Not All Nations at All Times

How States Imitate Each Other Towards Non-Compliance with International Law Norms: an ABM proposal

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Abstract

In international law studies on compliance in general and compliance with court judgments, there is an assumption of states being compliant by default, and compliance being understood in terms of isolated acts of individual states. Empirical research on compliance with European Court of Human Rights judgments has questioned the first theoretical assumption, and has produced insights into the compliance dynamics within the Council of Europe. One such insight shows an initial "conditional generosity" of the European Human Rights system towards non-compliers which did not impede (or even facilitated) a gradual development of better compliance rates among the states. However, even empirical research often leaves the second theoretical assumption untouched. In the present contribution, we report on a model of the 47 (now 46) member states of the Council of Europe as a dynamic network of unitary actors and explore with a threshold model how the norm of *compliance-with-ECtHR-judgements* moves within the network, and how states associate and disassociate from one another in the course of establishing and spreading a norm. With the model, we aim to contribute to the discussion around these theoretical assumptions and empirical findings by showing that (a) rather than strictly favoring compliance under all conditions, the network of states tends towards non-compliance often, (b) the behavior of compliance is not and cannot be seen as a series of isolated actions by individual states, and that (c) compliance rates are locked in relatively quickly and subsequently do not change much over time.

Keywords

Compliance, International Law, European Court of Human Rights, Council of Europe

1. Introduction

> *"Almost all nations observe almost all principles of international law and almost all of their obligations almost all of the time."* [1]

A central tenet of international law studies on first and second order compliance (compliance with the law, and compliance with international court decisions, respectively) assumes that states by default comply with their international obligations. In fact, international law depends on voluntary compliance by states. In this regard, many theoretical but also empirical studies

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have looked at state compliance in terms of isolated acts – focusing on compliance with specific decisions of an international court as the unit of analysis [2] or by looking at a single country and its compliance record [3]. Instead, in this article, we propose that compliance behavior is connected, mutually interdependent behavior.

Empirical research on the European Court of Human Rights, the body tasked with upholding the European Convention on Human Rights (ECHR) in Europe questions at least the first assumption: While all 46, formerly 47 with Russia, Council of Europe (CoE) member states have recognized the jurisdiction of the court, we see that more than half of all cases rendered by the court remain unenforced. Clearly, within this context, not all nations observe most of their obligations most of the time.

Conventional legal research methods provide insights into specific states' compliance apparatuses – arguments that compliance depend on state capacity, rule of law index, state's GDP [4, 5, 6]. We deviate from these research agendas and also question the second assumption, namely that compliance is comprised of isolated acts of individual states. We rather propose to view compliance as interactive, iterative and interdependent decision making by interconnected actors at the state and sub-state level. In a first instance of applying this view, we use agent-based modeling to model compliance with court judgments as instances of normative behavior which depends on the behavior of other states and a state's own previous behavior.

The method is uniquely suited to supplement the theoretical and empirical work that is already being undertaken to better understand the European Human Rights regime, since it allows for an exploration of the many different actors and interactions that – in our view – determine the behavior of states when it comes to complying with ECtHR judgments: states, substate actors, the Court, and the Committee of Ministers (CM), which is tasked with determining whether a judgment has been complied with. It also allows for gathering insights into the learning and imitation processes, as well as the normative and pragmatic considerations that happen among states in the compliance process and how those interact with each other [7].

This paper makes a first step into the direction of this research agenda by studying (non-)compliant behavior as normative behavior that states can be pressured into by (non-)compliant peers. Researching how normative considerations influence state behavior has significant tradition in international relations theory, but it has not been investigated with the help of computational models. In this sense, our contribution serves as an illustration [8] of potential consequences for the European Human Rights system, if we understand compliant behavior as normative behavior which states imitate and how such a view can contribute to our understanding of the dynamics of that system.

2. Compliance with Court Judgments as Normative Behavior

The effect of social norms on individual behavior is a well-studied phenomenon with evidence ranging from game theoretical considerations, to case studies and experimental studies in the laboratory and the field [9, 10, 11, 12, 13, 14], as well as computational studies on the emergence and effect of norms within groups [15, 16, 17]. Under the umbrella of theories on the expressive function of law, parallels between social norms and legal norms and their respective effect on behavior have been drawn, especially in the field of legal sociology [18, 19, 20]. From the

gathered evidence, we know that normative information can change behavior beyond mere factual information [21], i.e., that social norms and information on expected behavior can be quite impactful.

In international relations theory, i.e., the study of state behavior and interaction, studies have extrapolated from individual behavior to show how norms can evolve and stabilize in the international system [22], and normativity became a central research objective with the advent of constructivist approaches to compliance. These approaches help us conceptualize compliance as an iterative, interactive process where the law and state actors create a shared understanding of mutual obligations, so that being compliant has a normative, desirable component which depends on a state's own and other states' behavior [23, 24].

Norms research in international relations proposes that states can be "acculturated" into adopting new international norms and changing their behavior, a process that does not only (or not even predominantly) change their incentives or convictions, but their social environment [23]. On this basis, we develop an agent-based model which investigates the spread of a compliance norm among CoE member states and explores how adoption of a norm changes the dynamics of a network.While this model is a strong simplification of the observed system, its current and planned iterations do reproduce important aspects of the CoE structure: member states are geographically fixed, but free to associate or disassociate from each other; learning and imitation processes within subgroups can be observed; and compliance is situated within the CoE structure rather than an isolated action of one state. For a more detailed discussion on other aspects of modeling compliance within the European Human Rights regime, such as time and the meaning of compliant behavior, more accurately, see Section 5 below.

This model serves as a first exposition of the use of agent-based modeling in international law research and contributes to the research on compliance by illustrating a useful tool in investigating how norms spread among states and how this norm spread influences the dynamics of a community of states.

3. Model: Norm Spread on a Network

3.1. Agents and Network

In NetLogo [25], inspired by the NetLogo library's *Virus on a Network* [26], we model CoE member states as agents connected by a random network. The *Virus* model served as a starting point to think about states as nodes connected via a network, with a simple characteristic which can spread (in the original: "infected"). However, we have significantly altered the model to serve as a better representation of our target system and the properties of our characteristic ("compliant").

Links between states specify the set of neighbors, N_i of each state i. This neighborhood of the state is not to be taken (necessarily) in the geographical sense. Rather, what we mean by neighbors or neighborhood is the set of states that any given state's behavior is influenced by. In this initial model, where links are randomly distributed, neighborhoods are arbitrary, but they can be adapted to more realistic representations of the target system: economic ties determine who influences whom [27], or shared culture may determine the weight of a neighbors' behaviour on a state's imitation decision [28]. In principle, compliance behavior is public knowledge, so

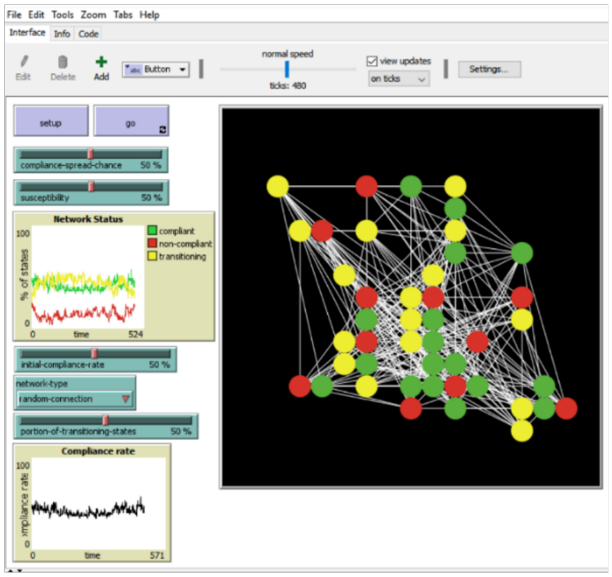

Figure 1: User interface of the model in NetLogo.

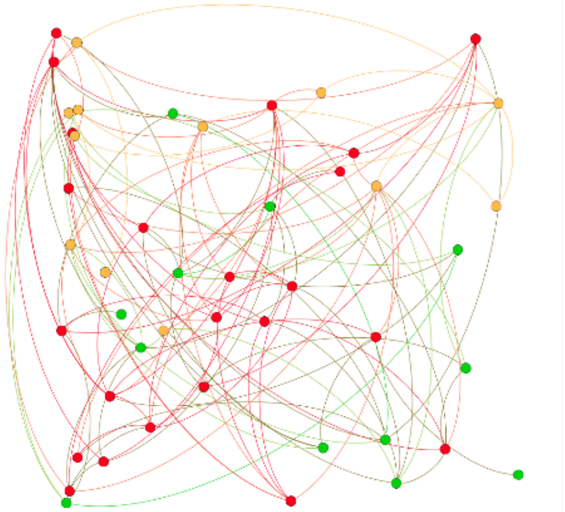

Figure 2: Schematic network view of CoE states and their connections to their neighbors.

that all states have information on all other states, but in reality, some states' behavior will matter more. For a more detailed discussion on next steps in this direction, see Section 5. In the present model, neighborhood size is varied systematically to better understand how the model behaves.

States are characterized by their compliance behavior, which can take three values: *compliant*, *non-compliant*, and *transitioning* (green, red, and yellow respectively, in Figures 1 and 2). Compliance behavior is public knowledge and serves as a signal for a norm of compliance

having been adopted or not [29]. At each tick, we record the compliance rate in the network, i.e., the number of compliant states over all states.

3.2. Dynamics

We propose that the spread of the compliance norm follows a peer-pressure dynamic which leads to an imitation of behavior, i.e., a state observes what its neighbors are doing and – if a sufficient portion of its neighbors are behaving differently than itself – might adapt its behavior and imitate them:

- A compliant [non-compliant] state which observes a sufficient number of its neighbors with a different norm changes to transitioning.
- A transitioning state which observes a sufficient number of its neighbors to be compliant [non-compliant], becomes compliant [non-compliant].

The *imitation_threshold* determines whether imitation might take place, i.e., when a sufficient number of neighbors has been reached (for threshold models, see [30]). The parameter takes values [0,100] and corresponds to the percentage of neighbors, which have to exhibit a different compliance behavior than the state itself. Imitation can then take place if:

$$\frac{n(M_i)}{n(N_i)} \cdot 100 > imitation\_threshold$$

where M_i.is the set of neighbors with compliance behavior that is different from that of state i, and $n(N_i)$ is the number of elements in that set. That people adapt their own behavior to what they feel is the normatively acceptable behavior in a peer group is well documented in experimental norm research with individuals [21] and states [28]. We assume that the likelihood of imitation indeed taking place is dependent on the difference between the imitation threshold and the observed percentage of neighbors behaving differently:

$$prob(imitation) \sim (imitation\_threshold - \frac{n(M_i)}{n(N_i)} \cdot 100)$$

In practice, this means (1) that at a given imitation threshold, a higher compliance rate leads to a higher probability of norm imitation, i.e., as peer pressure increases, likelihood of imitation increases. (2) At a given compliance rate, a higher imitation threshold leads to lower probability of norm imitation. This seems like a reasonable initial assumption as well: if a state is more reluctant (as a higher imitation threshold might be interpreted) to adopt its neighborhood's predominant behavior, imitation is less likely at any given compliance rate of the neighborhood.

In summary, with $prob(imitation)$, if a compliant [non-compliant] state observes a sufficient number of its neighbors being non-compliant and transitioning [compliant], it changes to transitioning. Likewise, with $prob(imitation)$, if a transitioning state observes a sufficient number of its neighbors to be compliant [non-compliant], it becomes compliant [non-compliant].

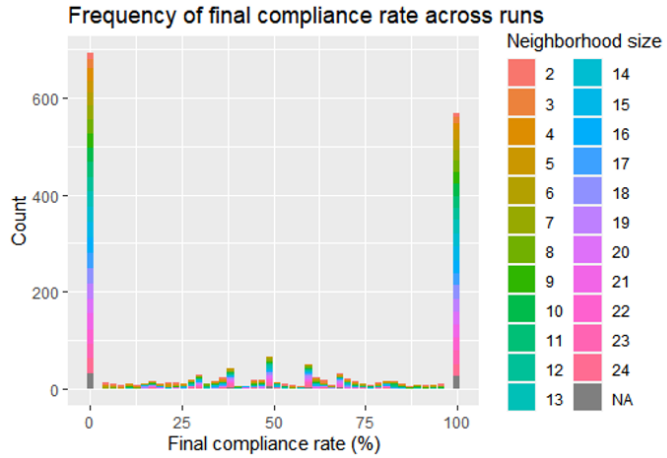

Figure 3: Frequency of final compliance rate (at t=100) for parameter combinations of $imitation\_threshold$ [50-90%, steps of 5], $initial\_compliance\_rate$ [10-90%, steps of 10], and $neighborhood\_size$ [2-24, steps of 2].

3.3. Initialization and Output

To understand the behavior of the model, we systematically vary the proportion of compliant states in the network at t=0, $initial\_compliance\_rate$, [0,100], and the proportion of transitioning states in the network, $proportion\_of\_transitioning_states$, [0,100]. The initial number of transitioning states in the network, as a proportion of the overall number of non-compliant states. We also systematically vary the $neighborhood\_size$, which indicates how many other states any given state is connected to. In this first version of the model, this is a static parameter, i.e., once a neighbor, always a neighbor, and all states have the same number of neighbors. Neighbors are the reference group for imitation. At each time step, we record the compliance rate of the overall network to understand the spread of the compliance norm.

4. Comparing model outcomes and observations from the European Human Rights regime

While this iteration of the model primarily serves as a proof of concept to show that agent-based modeling can be a useful tool in the study of international law, and subsequent adaptations are in planning, there are nevertheless a few first contributions to the discussions that have been laid out in the introduction. We explore different imitation thresholds, initial compliance rates (how many states are compliant at the beginning of a simulation) and neighborhood sizes (how many neighbors a state has), to understand the dynamics of compliance spread. Varying the imitation threshold by five points on a range from 50% to 90%, the initial compliance rate by ten points from 10% to 90%, and the neighborhood size by on from 2 to 24, we have a first set of simulations.

Figure 3 shows the final compliance rate of the network (at tick = 100) for the aforementioned parameter space. Within the parameter sweep detailed above, we see that the network tends

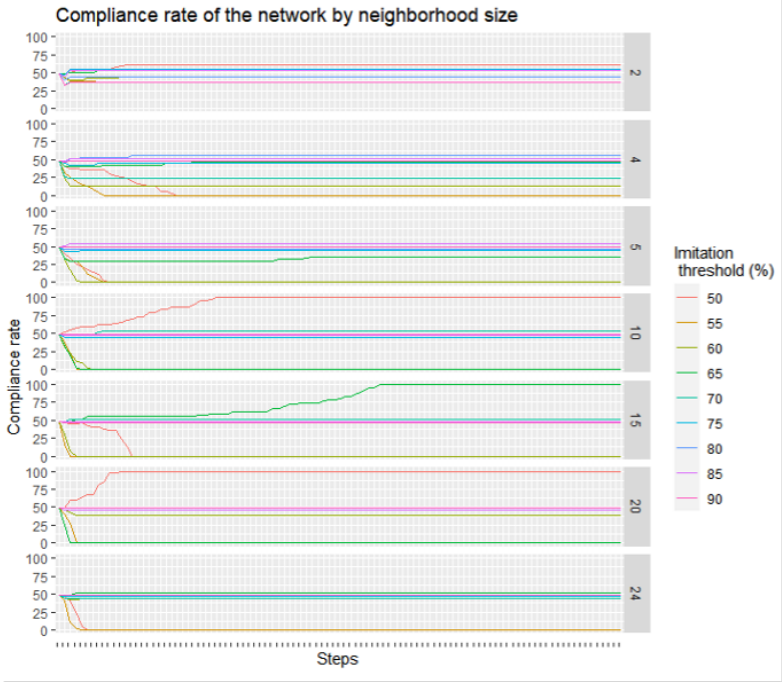

Figure 4: Development of network compliance rate [%] through time [steps] by $imitation\_threshold$ and $neighborhood\_size$.

towards non-compliance (strictly less than 50% of states are compliance) more often than towards compliance (more than or equal to 50% of all states are compliant), contributing to the empirical findings that not most of states comply with their obligations most of the time. Of course, this does not answer the question of why that is the case, which would warrant more realistic modelling choices and a closer look at the dynamics through time.

We look at the development of compliance rates for different imitation thresholds and neighborhood size for a total of 100 ticks in each model run. We see that for the most part, a lock-in of the compliance rate is reached quickly, i.e., a certain compliance rate is reached after very few time steps and does not change subsequently (Figure 4). This contradicts the empirical finding that the European Human Rights regime experienced a period of "conditional generosity", where all member states and the Committee of Ministers, the body which decides whether a judgment has been complied with, turned a blind eye to state's non-compliance. Despite this, or perhaps because of this conditional generosity, the following years saw an incredible increase in overall compliance rates. This suggests that the model might benefit from considerable re-adjustment to allow for the calibration with these empirical insights.

Lastly, Figure 5 shows that at low imitation thresholds, the overall network tends to either full compliance or full non-compliance. At high imitation thresholds, the network tends to partial (non-) compliance. This effect is mitigated at very small neighbourhood sizes.

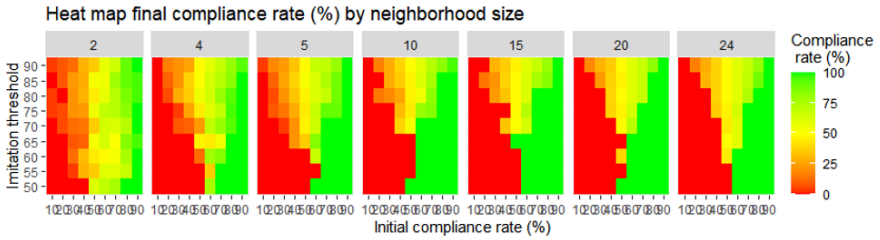

Figure 5: Final compliance rate [%] as a function of $initial\_compliance\_rate$ [%] and $imitation\_threshold$ [%].

5. Discussion and Outlook

In order to make the model more useful for the ongoing debates within international law research, we are currently implementing a number of improvements.

(1) The size of the neighborhood, i.e., how many other states' behavior is observed by any given state is important, as the first results show. These results are based on a random network generation with a fixed number of ties per state, resembling many more generic polarization models (by the bi-model distribution of final compliance rates, for example). More realistically, we see different networks at play within the Council of Europe: cultural ties, geographic neighbors with common or distinct legal traditions, economic dependencies, etc. From computational studies on networks of individuals, we know that network topology plays an important role in the emergence of norms [31]. We aim to combine these insights to work on network implementations which use cultural closeness [32], trade data for economic interdependencies, and distance between capitals for geographical relations to see how different spheres of influence impact the overall compliance dynamic, and to increase empirical relevance of the model.

(2) Dynamic network: Instead of a static network, which is generated at the initialization stage, we allow for states to (dis-)associate from other states, i.e., states can break ties with a neighbor that has a different compliance norm and connect to another state with the same compliance norm. This is a realistic assumption: from voluntary associations, for example of the Scandinavian countries, to the isolation and exclusion of Russia, to the dissolution of formerly strong ties due to the rule of law discussion within Europe, states continuously redefine who their reference group is for determining what counts as (un-)acceptable behavior.

(3) Time-lag: further iterations of the model, we aim to introduce a time lag to the transitioning process: for compliant behavior state capacity is a necessary condition for normative pressure to work. Hence, it is a reasonable assumption that the process of moving from non-compliance to transitioning to becoming compliant takes longer than the reverse. We are also interested in overlapping networks of influence. While some associations might be broken and rewired, others – such as geographical proximity and economic ties – are impossible or harder to break.

(4) Time-steps: time-steps not as an arbitrary measure independent of the model dynamics, but rather as an integral part of it by modeling incoming cases as time steps which give states impulses for either securing or adjusting their behavior.

(5) Definition of compliance: for simplicity, compliance in the current iteration of the model is simply a recorded characteristic of each state and the compliance rate is a feature of the entire network. More realistically, compliance is an act (however interdependent and iterative) of each state when facing a case, and the compliance rate can be recorded for each state (based on number of past cases overall and past cases complied with), as well as for the entire network.

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