipline’s traditional understandings of the relationships among methods, methodology, and epistemology. The article then continues to make the theoretical case, with interspersed examples, of the utility of methods traditionally classified as ‘quantitative’ for critical research in IR. It concludes by discussing the transformative implications of this understanding for critical theorizing, and for theorizing knowledge within disciplinary IR.

**Epistemology and Method**

We define ‘IR research’ broadly as empirical analysis, theory-building, theory-testing, concept exploration, and other work seeking knowledge (broadly conceived) about the normative dimensions, constitution, working, and/or functions of global politics. By ‘method’ we mean specific techniques and processes for gathering and/or analyzing information. For example, membership categorization device analysis (a form of critical discourse analysis) is a method,[[7]](#footnote-7) as is a Cox proportional-hazard regression model.[[8]](#footnote-8) As distinct from ‘method,’ ‘methodology’ is the strategy by which methods are selected, given particular research questions. Particularly, by ‘methodology’ we mean the way in which scholars think about the relationship between methods and research design. Discussions of methodology that have classified methodologies in broad-based categories like “quantitative” and “qualitative,” have, we argue, done so incorrectly.[[9]](#footnote-9) Other discussions have characterized methodology as the narrator of the processes of search and research.[[10]](#footnote-10) This latter understanding more closely represents the one we deploy – methodology is the analysis of what methods are chosen and why, given certain assumptions.

Using this understanding of ‘methodology,’ our argument is fundamentally methodological. Discussion of methodology in the discipline has too often been limited by both directional and utility assumptions that apply the quantitative/qualitative divide to the selection of methods. The mistaken assumption that there are “qualitative” and “quantitative” *methodologies*, built on the mistaken assumption of the epistemological unity of the category of “quantitative” methods, has reverberated across the field. It has produced an oversimplified mapping of the methods relevant to critical research in IR.

Discussions of different ways of doing social science research tend to happen either at the level of epistemology or at the level of method. Particularly, scholars often assume that it is appropriate first to determine the epistemological commitments of their work, and then match the appropriate method or methods to those epistemological commitments. For example, scholars who approach research from a feminist perspective often locate their epistemological understanding of the discipline in the grouping broadly identified as “post-positivist,” understanding knowledge as perspectival and scholarship as political.[[11]](#footnote-11) Many scholars derive from those epistemological commitments, then, that the appropriate methods of feminist scholarship should be things like ethnography, discourse and dispositive analysis, searching for silences, and other tools.[[12]](#footnote-12) On the other hand, scholars interested in the relationship between institutional design and institutional efficiency often express epistemological commitments to causal and predictive analysis.[[13]](#footnote-13) Many scholars derive from those epistemological commitments that the appropriate methods for their work include predictive formal models and large-*n* regression analysis of empirical observations.[[14]](#footnote-14) Even arguments purporting to broaden the discipline’s use of method often begin by assuming a narrow epistemological perspective.[[15]](#footnote-15)

We propose that it is fruitful to look at this conversation from the other direction.  IR scholars, whatever their epistemological convictions, tend to receive their primary research training in methods already deemed appropriate for their particular epistemological perspectives. ‘Postivists’ focus on mastering quantitative methods of various stripes, supplemented by the occasional hypothesis-testing case study.[[16]](#footnote-16) ‘Post-positivists’ focus on learning a class of methods often understood as ‘interpretive,’[[17]](#footnote-17) which share perspectival and experience-near orientations.[[18]](#footnote-18) We are, instead, interested in thinking about what our research outputs specifically and the discipline generally would look like if scholars critically interrogated the directional relationship between method and epistemology – something we think rarely happens in individual research and has not yet happened in a disciplinary context.

In building this inquiry, we are not interested in contributing to or feeding a trend of “method-driven” research (where scholars emphasize technique and apply it to substance rather than seeking appropriate tools to evaluate substantive questions).[[19]](#footnote-19) We do, however, think there is something to be gained from thought experiments that start with the potential of a “tool” rather than assuming that the conventional use of a particular tools limits its overall utility. Such an approach has profound implications for the presumed ‘unity’ of ‘science’ discussed in most methods texts, quantitative and qualitative, in IR specifically and the social sciences generally.[[20]](#footnote-20) The foundation for this argument is in exploring the relationship between inference and method in the field.

**Inference and Method**

To continue with the discussion of KKV begun in the introduction, the authors suggest that both quantitative and qualitative methods can be used to do the ‘best’ IR research – ‘scientific’ research following the rules of inference developed in statistics.[[21]](#footnote-21) Like so many of the terms political scientists use in the discussion of method, methodology, and epistemology, however, ‘inference’ can be understood in a variety of ways. At its core, inference is learning about something from observing something else. Understood broadly enough, this definition covers most of what scholars might do across the social sciences and humanities. Poststructuralist discourse analysis, for example, infers meaning from text, which is interpretable in various ways. This work is, broadly speaking, ‘inference,’ if not either descriptive or causal in KKV’s terms.[[22]](#footnote-22)

But KKV use the concept of inference in a more narrow, and more statistical, way. They speak of inference from empirical observations, which in turn they treat unproblematically as ‘facts.’ This epistemological approach draws on the supposition that “valid knowledge must in the end be related to some sort of accurate correspondence between empirical and theoretical propositions on the one hand and the actual character of a mind-independent world on the other.”[[23]](#footnote-23) We disagree with all of these assumptions, taking a more relativist position,[[24]](#footnote-24) but focus on the homologization of ‘quantitative methods’ and ‘social science research’ discussed herein for parsimony’s sake.

To the extent that social science research happens within a neopositivist epistemology, much of KKV’s advice about research design is both logically sound and internally consistent. We do not take issue with the book’s guidance on how to go about making inferential claims from empirical evidence, but instead we do take issue with KKV’s *ex ante* assumption that the sort of inference they provide rules for defines and delimits what counts as science, and that ‘science’ in any form is the ultimate goal of *all* IR research (and therefore the standard for judgment of the utility of method). In other words, while KKV are arguing for the *unity* of science, we are arguing for its *disunity*, both in terms of forms of knowledge (discussed in this section), and in terms of the uses of methods through methodologies (discussed in the next section).

There are a number of arguments to be found in the philosophy of science suggesting that the enterprise cannot be understood as the simple accumulation of empirical facts.[[25]](#footnote-25) This line of argumentation suggests that KKV’s assumptions about science and method do not define the limits of possibility in scientific research, whether natural or social. But social inquiry is also different in kind from natural science, in a way that places further demands on methodology than those to be found in the natural sciences. Social inquiry is recursive, meaning that theory not only organizes observations about the object of study, but actually changes that object. This is a crucial insight that underlies all critical and postmodern approaches to international relations specifically, and social inquiry more broadly. Social theory, whether empirical or normative, changes not only the knowledge base of the objects of study, but also the normative and discursive contexts within which the objects of study interact. Social theory is, in this sense, inherently political.

Texts on epistemology, methodology, and method in critical theorizing in IR often highlight this notion that theory is political, but draw from it the implication that method must be interpretive, and therefore qualitative.[[26]](#footnote-26) As Lene Hansen explains, “the modernist belief in our ability to rationally perceive and theorize the world is in poststructuralism replaced by dis-belief in unproblematic notions of modernity, enlightenment, truth, science, and reason.”[[27]](#footnote-27) This leads, in Hansen’s words (citing Jef Huysmans), to scholarship by genealogy, which “does not look for a continuous history, but for discontinuity and forgotten meanings; it does not look for an origin, indeed, it is assumed one cannot be found; and it does not, finally, focus on the ‘object of genealogy’ itself, but on the conditions, discourses, and interpretations surrounding it.”[[28]](#footnote-28) This look at the conditions, discourses, and interpretations surrounding the object is necessarily both *perspectival* and political, and incorporated into the methodological outlooks of poststructuralist research.

So too in feminist research. As Brooke Ackerly, Maria Stern, and Jacqui True have argued, “feminist IR scholars have developed not just a toolkit of methods but ways of incorporating ontological and epistemological reflections into methodological choices that lead them to rethink the boundaries of the IR discipline.”[[29]](#footnote-29) The key to this critical reflection, in the authors’ understanding, is “reflexivity, which encourages the researcher to re-interrogate critically his/her own scholarship.”[[30]](#footnote-30)

Across work on self-described post-positivist methodology, it is generally either explicitly stated[[31]](#footnote-31) or implied[[32]](#footnote-32) that induction, interpretation, dialectical understandings, and perspectival knowledge are obtainable through and only through the use of methods generally understood to be qualitative. While some dissenting voices exist,[[33]](#footnote-33) texts on methodologies for reflective, post-postivist, or interpretive inquiry seem to match post-positivist epistemology with interpretive methodology and qualitative methods. While post-positivist epistemology and interpretive methodology *do* go together, we argue that it does not necessarily follow that the two map clearly onto qualitative methods, especially to the exclusion of methods traditionally understood as quantitative.

We, then, want to take two steps. First, we want to reframe the terrain of KKV, rethinking the relationships among method, methodology, and research design in a much broader epistemological and ontological setting. Where KKV provide the rules to make various methods conform to a specific narrow epistemology of social science, we suggest ways in which specific methods can conform with the methodological demands of a broader array of epistemologies. Second, we want to cover the same terrain as many of KKV’s non-positivist competitors and critics - broad thinking about the ways in which intersubjective, interpretive, perspectival knowledge can be produced, shared, and brought to bear on the questions of contemporary global politics - but to locate that terrain *across*, rather than tied to, particular research methods. Where those post-positivist methodologists provide suggestions on how to add tools that are better suited to the particular ontological predispositions of post-positivist research to the traditional arsenal of IR scholars, we suggest ways in which that orientation overlooks some of the traditional tools of IR that might be fruitfully leveraged towards those same ends. We choose quantitative methods and critical theory. In so doing, we do not intend to make the claim that these methods or theoretical approaches should predominate in the study global politics, or to argue that they have particular affinities for each other greater than their affinities with other methods and theories. Rather, we choose them as sets of theories and methods that are not often combined elsewhere, and that therefore serve well to illustrate our broader claim that methodological possibilities in the study of international relations are broader than what is often taught in the field.

**The Disunity of Science (or The Problem with the Quantitative/Qualitative Divide)**

KKV argue that “the logic of good qualitative and good quantitative research designs do not fundamentally differ,”[[34]](#footnote-34) which suggests the application of “a unified logic of inference to both”[[35]](#footnote-35) because “the differences between the quantitative and qualitative traditions are only stylistic and methodologically and substantively unimportant.”[[36]](#footnote-36) This interpretation is shared by some of KKV’s sharpest critics. For example, Henry Brady and David Collier (with Jason Seawright) make clear that their criticisms “do not amount to a rejection of the basic enterprise of striving for a shared vocabulary and framework for both quantitative and qualitative research”.[[37]](#footnote-37) Indeed, they “share KKV’s (4-5) view that quantitative and qualitative methods are focused on similar epistemologies.”[[38]](#footnote-38) Brady and Collier’s major contribution to the conversation is to make the argument that, while KKV is based on the “quantitative template,” there is value in looking at a “qualitative template” for both quantitative and qualitative methodology.

Both of these approaches make the mistake of conflating methods and epistemologies, understanding ‘quantitative’ and ‘qualitative’ templates where no such thing exists. They assume that IR’s epistemological templates are defined by whether scholars use quantitative or qualitative methods to seek knowledge, rather than by understandings of what knowledge is and how it maps onto the properties of global politics. Instead, as we mentioned above, we contend that there is no *fundamental* divide methodologically or epistemologically between the group of methods broadly understood as ‘qualitative’ and the group of methods broadly understood as ‘quantitative.’ Because the categories are empty of unique meaning, we believe that “the reification of qualitative methods as a category not only helps to cement existing in-group/out-group dynamics within the discipline, it also creates tension within the out-group. It does this by defining the boundaries of the out-group.”[[39]](#footnote-39) Therefore, we see the use of the categories *quantitative* and *qualitative* to describe *types of research* in political science as intellectually incorrect, politically fraught, research-limiting, and pedagogically counterproductive.[[40]](#footnote-40)

Instead, if KKV and Brady and Collier argue for a fundamental *unity* of political science inquiry, we argue for its *disunity*. Instead of relying on quantitative or qualitative templates, or a notion of positivist or post-positivist *methods*, we argue that IR scholars should be taking a much more nuanced approach that maps the actual capabilities of methods more closely onto the diverse ontologies and epistemologies that IR scholars bring to the table. It is on this basis that we contend that the discipline has been looking at the relationships among epistemology, methodology, and method in a fundamentally problematic way. We suggest that correcting this problem both leads to new insights for the application of the philosophy of science in IR and improves the field’s substantive research.[[41]](#footnote-41)

**Methods, Methodology, and Theory**

As we have already noted, the field of IR often pairs particular methods with particular questions. We, obviously, argue against such strict associations.  It would be tempting to make the counter-claim, in support of a argument like this one, that method is theory-neutral, that one can mix and match at will to suit the needs of individual research questions.  But this is not quite right either. Instead, in arguing for the disunity of science, we look to undermine the assumption that particular methods and particular epistemologies and/or research approaches neatly map one-to-one. With that assumption, we are also looking to undermine what Patrick Thaddeus Jackson describes as the disciplinary function of science, where a traditional notion of what science is plays a gatekeeping role in the discipline.[[42]](#footnote-42) Recognizing what he describes as a *demarcation problem,* “the quest for a set of criteria that can adequately demarcate science from non-science,” Jackson argues that the discipline maps particular methods to particular perspectives *sociologically* rather than *on the merits*.[[43]](#footnote-43) We suggest that choosing methods *on the merits* can be a path to leave the (counterproductive) disciplinary methods matching game behind.

On the merits, certain methods do bring with them particular methodological uses that are relevant to the form of theorizing.  Statistical methods look for general patterns, often at the expense of the individual exception.  They provide information about what tends to happen, rather than what can happen or what happens at the extremes. While the tendencies that statistics shows can be analyzed causally or constitutitively, statistical methods will be more useful to scholars methodologically interested in tendency than those scholars who ask questions to which tendency is irrelevant or tangential. Agent-driven models, whether rational choice or agent-based, simplify to suggest general relationships given sets of prior conditions, rather than focusing on the complexity of particular events or circumstances.  Again, they provide information about what tends to happen rather than what is happening in a particular situation.  Participant-observation, conversely, builds rich detail on particular institutions rather than comparative data across institutions.

Still, even these traditional leanings of the methods can be capitalized on for different purposes. Qualitative methods are often necessary to generate the information necessary for quantification. Statistics, meanwhile, can play a useful role in generating the empirical basis for theoretical arguments, whether those arguments themselves are neopositivist or not.  Statistical analysis can also function to address usefulness in a Weberian sense, by helping to constitute the relationship (rather than the identity) between theory and observation. Similarly, agent-driven modeling can be a useful technique for exploring the internal logics of theoretical arguments.  Formalizing a model can in some circumstances be a useful way of looking at its internal logic, to find out if its assumptions lead to its conclusions in a certain kind of tightly controlled setting.  In these terms, within the category of generalized theory, the utility of quantitative modeling should be neither assumed nor rejected out of hand – the utility depends on the specific theory in question, and the specific deployment of the method.

It is for this reason that we look to specify the relationship among ontologies, epistemologies, methodologies, and methods. Traditionally, the discipline has (consciously or unconsciously) treated these relationships as something like this:

Ontology --> Epistemology --> Methodology --> Method,

where the most popular combination in IR is an ontology of mind-world dualism, which inspires and is co-constitutive with epistemological phenomenalism, producing neopositivist methodologies – which then use both quantitative and qualitative methods to produce (positivist, objective, inferential) knowledge. A less popular, but still assumed, relationship is between an ontology of mind-world monism, which inspires and is co-constituted with epistemological transfactualism, producing reflexivist methodologies – which then use qualitative, interpretive methods to produce (intersubjective, relational) knowledge.[[44]](#footnote-44)

Jackson suggests that the prioritization of ontology in this organization is at best problematic and at worse insincere.[[45]](#footnote-45) Citing Colin Wight’s claim that “methodologies are always, or at least should be, ontologically specific,”[[46]](#footnote-46) Jackson argues that there is an internal contradiction between the idea that ontology comes first and the idea that ontological claims need warrants. For those reasons, he does “not think that putting ontology first is the panacea that many seem to think it is.”[[47]](#footnote-47) We argue that putting ontology first contains both the mistake of *ordering* that Jackson identifies and a further mistake of demarcation. That is why we argue that both of the ideal-types outlined above are fundamentally limited, and that those limits come from the assumption of certain specific and necessary relationships among ontology, epistemology, methodology, and method.

Instead, we suggest that methods are useful for multiple methodologies, and therefore for multiple epistemologies, and even multiple ontologies, as well as multiple strands of IR research. This suggestion is not so radical when we think about “qualitative” methodologies (structural realists like a good case study almost as much as critical theorists, though they are looking for different things in that case study), but seems radical when we talk about quantitative methodologies being paired with post-positivist epistemologies. We suggest that a regression, a mathematical model, or a computational model, like a good case study, can be wielded across theoretical approaches, across epistemologies, and even across ontologies.

We argue that, rather than the progression above, it is possible to see the spectrum of the production of knowledge in the discipline this way:

Ontology <--> Epistemology <--> Methodology <--> Method.

Several important properties distinguish this understanding of these relationships from traditional ways of thinking about knowledge in disciplinary IR research: 1) the co-constitution of ontology and method; 2) the compatibility of not only multiple methods, but multiple method-epistemology-ontology pairings; 3) the possibility of multi-epistemological research; and 4) (most importantly for this work) the freedom of methods from the constraints of particular methodologies, epistemologies, and ontologies. This, in the words of Jill Steans, pushes “existing boundaries of both what we claim to be relevant in international politics and what we assume to be legitimate ways of constructing knowledge about the world” even for critical theorists who think they are already pushing those boundaries*.*[[48]](#footnote-48)It is from that perspective that we suggest that quantitative/formal/computational methods are not only compatible with but situationally valuable for critical research in IR.

Of course, quantitative methods *as they are used in neopositivist methodologies of theory-testing*, as tools of KKV’s epistemology of inference, are (arguably) incompatible with critical theory. But this is a question of the use of the methods, not the methods themselves. A regression analysis itself, for example, is neither logically positivist nor philosophically realist; the results of the analysis can be read either way. Similarly, the results of a regression analysis can be read equally well through a Cartesian or Foucaultian lens – the analysis points to a relationship within a set of numbers, not to the objectivity or politics of the numbers as data. The tool itself should not bias either the epistemological or ontological starting point of the scholar.

Though we use a potential pairing of quantitative methods in critical IR as an example below, this argument has implications beyond that potential pairing. It also suggests that not only the quantitative/qualitative divide, but also many of the other binaries that we use to think about research design in IR – explaining/understanding,[[49]](#footnote-49) inferential/explanatory, positivist/critical, hypothesis-testing/analysis – are all ultimately unsupportable oversimplifications that we deploy as signifiers of positionality along the ontology --> method spectrum rather than defensible categories of philosophical ontology. Lost in those binaries is not only the utility of the methods presumptively matched with one side or the other, but the possible payoffs of revising traditional paths *from ontology to method* into multidimensional journeys. We revisit these potential payoffs in the conclusion to this article.

**Quantitative Methods**

It is in that spirit that we 0ffer as an example some ways in which quantitative methods can be useful for the methodologies, epistemologies, and inquiries with which critical IR is usually engaged. We define “quantitative methods” here loosely as methods for or appropriated by social sciences (particularly, here, IR) that involve numbers and/or mathematical notation, following a common social practice in the use of the term in our discipline and others.  In other words, we do not focus primarily on or limit our claim to statistical approaches, but instead include statistical, mathematical, and computational tools that use numerical or mathematical notation. The two categories of methods most frequently used in IR that fit into this category are statistical models and formal rational choice models, but the category also includes a variety of other methods, from agent-based modeling to computational sequencing to network analysis.  These methods have in common that they use numbers and expressions[[50]](#footnote-50) to represent the political world, rather than (or, potentially, as) narratives.[[51]](#footnote-51)

What else do these methods have in common, in a methodological and epistemological sense?  We argue that, while they are often assumed to share a positivist epistemological approach and a methodology that forefronts scientific precision, these methods actually share very little, if anything, methodologically or epistemologically. That is, we argue that ‘quantitative’ methods are *not inherently* positivist or ‘scientific,’ and need not be deployed only in service of producing neopositivist hypothesis testing. Uses that contravene these traditional assumptions are, normatively and practically, compatible with such methods.

In fact, quantitative methods defined broadly, as we have done here, can fall at different point along a variety of methodological and epistemological spectra.  Methodologically, they are designed to do quite different things.  While statistical modeling as a method can be used to test existing theory and to analyze data within the context of theory, it does not (or at least should not) play any direct role in theory-creation.  While it can serve both causal and constitutive ends, statistical work must be deployed with particular theoretical assumptions in mind – it is the theory, not the method, which suggests which variables should be compared, as well as the utility of particular forms of regression, time-lags, variable operationalizations, and other tools. Game-theoretic rational choice modeling, on the other hand, is primarily a mechanism for theory-generation.  Models are built to generate potential outcomes, and to help scholars understand how outcomes might be produced. The two can work in tandem, but there is no epistemological or methodological reason to privilege statistical models in the testing of formal ones (or, for that matter, to test formal ones in a neopositive sense at all), or to use formal ones to generate theory for statistical ones. That practice is a social convention of disciplinary practice in IR (and many other social sciences) that we argue limits the application of both statistical and formal models compared to their potential uses in IR research. We contend, instead, that statistical techniques can be used to analyze any data that come in numerical form, whatever purpose that analysis serves.  The purpose may be simple description, or it may be theory-testing, but its utility in engagement with theory is determined by data availability and statistical technique, not by the source of the theory.

Meanwhile, social scientific theory generated by formal modeling is an odd fit for inferential testing, whether statistical or otherwise.[[52]](#footnote-52)  A statistical model does not test whether or not a particular formal model is an accurate representation of political activity.  Instead, statistical analyses of formal models can provide information about which models generate more accurate predictions (within a particular epistemological framework, at least), but they cannot tell us why, because all formal rational choice models begin with the same basic sets of assumptions. In this understanding, formal modeling that pretends to be neopositivist is simply epistemologically confused.  This does not mean that statistical techniques should never be applied to formal models.  But it does mean two things.  The first is that such applications should be better informed epistemologically than is currently the case, to specify what the application is intended to accomplish.  The second supports the original point of this section, that there is no particularly privileged relationship between the two. In other words, these different ‘quantitative’ methods have very different applicability that does not map one-to-one to any particular research end.

More broadly, the philosophy of math does not suggest that quantitative methods’ primary utility is for neopositivist (social or other) science.[[53]](#footnote-53) Instead, the crux of mathematics is the representation of complex relationships – including discrete ones (arithmetic), but also continuous ones (geometry), immeasurable ones (symbolic logic), and non-existent ones (formalism). These representations of how things are related represent quantity, but also structure, space, stochasticity, relationality, and formalization for its own sake. Mathematical formalists and mathematical constructivists see mathematical inquiry as subjective, perspectival, and relational rather than objective, countable, and independent.[[54]](#footnote-54) We argue that the oversimplification of the utility of quantitative methods in IR mimics an oversimplification of the philosophy of science and the philosophy of mathematics in the discipline. The assumption that quantitative methods are (and are only) statistical analyses and (related) formal rational choice models represents *a small part* of quantitative methods as the totality of techniques available, and in so doing skews the methodological, epistemological, and ontological applicability of those methods in the discipline. Contrary to these narrow readings of quantitative methods, we argue that ‘quantitative’ methods have little in common methodologically other than the possibility of numerical expression. Below, we argue that numerical expression (broadly defined and deployed) can be not only be compatible with but of use to critical IR.

**Quantitative Methods for Critical IR**

We see critical theory as an ontological position about the relationships between knower and known, theory and practice. We do not offer an exclusive definition that specifies the boundaries of what counts as critical, and what does not. We see it as a general approach to the study of global politics, and as self-defined research community. Much of that self-identification is built on the sort of questions that the research explores: how, how-possible, and what-is questions rather than fixating on traditional why questions. We suggest that, to the extent that these distinctions can be made, quantitative methods are usually deployed in service of ‘why’ questions, and seen as irrelevant to how, how-possible, and what-is questions. We argue instead that quantitative methods (especially those that can capture complexity, anexactness, contestation, and dialogue) can be useful for, and well-suited to, the sorts of questions critical IR often engages.

This utility, however, often goes unexplored because critical approaches to IR research have generally paired a rejection of quantitative, formal, and computational methods along with their rejection of the hegemony of traditional, singular notions of science that those who use quantitative methods usually espouse. Therefore there is in critical theory in IR an underexploration of, and potential underutilization of, quantitative/formal/computational methods in service of its epistemological/theoretical/political ends. We argue that the employment, and deployment, of these methods are useful to different epistemological/theoretical/political perspectives in different ways and for different reasons.

Framed in these terms, there are a number of different ways that ‘quantitative methods’ can fit ‘interpretive methodology’ and therefore critical IR, and be helpful in achieving the ends critical scholars have set for their research. Not all methods, of course, are appropriate for all forms of critical IR inquiry, but the current scope of methods understood to be applicable is overly narrow. Quantification itself can be useful for critical IR.Sometimes, there is quantification (or a claim on quantification) in our critical work even when we do not see it. For example, when Cynthia Enloe asks “where are the women,” she is in part making a feminist claim on quantitative methods.[[55]](#footnote-55)  Any question involving ‘how many’ or ‘how often,’ and many questions involving ‘under what circumstances,’ might usefully draw on statistical analysis, both for theory construction and theory analysis.  Such analysis can be applied to the sorts of things that neopositivists often look at, like money, but can also be applied to norms, expressed either as behaviors or as opinions, and to discourses, expressed either as measures of frequency or of pattern. There are a number of situations in which claims to quantification in critical IR research can usefully be translated into actual quantification, leveraged for a variety of different knowledge ends. Statistics can provide information about relationships, degrees of correlation, and even co-constitution - data analysis is not tied to positivist epistemologyor objectivist ontology. Brooke Ackerly’s work on critical human rights, Shirin Rai’s work on economic depletion, and (citation to author removed)’s work on intentional civilian victimization all make quantified claims about existence, co-constitution, relative deprivation, and normative flaws in the current workings of global politics.[[56]](#footnote-56) Those questions are not the only ones critical IR might be interested in for which statistical quantification might be useful. How are indicators of cultural intimacy related to the reproduction of identities?[[57]](#footnote-57) Which metaphors are used most frequently in framing foreign policy, and to what outcomes are they related?[[58]](#footnote-58) Are there common elements in peoples’ descriptions of their experiences of war, and do some common experiences cluster?[[59]](#footnote-59) All of these questions inquire into relationships of constitution or co-variance which might be usefully quantified, even when the research in question is not working toward the ends of neopositivist epistemologies or ontologies. While not all how, how-possible, and what-is questions would benefit from statistical information about the constitution of phenomena in global politics, many could.

But it is not only statistical analysis that can be used to further the ends of critical IR research. Behavioral modeling can be useful in identifying the ramifications of behavioral assumptions in critical theories, when these are used to construct explanatory models (and they must have behavioral assumptions, whether stated explicitly or not).  It can also be used as a means of communication between critical and rationalist theory – to the extent that critical theorists discuss structural power, they often assume kinds of individual behavioral responses that are not in themselves incompatible with the assumptions made by soft rational choice theorists.  Gaming a critical argument, in other words, can be an effective way of explaining to a formal theorists how structural power matters. For example, (Citation to author removed)’s constructed game of economic sanctions bargaining which accounts for ontological security suggests different outcomes than traditional bargaining games in a way that can provide information for theory construction.[[60]](#footnote-60)  (Citation to author removed)’s work on the heuristic uses of formal models suggests an exploratory dimension to modeling that might allow critical theory to address alternative political frameworks.[[61]](#footnote-61) David Sylvan’s work on ‘hi-tech hermeneutics’ suggests that there is utility in modeling discourse sequences to understand constitutive interactions, and Hayward Alker’s formalization of political claims reveals normative content and transformative potential.[[62]](#footnote-62) More broadly, behavioral modeling, whether based on rational choice assumptions or computational gaming, is a useful mechanism for thought experiments, and these thought experiments can be applied both to explanatory and to interpretive theories of international politics. How do the discursive structures of gender/security that conflate masculinities and warfare form?[[63]](#footnote-63) What figurations of critique in IR theorizing could build sustainable critiques of foreign policy, for example, in Israel-Palestine?[[64]](#footnote-64) What possibilities exist for actors choosing human security in a statist world?[[65]](#footnote-65) All of these questions are ones for which formal methods might be used to explore alternative futures, understand variable relationships of co-constitution, signification, and performativity, and critically theorize conflict dynamics.

Formal modeling is just the tip of the iceberg of quantitative methods, defined broadly, that could be useful to critical IR research. There are in fact a variety of statistical, formal, and computational methods not generally used in IR scholarship at all that might be useful for inquiry based in critical ontologies and critical epistemologies (broadly defined). Comparing the logics of theoretical mathematics to the logics of critical research shows several commonalities. Particularly, thinking of mathematics as axioms with rules of inference reveals it as a representational tool in addition to (or even in the alternative to) a tool of objective analysis. As we mentioned above, much of mathematics explicitly addresses how, how-possible, and what-is questions rather than causal questions, and can be leveraged to address these sort of questions in social inquiry. In this view, knowledge about global politics is complex, contested, dialectical, and anexact. If critical IR rejects the objective and the linear, and with them, their dichotomized frames of reference, some quantitative methods can be seen as tools to represent non-linear and contingent relationships. In math theory, there is no necessary “truth” or underlying “there” there underneath the quantification. The quantifications are representations from which we learn about relationships -homologies, homeomorphisms, maps, dimensionality, commutativity, factorization. Mathematics is, frequently, not positivist science, but representation of complex relationships. If critical IR looks to unmask and deconstruct hidden meanings embedded in the (dangerous) restrictions of contemporary politics and political analysis, quantitative analysis has tools to explore embeddedness Theoretical geometry, for example, may be useful to critical IR when scholars do not have the words to represent the complexities of global politics – it could give them the manifolds, the topologies, the systems of equations, and the mathematical significations. Critical IR’s combination of hermeneutic interpretivism and deconstructive curiousity can be represented geometrically, as can undecidability and liminality. Through geometric representations, it may be possible to see the complexity, contingency, interaction, and uncertainty of global politics using mathematics’ processes and products. Geometric methods, then, can be deployed for critical research questions. How can territorial conflicts be mapped unto ethnic conflicts?[[66]](#footnote-66) How many layers of Western imperialism can be found in global politics, and what are their contours?[[67]](#footnote-67) These questions could be appropriately engaged geometrically, in addition to using the traditionally ‘qualitative’ methods that are often used to address them.

**Conclusion**

It is on the basis of these arguments and (brief) examples that we contend that ‘quantitative’ tools can not only be seen as potentially appropriately deployed for critical inquiry in IR, but may even be most at home in that sort of inquiry. In the broader context of IR inquiry, the argument for using calculation in critical theory can be interpreted as either a complement or a counter-argument to KKV. As a complement, it provides the mirror image to their use of qualitative methods in neopositivist IR research. As a counter-argument, it suggests that methods need not be subsumed under exogenously given, and dogmatically defended, wagers in the philosophy of science.[[68]](#footnote-68) We mean our argument primarily in the second sense. In that sense, we see *both* that there is a utility of quantitative methods for critical IR enterprises, and that there are possible payoffs of revising traditional paths *from ontology to method* into multidimensional journeys.

To be clear, we are not arguing for a takeover of quantitative methods by, or the dominance of quantitative methods in, critical theorizing, or for an understanding of the utility of quantitative methods that demands a neopositivist epistemology. Nor are we arguing that it is necessary to operationalize or quantify concepts traditionally employed in critical IR. To argue that quantitative methods *can* be useful to critical theorists is by no means to argue that they should be the only, or even the primary, methods used. Furthermore, we see neither “quantitative methods” nor “critical IR” as methodologically meaningful categories. The techniques that we include in the descriptive category of “quantitative” are best understood as a set of specific methods, useful for specific purposes. We see critical theory as (an) ontological position(s). Whatever the relationship between this ontological position and epistemological stance, it does not demand or reject specific techniques of information gathering or analysis.

For critical IR, we see using quantitative methods as not only possible but potentially beneficial. Building on Foucault’s declaration that “practicing criticism is a matter of making facile gestures difficult,” we contend that geometric, axiomatic, and representational mathematical methods can enhance critical IR’s project of revealing the complicity in (apparently simple) concepts in global politics and IR scholarship (from ethnic conflicts to imperialism).[[69]](#footnote-69) Building on David Campbell’s characterization of danger as “a condition of possibility” of current functionality in global politics which is “not an objective condition” but “an effect of interpretation,” statistical, formal, and mapped models can help critical theorists understand how certain conditions of possibility become entrenched at the expense of others.[[70]](#footnote-70) This work of *seeking complexity* serves one of the major underlying functions of critical theorizing: finding (and revealing) invisible injustices in (modernist, linear, structuralist) *givens* in the operation and analysis of global politics. In other words, quantitative methods *add* tools to the arsenal of critical IR enterprises, *without* subtracting existing tools. They therefore offer the possibility to do more, and work more diversely, with critical inquiry in IR. We suggest that this possibility can enrich critical IR significantly.

Still, it is not *for* (or in defense of) critical IR that we offer this pairing of quantitative methods and critical theory in IR. Rather, we offer this discussion of quantitative and mathematical methods in critical IR not to make the case for this specific set of combinations (although they can indeed generate useful scholarship). We offer it as an example of the research potential of a broader view of the relationship among method, methodology, epistemology, and ontology. Our goal here is to revise the method-ontology continuum, rather than to argue in favor of method-driven or question-driven research. Most directly, our goal is to complicate the method/methodology relationship – methods are techniques, methodologies are relationships. Techniques do not necessitate specific relationships. Not only can the methodological *freedom* and *pluralism* that necessarily results from such a revision provide fodder for *substantive* creativity, it can also open up new pathways for thinking about, mapping, and teaching IR.

1. Gary King, Robert Keohane, and Sidney Verba, *Designing social inquiry: scientific interference in qualitative research* (Princeton, NJ: Princeton University Press, 1994). [↑](#footnote-ref-1)
2. Ibid. [↑](#footnote-ref-2)
3. Ibid., p.4. [↑](#footnote-ref-3)
4. Patrick Thaddeus Jackson, *The Conduct of Inquiry in International Relations* (New York: Routledge, 2010), p.67, italics in original. [↑](#footnote-ref-4)
5. Ibid. [↑](#footnote-ref-5)
6. e.g., Marthan Finnemore and Kathryn Sikkink, “Taking Stock: The Constructivist Research Program in International Relations and Comparative Politics,” *Annual Review of Political Science* 4(1) (2001): 391-416; Audie Klotz and Deepa Prakash, *Qualitative Methods in International Relations: A Pluralist Guide* (New York: Palgrave MacMillan, 2008); Audie Klotz and Cecilia Lynch, eds. *Strategies for Research in Constructivist International Relations* (London: ME Sharpe, 2007). [↑](#footnote-ref-6)
7. e.g. Stefan Titscher, Michael Meyer, Ruth Wodak, and Eva Vetter, *Methods of Text and Discourse Analysis (*London: Sage, 2000). [↑](#footnote-ref-7)
8. e.g. Janet M. Box-Steffensmeier and Christopher J. W. Zorn, “Duration Models and Proportional Hazards in Political Science,” *American Political Science Review* 45(4) (2001):972-988. [↑](#footnote-ref-8)
9. e.g., citation to author removed. [↑](#footnote-ref-9)
10. Brooke Ackerly, Maria Stern, and Jacqui True, eds., *Feminist Methodologies for International Relations* (Cambridge: Cambridge University Press, 2006), p. 10. [↑](#footnote-ref-10)
11. e.g. J. Ann Tickner, *Gender in International Relations: Feminist Approaches to Global Security* (New York: Columbia University Press, 1992). [↑](#footnote-ref-11)
12. e.g. J. Ann Tickner, “So What Is Your Research Program? Some Feminist Answers to International Relations Methodological Questions?” *International Studies Quarterly* 49(1) (2005):1-22, and Ackerly, Stern, and True, *Feminist Methodologies for International Relations*. Note that both Ackerly (in Brooke Ackerly and Jose Miguel Cruz, “Hearing the Voice of the People: Human Rights as if People Mattered,” *New Political Science* 33(1) (2011): 1-22) and True (in Jacqui True and Michael Mintrom, “Transnational Networks and Policy Diffusion: The Case of Gender Mainstreaming,” *International Studies Quarterly* 45(1)(2001): 27-57) have used statistical methods to explore causal questions about gender and international relations in their research. This is an example of critical researchers deploying traditional methods *with their traditional assumptions* to further critical ends. While we think that is an important part of deconstructing the assumption that critical research is *purely qualitative*, it is fundamentally a different sort of intervention we advocate: one that takes quantitative methods *beyond* the traditional assumptions made about their utility in IR to adapt to the core goals of critical research. [↑](#footnote-ref-12)
13. e.g. Barbara Koremenos, Charles Lipson, and Duncan Snidal. “The Rational Design of International Institutions,” *International Organization* 55(4) (2001):761-799. [↑](#footnote-ref-13)
14. Edward D. Mansfield and Jon C. Pevehouse, “Quantitative Approaches.” In Duncan Snidal and Christian Reus-Smit, eds. *Oxford Handbook of International Relations* (Oxford: Oxford University Press, 2008), pp. 481-498. [↑](#footnote-ref-14)
15. e.g. King, Keohane, and Verba, *Designing Social Inquiry.* [↑](#footnote-ref-15)
16. e.g. James D. Fearon, “Counterfactuals and Hypothesis Testing in Political Science.” *World Politics* 43(2) (1991):169-195; and Erik Gartzke and Yonatan Lupu, "Trading on preconceptions: Why World War I was not a failure of economic interdependence," *International Security* 36 (4) (2012): 115-150. [↑](#footnote-ref-16)
17. Dvora Yanow, *Constructing ‘Race’ and ‘Ethnicity’ in America: Category-Making in Public Policy and Administration.* (Armonk, NY: M. E. Sharpe, 2003). [↑](#footnote-ref-17)
18. Mark Bevir and Asaf Kedar, “Concept Formation in Political Science: An Anti-Naturalist Critique of Qualitative Methodology,” *Perspectives on Politics* 6(3) (2008): 503-517; and Pushkala Prasad, *Crafting Qualitative Research: Working in the Post-Positivist Tradition* (Armonk, NY: ME Sharpe, 2005). [↑](#footnote-ref-18)
19. See, e.g., discussion in Ian Shapiro, “Problems, Methods, and Theories about the Study of Politics, or What’s Wrong with Political Science and What to Do About It,” *Political Theory* 30(3) (2002): 596-619. [↑](#footnote-ref-19)
20. E.g.,King, Keohane, and Verba, *Designing Social Inquiry*; Janet Johnson and Henry Reynolds, *Political Science Research Methods*, 5th ed. (Thousand Oaks, CA: Sage, 2004); Craig Brians, Lars Willnat, Jarol Manheim, and Richard Rich, *Empirical Political Analysis: Quantitative and Qualitative Research Methods*, 8th ed. (Pearson, 2010); Henry Brady and David Collier, *Rethinking Social Inquiry: Diverse Tools, Shared Standards*, 2nd Ed. (New York: Rowman and Littlefield, 2010). [↑](#footnote-ref-20)
21. King, Keohane, and Verba, *Designing Social Inquiry*, p. 7 [↑](#footnote-ref-21)
22. Ibid., p.2. [↑](#footnote-ref-22)
23. Jackson, *The Conduct of Inquiry*, p. 35. [↑](#footnote-ref-23)
24. E.g. Sandra Harding, *Is Science Multi-Cultural?* (Bloomington: Indiana University Press, 1998. [↑](#footnote-ref-24)
25. e.g., Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962); Jackson, *The Conduct of Inquiry.* [↑](#footnote-ref-25)
26. Finnemore and Sikkink, “Taking Stock”; Klotz and Prakash, *Qualitative Methods in International* Relations; Klotz and Lynch, eds., *Strategies for Research*; Mark Salter and Can E. Mutlu, *Research Methods in Critical Security Studies* (New York: Routledge, 2013); Claudia Aradau, Jef Huysmans, Andrew Neal, and Nadine Voelkner, *Critical Security Methods: New Frameworks for Analysis* (New York: Routledge, 2014). [↑](#footnote-ref-26)
27. Lene Hansen, “A Case for Seduction? Evaluating the Poststructuralist Conceptualization of Security,” *Cooperation and Conflict* 32(4) (1997):372. [↑](#footnote-ref-27)
28. Hansen, “A Case for Seduction?”, p.372. [↑](#footnote-ref-28)
29. Ackerly, Stern, and True, *Feminist Methodologies for International Relations,* p. 4. [↑](#footnote-ref-29)
30. Ibid. [↑](#footnote-ref-30)
31. e.g., Tickner, “What is Your Research Program?”; Amir Lupovici, “Constructivist Methods: A Plea and Manifesto for Pluralism,” *Review of International Studies* 35(1) (2009): 195-218. See also Klotz and Lynch, *Strategies for Constructivist Research*, p.10; Vincent Pouliot, “’Sobjectivism’: Toward a Constructivist Methodology,” *International Studies Quarterly* 51(2) (2007):359. [↑](#footnote-ref-31)
32. David Sylvan and Stephen Majeski, “A Methodology for the Study of Historical Counterfactuals,” *International Studies Quarterly* 42(1) (1998): 49-108; Alexander Wendt, *Social Theory of International Politics* (Cambridge: Cambridge University Press, 1999). [↑](#footnote-ref-32)
33. Hayward Alker, Rediscoveries and Reformulations: Humanistic Methodologies for International Studies (Cambridge: Cambridge University Press, 1996); Brooke Ackerly, “Why a Feminist Theorist Studies Methods,” *Politics and Gender* 5(3) (2009): 431-436; citation to author removed. [↑](#footnote-ref-33)
34. King, Keohane, and Verba, *Designing Social Inquiry,* p.vii. [↑](#footnote-ref-34)
35. Ibid.*,* p 3. [↑](#footnote-ref-35)
36. Ibid.*,* p 4. [↑](#footnote-ref-36)
37. Brady and Collier, *Rethinking Social Inquiry,* p. 19. [↑](#footnote-ref-37)
38. Ibid. [↑](#footnote-ref-38)
39. citation to author removed [↑](#footnote-ref-39)
40. Ibid., p. 211. [↑](#footnote-ref-40)
41. The same could be said for the categories *positivist* and *post-positivist*. While we use the term “neopositivist” here following Jackson’s (*The Conduct of Inquiry*, p.37) specific definition rooted in a discussion of the philosophy of science, references to positivism and post-positivism in IR are more often moves of disciplinary placement and socialization than epistemological stances. [↑](#footnote-ref-41)
42. Ibid. [↑](#footnote-ref-42)
43. Ibid.,p.10. [↑](#footnote-ref-43)
44. Our use of the terms mind-world dualism and monism, phenomenalism, and transfactualism follows that of Jackson, *The Conduct of Inquiry*. [↑](#footnote-ref-44)
45. Jackson, *The Conduct of Inquiry* [↑](#footnote-ref-45)
46. Colin Wight, *Agents, Structures, and International Relations: Politics as Ontology* (Cambridge: Cambridge University Press, 2006), p. 259. [↑](#footnote-ref-46)
47. Jackson, *The Conduct of Inquiry*, p.27. [↑](#footnote-ref-47)
48. Jill Steans, “Engaging from the Margins: Feminist Encounters with the ‘Mainstream’ of International Relations,” *British Journal of Politics & International Relations* 5(3) (2003): 445. [↑](#footnote-ref-48)
49. Martin Hollis and Steve Smith, *Explaining and Understanding International Relations* (Oxford: Clarendon, 1991). [↑](#footnote-ref-49)
50. This is meant in the mathematical sense here. [↑](#footnote-ref-50)
51. We include formal and computational methods in the discussion as methods that (in theory if not in practice) involve numbers and measurement as ways of understanding what ‘is’ or what could be. [↑](#footnote-ref-51)
52. See, for example, Paul MacDonald, "Useful Fiction or Miracle Maker: The Competing Epistemological Foundations of Rational Choice Theory." *American Political Science Review* 97 (4) (2003): 551-565. [↑](#footnote-ref-52)
53. e.g., essays in Thomas Tymoczko, ed. *New Directions in the Philosophy of Mathematics: An Anthology* (Princeton: Princeton University Press, 1998) [↑](#footnote-ref-53)
54. Tymoczko, *New Directions in the Philosophy of Mathematics*; David Sepkoski, *Nomalism nad Constructivism in Seventeenth-Century Mathematical Philosophy* (New York: Routledge, 2013); Harold M. Edwards, *Essays in Constructive Mathematics* (London: Springer-Verlag, 2005). [↑](#footnote-ref-54)
55. Cynthia Enloe, *Does Khaki Become You? The International Politics of Militarizing Women’s Lives* (London: Pluto Press, 1983). [↑](#footnote-ref-55)
56. Ackerly and Cruz, “Hearing the Voice of the People;” Shirin Rai, Catherine Hoskyns, and Dania Thomas, “Depletion: The Cost of Social Reproduction,” *International Feminist Journal of Politics* 16(1) (2014): 86-105; citation to author removed. [↑](#footnote-ref-56)
57. A question asked in Jelena Subotic and Ayse Zarakol, “Cultural Intimacy in International Relations,” *European Journal of International Relations* 19(4) (2013): 915-938. [↑](#footnote-ref-57)
58. A question dialoguing with Alan Sienki and Dvora Yanow, “Why Metaphor and Other Tropes? Linguistic Approaches to Analysing Policies and the Political,” *Journal of International Relations and Devleopment* 16(1) (2013): 167-176. [↑](#footnote-ref-58)
59. A question related to Christine Sylvester, *War as Experience: Contributions from International Relations and Feminist Analysis* [↑](#footnote-ref-59)
60. Citation to author removed [↑](#footnote-ref-60)
61. Citation to author removed [↑](#footnote-ref-61)
62. David Sylvan, “’Hi-Tech Hermeneutics,’: Combining Rigor and Alternative Epistemologies of Social Science,” in Renee Marlin-Bennett, ed. *Alker and IR: Global Studies in an Interconnected World* (London: Routledge, 2011), p.178-89; Hayward Alker. *Rediscoveries and Reformulations: Humanistic Methodologies for International Studies* (Cambridge: Cambridge University Press, 1996). [↑](#footnote-ref-62)
63. This is a question that is asked in Laura Shepherd’s *Gender, Violence, and Security* (London: Zed Books, 2008). [↑](#footnote-ref-63)
64. Question from Richard Shapcott’s critique (in *Ethics and International Affairs* 27[4] [2014]) of Daniel J. Levine’s *Recovering International Relations: The Promise of Sustainable Critique* (New York: Oxford University Press, 2012). [↑](#footnote-ref-64)
65. Question raised in Jenny H. Peterson, “Creating Space for Emancipatory Human Security: Liberal Obstructions and the Potential of Agonism,” *International Studies Quarterly* 57(2) (2013): 318-328. [↑](#footnote-ref-65)
66. Question derived from David Turton, ed. *War and Ethnicity: Global Connections and Local Violence* (London: Boydell and Brewer Ltd, 2002). [↑](#footnote-ref-66)
67. Question derived from John M. Hobson, “Is Critical Theory Always for the White West and Western Imperialism? Beyond Westphalia Towards a Post-Racist Critical IR,” *Review of International Studies* 33(S1) (2007): 91-116. [↑](#footnote-ref-67)
68. The language of wagers in this context is drawn from Jackson, *The Conduct of Inquiry*. [↑](#footnote-ref-68)
69. Michel Foucault, *Politics, Philosophy, Culture.* (New York: Routledge, 1988). [↑](#footnote-ref-69)
70. David Campbell, ed. *Writing Security: United States Foreign Policy and the Politics of Identity* (Minneapolis: University of Minnesota Press, 1992). [↑](#footnote-ref-70)