

Volume 6, Issue 1, April 2009

Virtual Worlds as a New Game Theoretic Model for International Law: The Case of Bilateral Investment Treaties

*Peter S. Jenkins**

Abstract

Game theoretic analysis of international law has traditionally revolved around the Prisoner's Dilemma, a model developed during the Cold War that reflects the general unenforceability of international agreements. Bilateral Investment Treaties (BITs) are, however, enforceable and require a different approach. The current global economic crisis will exacerbate the controversies concerning the broad powers exercised by the arbitrators appointed under BITs. It is thus imperative to explore a viable new game theoretic model, which can be provided by virtual worlds such as Second Life and World of Warcraft.

DOI: 10.2966/scrip.060109.4



© Peter S. Jenkins 2009. This work is licensed under a [Creative Commons Licence](#). Please click on the link to read the terms and conditions.

* PhD candidate, Osgoode Hall Law School, York University, Member of the State Bar of California. The author would like to thank the anonymous referees and also Gus Van Harten and Craig M Scott for their helpful comments.

1. Introduction

Virtual worlds (VWs), also known as Massively Multiple Online Games (MMOGs), began to become widespread in the early 1990's. They are three-dimensional, online, persistent, immersive, electronic role-playing/social games, where players interact with others through representations of themselves known as avatars. Prior to first entering the VW, the player is required to agree to the game owner's Terms of Service by clicking on the End-User Licensing Agreement (EULA) which usually contains a compulsory arbitration clause. Most of these VWs, such as World of Warcraft and Second Life, have their own currency, economy and social structures. Many of the regular players of MMOGs (currently estimated to be at least 30 million world-wide) spend substantial portions of their time in these microcosms of society, playing, shopping, socialising and even working there. Based on the continuation of the exponential increase in the number of players that has occurred over the past decade, the number of regular VW players could, in the next 5 to 10 years, exceed the current number of internet users (about 1 billion). These players will exert a compelling normative influence on politicians and policy-makers to make the real world begin to reflect many of the desirable attributes of VWs.¹

Bilateral Investment Treaties (BITs) are agreements governing private investments by nationals and companies of one state in the state of the other host country, known as Foreign Direct Investment (FDI). Although BITs have been in existence since 1959 when the first one was signed by Germany and Pakistan, they began rapid proliferation in the early 1990's and currently there are more than 2600 of them in force world-wide.² Powerful capital-exporting hegemons often enter into BITs with less-developed countries on the basis of a standard template agreement. Most BITs protect investments made by an investor of one state in the territory of the host state, for example by prohibiting expropriation. This prohibition includes "indirect expropriation" which could be found in some cases to have been caused by environmental, safety or land use laws passed by a host state on the basis that they are discriminatory and have a "severe" impact on the investment. This potentially provides greater rights to foreign investors than they would have under domestic regulatory takings principles, which generally require near or total destruction of the investment.³ What is unique about BITs is that dispute resolution is by international arbitration decisions that are enforceable by investors under the International Centre for Settlement of Investment Disputes Convention (ICSID) or the New York Convention of 1958 in any state that has assets of the respondent and is a party to those conventions. Currently, 143 nations are ICSID members. This has led some

¹ E Castronova, *Exodus to the Virtual World* (New York: Palgrave Macmillan, 2007).

² UNCTAD, "World Investment Report 2008 – Transnational Corporations and the Infrastructure Challenge" (2008) at 14 (available at http://www.unctad.org/en/docs/wir2008_en.pdf (accessed 25 Jan 09)).

³ M C Porterfield, "International Expropriation Rules and Federalism" (2004) 23 *Stanford Environmental Law Journal*, 4-89.

scholars to characterise BITs as the first emerging form of truly enforceable global administrative law.⁴

The current global economic crisis has highlighted the potential increasing importance of BITs as states such as China, Russia and Singapore – with a trade surplus and/or extensive foreign currency reserves in the form of sovereign wealth funds, but relatively weak labour, environmental and human rights standards – begin to invest more extensively in foreign businesses in countries such as the United States, Canada, EU members, Australia and New Zealand.⁵ China, for example, has recently concluded a BIT with New Zealand and is in the process of negotiating a BIT with the US and Canada. Pressures may therefore arise whereby developed countries experience a chilling effect on potential new environmental, labour and human rights initiatives in their own countries, out of concerns that an arbitrator appointed under a BIT may find that the initiative discriminates against the foreign investor and severely affects the value of its investment. In addition, the expected substantial drop in FDI to developing countries due to the economic crisis will result in increased competition among them for FDI, with a possible collective action problem. It is thus critical that a reductive, abstract model for understanding BITs be developed. Such models in the context of international law have traditionally been supplied by game theory, primarily the Prisoner's Dilemma (PD).

The PD was originally developed by Merrill Flood and Melvin Dresher working at the RAND Institute in 1950. Even though it is probably already familiar to most readers, the canonical tale is set out here once more for reference. Two suspects, A and B, are put into separate cells and cannot communicate with each other. If one testifies for the prosecution against the other (defects), and the other remains silent (cooperates), the defector goes free, and the cooperator receives the full 10 year sentence. If both cooperate, then both prisoners each receive just a 6 month sentence for a minor charge. If both prisoners defect, then each receives a 5 year sentence. Each prisoner must make the choice of whether to betray the other or to remain silent. Neither prisoner is certain of what decision the other prisoner will make. As a result, since each prisoner, given the other player's choice, will always do better by defecting, the result of a one-shot game is typically mutual defection, despite the fact that it is the second worst result for each player. In versions where the prisoners are able to make an agreement prior to the game, or to secretly communicate or signal to each other during the game, the result is the same since they realise that there is no overarching authority that can enforce their promises to each other. This chart summarises it:

	B cooperates (remains silent)	B defects (testifies)
A cooperates	A & B receive 6 months each	A receives 10 years; B is released
A defects	A is released; B receives 10	A & B receive 5 years each

⁴ G Van Harten and M Loughlin, "Investment Treaty Arbitration as a Species of Global Administrative Law" (2006) 17 *European Journal of International Law*, 121-150.

⁵ United Nations Conference on Trade and Development (UNCTAD), note 2 at xv to xix.

	years	
--	-------	--

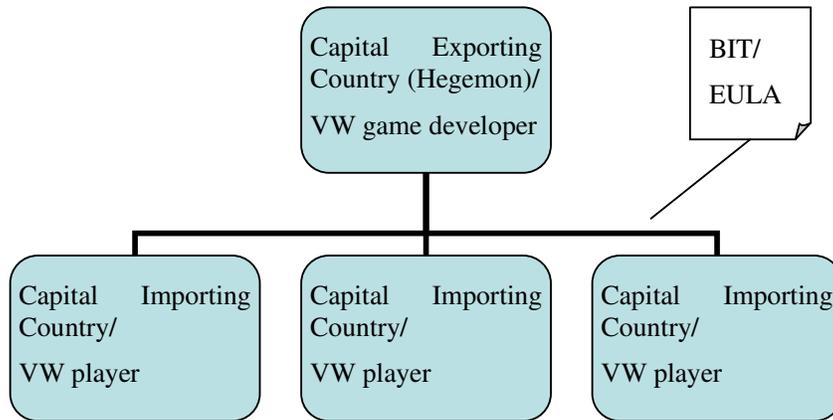
The academic discourse has focused on the two issues central to the PD, i.e. cooperation and defection (as well as exit in one variation) in the context of international treaties, where the parallel issues are compliance, non-compliance (either overt or secretive), and withdrawal or abrogation.⁶ The discourse has also focused on multiple player and iterated PD games in the context of international treaties. Iterated PD games, particularly those where the total number of rounds is unknown by the players, have tended to produce more cooperation than one-shot games, due to concerns about reciprocity and reputation. In iterated games, the "tit-for-tat" strategy – where a player mimics the other player's previous move – has proved to be the most successful against other strategies.

None of the academic scholarship to date on the PD refers to the growing phenomenon of virtual worlds (VWs), such as Second Life (SL) and World of Warcraft (WoW). There are perhaps several reasons for this: 1) VWs are relatively new, having only captured the attention of the mainstream media, the general public and the legal profession in the last four or five years,⁷ 2) although players/inhabitants of VWs might be the equivalent of sovereign nations in the real world (RW), these individuals do not normally have formal agreements with each other – instead they each have an individual agreement with the game developer, which is a standard contract of adhesion, the End-User Licensing Agreement (EULA), that they agree to by clicking on it before they enter the VW, and 3) in the strand of Game Theory occupied by the PD, the assumption is that there is no overarching authority to enforce any pre-game or secret in-game agreements between the parties. In VWs, there is an overarching authority in the form of domestic courts which can enforce the EULA between the game developer and the players. Also, to the extent that players have third party beneficiary rights under the other players' EULA contracts with the game developer (e.g. concerning standards of in-game conduct), those rights are theoretically enforceable by domestic courts under third party beneficiary law.

VWs may contain a viable game theoretic model for an analysis of BITs, which often involve an established capital-exporting hegemon such as the US (as well as emerging ones such as China), which would be equivalent to the game developer, and numerous capital-importing countries, which would be equivalent to the players. The treaties themselves would be equivalent to the standard EULA that players have to click on before entering the VW. The following chart illustrates the proposed framework of this new game theoretic analysis of BITs:

⁶ L Helfer, "Exiting Treaties" (2005) 91 *Virginia Law Review*, 1579-1648, at 1612.

⁷ G Lastowka "Virtual Law Articles" (2008) available at <http://madisonian.net/2008/03/18/virtual-law-articles/> (accessed 25 Jan 09).



As we can see from this chart, the series of bilateral contracts between each of the players and the game developer fits well with the BIT model. Furthermore, the overarching enforcement authority in the form of having domestic courts enforce arbitration awards issued pursuant to a BIT is paralleled by the ability of parties to a EULA to have disputes arbitrated and the resulting decision enforced in court. This distinguishes it from the PD model where the assumption is that there is no central enforcement authority.

The forward-looking part of this analysis concerning the possible future of the law concerning BITs, as well as the use of game theory in international law generally, reflects Ruth Buchanan's notion that "new forms of 'global law' could well emerge from a myriad of marginal, improbable or discredited sources" and that the authors of such new global law could be those presently occupying "the interstitial places of the transnational order and who are presently denied the protection of settled or determinate law" (which is an excellent, but probably unintended, description of the inhabitants of VWs).⁸ Part 2 of the paper will set out several reasons why the PD model is unsuitable for understanding international law generally as well as BITs in particular. Part 3 will discuss network theory as an alternative model and illustrate how, although it is not a good descriptive model in the case of investment treaties, it may be an excellent normative one. Part 4 will analyse some of the similarities between BITs and VWs in terms of the key issues of formation, exit, and renegotiation. Part 5 will examine the problem of the intrusion on sovereignty rights by the arbitrators ruling on indirect expropriation issues and how this may be understood by using the normative game theory device of Johan Huizinga's "magic circle". Finally, parts 6 and 7 will draw some conclusions and offer some predictions.

2. Why the Prisoner's Dilemma is not a suitable model for BITs

The PD model is currently very much aligned with the views of the rationalists and instrumentalists such as Jack Goldsmith and Eric Posner. Members of this school of thought essentially compare treaties to non-binding letters of intent, which do not have an external method of enforcement and are dependent on mutual cooperation

⁸ R Buchanan, "Reconceptualizing Law and Politics in the Transnational: Constitutional and Legal Pluralist Approaches", CLPE Research Paper No 19/2008 available at SSRN <http://ssrn.com/abstract=1167722> (accessed 25 Jan 09).

through fears of retaliation or reputational consequences rather than any intrinsic normative value.⁹ In their view, treaties are essentially devices to signal to the other party how they expect to facilitate cooperation to pursue their own narrow interest in the PD. The reputational concern is one that Goldsmith and Posner characterise as having no normative pull in itself since it is, according to them, very much situation-specific, and there is no such thing as a fear of general harm to reputation because each treaty is different. Furthermore, in some situations, unpredictability is an advantage.

Members of the constructivist school, on the other hand, such as Paul Schiff Berman, note that a state's interests are developed by individuals operating with various sets of assumptions that are themselves shaped by what sociolegal scholars refer to as "legal consciousness".¹⁰ Whether one considers this collective consciousness as an insidious form of "hive mind" or merely as a benign swirling around of ideas that are "in the air", the fact remains that juridical concepts permeate our commonsense understanding of daily life and social relations, such as notions of landlord and tenant or husband and wife. As Berman notes, citing *Brown v Board of Education*, (the 1954 US Supreme Court decision that declared that segregated schools were inherently discriminatory), legal norms change consciousness over time, and decisions such as *Brown* have a normative effect that goes beyond merely reflecting existing social attitudes.¹¹ Berman goes on to point out that the best-known example of a paradigm normative shift in international legal consciousness was the fundamental notion of crimes against humanity that was effectively established by the statute of the Nuremberg tribunal and by the decisions of that tribunal under it. Following the Nuremberg decisions, almost every state signed the Genocide Convention and today the notion of crimes against humanity is generally a well-established principle that is not seriously in doubt. Berman further notes that not only states, but individuals such as military officers and even many corporations (for example, in the case of environmental norms concerning global climate change) have internalised these norms and that such behaviour by non-governmental entities can influence governmental actors in the formulation of a state's policies and objectives.

Some scholars, such as Duncan Snidal, have viewed the rationalism versus constructivism distinction to be somewhat of an arbitrary one in that the two schools of thought "provide different lenses through which to view the same empirical phenomena and outcomes."¹² Snidal's view is that both approaches provide greater insight into the analysis when used jointly than when either one is used in isolation. Andrew Guzman's recent book, *How International Law Works: A Rational Choice Theory*, emphasises the role of reputation, status and prestige in the decision-making processes of states, thus arguably melding the instruments of rationalist competition in the PD model with the constructivist notions of shared understandings and norms.¹³

⁹ J Goldsmith and E Posner, *The Limits of International Law* (Oxford: OUP, 2005), at 90-91.

¹⁰ P Berman, "Seeing Beyond the Limits of International Law: Book Review of Jack L Goldsmith and Eric A Posner, *The Limits of International Law*" (2006) 84 *Texas Law Review*, 1265-1316, at 1267.

¹¹ *Brown v Board of Education* 347 US 483 (1954).

¹² D Snidal and A Thompson, "International Commitments and Domestic Politics: Institutions and Actors at Two Levels" in D Drezner (ed) *Locating the Proper Authorities: The Interaction of Domestic and International Institutions* (Ann Arbor: University of Michigan Press, 2002) 197-230, at 200.

¹³ A Guzman, *How International Law Works: A Rational Choice Theory* (Oxford: OUP, 2008), at ch 3.

However, there remains one key issue on which the rationalists and the constructivists are clearly opposed and that is the question of whether, for the purposes of the PD game theoretic model, a state can be said to have a single, identifiable unitary interest.

According to Berman, the rationalists are using flawed reasoning when they assume that sovereign states act in a manner equivalent to a personality with a unitary set of interests. This criticism is also reinforced from another perspective in the work of Anne-Marie Slaughter who has posited that the modern state is "disaggregated" by a form of transnational governance operating through informal networks of government officials and experts in various states.¹⁴ This issue is very germane to the use of the game theoretic model of the PD for purposes of analysing the role of international law. Simply put, if sovereign states do not act essentially in the same manner as individuals, then the PD game theoretic model (as well as any game theoretic model, such as one involving virtual worlds for that matter) could be of dubious value. According to constructivists such as Berman, this is probably the Achilles heel of the rationalists' argument.

Obviously, this is an issue that must be addressed in this paper, which seeks to establish a new form of game theoretic model for international law through substituting actual players in VWs for the notional antagonists in the PD. However, even if sovereign states are not behaviourally equivalent to individuals so that the rational actor meme of the PD analogy cannot shed any light on the relevant international law dynamics, does this necessarily mean that the game theoretic model of VWs is not useful either? Hopefully, this paper will not have to address that question, since this paper will demonstrate, using modern cognitive theory from computer engineers attempting to develop artificial intelligence that, for relevant purposes, sovereign states and individuals can be considered as equivalent. Before embarking on that task, however, it should be pointed out briefly that the PD and VW game theoretic models are fundamentally different in that the former is essentially a descriptive theory, whereas the latter is a normative one in the sense of Edward Castronova's notion¹⁵ that the hundreds of millions of individuals entering VWs in the coming years will begin to exert pressure on real world (RW) decision-makers for the RW to conform to the ideals of the VW. To the extent that the PD model is descriptive/predictive and the VW one is normative, any lack of equivalence between states and individuals in terms of the rational actor theory is less critical for the latter than for the former. In the VW model the individuals are real ones who will attempt to impose their will on the state based on their experiences in the VW. On the other hand, in the PD model, the individuals are notional ones (hypothetical prisoners) who are standing in as miniature surrogates for the state in a thought experiment to test out the dynamics of the state and international law. Berman expressed the opinion in his review essay that Goldsmith and Posner – perhaps ironically – do have a normative goal of their own: justifying the US' refusal to endorse numerous international bodies and agreements in recent years such as the International Criminal Court.¹⁶ There have, however, been numerous forms of speculation as to Goldsmith and Posner's real motivations, including one that they are actually closet Marxists whose anti-cosmopolitan sentiments reflect the "rootless cosmopolitan" theme of the late Stalinist

¹⁴ A Slaughter, *A New World Order* (Princeton: Princeton Univ Press, 2004).

¹⁵ Castronova, see note 1 above.

¹⁶ Berman, see note 10 above, at 1270.

purges of the 1949-1953 period.¹⁷ Berman's speculation is obviously of a more serious nature than the closet Marxist allegation, but nonetheless they are both merely speculative allegations as to the unexpressed motivations of the authors, and cannot be given great credence.

At this point, this paper will venture an argument as to why individuals and sovereign states are substantially similar when it comes to the issue of their role as players pursuing interests in a game theoretic model. Although this argument would tend to assist both the PD and the VW game models, the PD model fails for other reasons, particularly from the fact that it does not recognise that a state's interests are formed with reference to and in the context of international norms and not independently of them (see above).

The argument that supports the equivalence of sovereign states and individuals for purposes of their role as game players stems from the work of Marvin Minsky of MIT, who is a pioneer in the field of the development of artificial intelligence and the author of numerous books on the subject. In one of his books, *The Society of Mind*, he outlines how Seymour Papert discovered in the 1960's that the human mind develops by acquiring new administrative ways to use what it already knows. Minsky indicates that these new methods are facilitated by administrative agents which are analogous to a bureaucratic organisation in the "society of mind" that constitutes human consciousness. These administrative agents are structured in a bureaucratic hierarchy with "middle managers" that sort out the conflicting concepts generated by lower order concepts. Minsky justifies this rather baroque and maybe even Kafka-esque system as follows:

You might complain that even if we needed these hordes of lower-level agencies to make comparisons, this system has too many middle-level managers. But those mountains of bureaucracy are more than worth their cost. Each higher-level agent embodies a form of "higher order" knowledge that helps us organise ourselves by telling us when and how to use the things we know. Without a many-layered management, we couldn't use the knowledge in our lower level agencies; they'd all keep getting in one another's way.¹⁸

Minsky goes on in his book – and also in his recent 2006 work, *The Emotion Machine*¹⁹ – to describe how this same form of hierarchical bureaucratic organisation facilitates cognitive functions in adults, including complex and subtle processes such as determining context, ambiguity and analogies.

Interestingly enough, Berman points to the operation of bureaucracies in sovereign states as a reason why Goldsmith and Posner's game theoretic model of the PD cannot apply to those states. Berman argues that it is a gross oversimplification to suggest that states have the same unitary personality with a single set of interests as individuals do, and therefore the PD game theoretic model fails on the grounds that

¹⁷ K Anderson, "Remarks by an Idealist on the Realism of The Limits of International Law" (2006) 34 *Georgia Journal of International and Comparative Law*, 253-284, at 270

¹⁸ M Minsky, *The Society Of Mind* (New York: Simon & Schuster, 1986), at 103.

¹⁹ M Minsky, *The Emotion Machine: Commonsense Thinking, Artificial Intelligence, and the Future of the Human Mind* (New York: Simon & Schuster, 2006).

states cannot be expected to act in the same manner and with the same types of motivations as individuals would when playing the PD game. In a somewhat eerie, unintended echo of Minsky's society of mind concept, Berman says:

But, of course, the real world is far more messy, with a vast number of constituencies both within the governmental bureaucracy and outside it. This cacophony of voices is important because it challenges the seductive simplicity of the vision offered by Goldsmith and Posner and because many of these voices, when advocating policy positions, can use the moral authority or persuasive power of international law norms for leverage.²⁰

Therefore, both the human mind and the sovereign state both deal with the "cacophony of voices" problem by instituting bureaucratic hierarchies to resolve conflicts amongst competing interests. In the case of the sovereign state, according to Berman and members of the constructivist school generally, international law and norms can effectively act as an über-level administrative agent to assist in the sorting out of competing priorities within the state itself without directly impinging on the sovereign independence of the state. Berman gives the example of the Bush administration issuing a directive that state courts should comply with the International Court of Justice decision concerning the Vienna Convention on Diplomatic Relations, in the *Avena*²¹ case.

In any event, as noted previously, the VW game theoretic model is a normative rather than a descriptive model and therefore the criticism that it is a gross simplification to argue that sovereign states and individuals are analogous from the point of the view of the rational game player notion does not have much relevance to the VW game theoretic model of international law. As an additional defence for the VW game theoretic model, however, we can argue that the sovereign state and the individual both operate in a similar manner in dealing with the management of the "cacophony of voices" heard within them.

Another important line of criticism of the PD game theoretic model is based on the argument by Lawrence Helfer that by limiting the choices in the PD to the binary one of cooperate or defect when analysing international relations, without regard for the third option of exit (i.e. treaty withdrawal and denunciation), scholars have collapsed the distinction between breach of treaty obligations and treaty withdrawal.²² Helfer points out that there are several important distinctions between exit and breach: 1 - treaty membership and voice (a state that withdraws from a treaty no longer has a right to participate in the mechanisms of voice that the treaty establishes, both with regards to current and future law-making); 2 - intra-treaty sanctions (a state that withdraws can do so without such sanctions whereas a state that breaches a treaty may legally be the subject of retaliation pursuant to the terms of the treaty); 3 - extra-treaty sanctions (a state that withdraws may suffer extra-treaty sanctions but these are often difficult to impose in practice, even by a powerful hegemon such as the US); and 4 - reputational consequences (a state that withdraws often suffers less reputational

²⁰ Berman, see note 10 above, at 1296.

²¹ *Avena and other Mexican Nationals (Mexico v United States)*, [2004] ICJ Rep 128.

²² Helfer, see note 6 above, at 1612.

damage than a state that breaches a treaty, except where the withdrawal is characterised as opportunistic e.g. a country withdrawing from the Non-Proliferation Treaty as soon as it is about to switch from peaceful to military uses of its nuclear technology).

Helfer points out that, since there are important differences between the consequences of breach and exit, scholars using game theory to model international relations issues should introduce the concept of exit into the choices available to the players in the PD. He points out that one such experiment was actually done with a variation of the PD, but without reference to the international law analogy.²³ The designers of that experiment had actually predicted that cooperators, who receive lower rewards than defectors in the PD game, would choose the exit option more than defectors. This prediction was not, however, borne out by the experiment's results which were that more defectors than cooperators chose to exit the game. This result was plausibly explained by the fact that the cooperators had an "ethical or group-regarding impulse" that led them not to act solely on the basis of "dollar rationality". Helfer then proceeds to examine several problems associated with treaty exit in the context of game theory and concludes that the right of exit may actually enhance inter-state cooperation in the long run, through allowing parties to advocate for a new consensus point – or to initially enter into deeper commitments than they might have otherwise without the availability of a right of exit.²⁴ The conclusion to be drawn from Helfer's analysis then is that, when the PD is modified to include the right of exit in order to more closely approximate the realities of international law, this modified model tends to support the constructivist school rather than Goldsmith and Posner's rationalist school. Although this modification of the PD makes it a better analogy for the realities of international law, it does, however, seem to unduly distort the PD model in terms of its basic premise. In an actual situation involving two prisoners, simply unilaterally exiting from the situation creating the dilemma would not normally be an option; suicide, escape or other *deus ex machina* types of solutions would obviously be highly abnormal or rare. The analogy also breaks down if one attempts to consider the exit issue as a separate option in the context of any agreement made between the two prisoners, since unilateral exit from and breach of that agreement would both produce the same result as defection, i.e. release, and would therefore be essentially indistinguishable.

Part 4 of this paper will describe how one of the fundamental problems of BITs is that they have very lengthy terms (usually at least 10 years) and generally do not have a right of exit prior to the end of their prescribed term. The similar lack of an exit option in the classical PD not only makes it descriptively unsuitable for understanding treaties, such as the Nuclear Non-Proliferation Treaty, where there is a right of exit or denunciation, but it also makes it **normatively** unsuitable for analysing BITs – in particular in the sense that it does not shed any light on how BITs could be improved by introducing a right of exit.

As noted above, in the classic two-person PD, the players are not permitted to communicate with each other and if they have managed to make any agreements prior to the game or were able to secretly communicate or signal each other during the

²³ *Ibid*, at 1629.

²⁴ *Ibid*, at 1630.

game, any promises made between them are unenforceable. BITs, on the other hand are of course enforceable through arbitration. Does this mean that the PD is useful from a normative perspective in understanding how BITs may be improved by limiting or even totally removing their enforceability? Part 5 of this paper will state that the virtual world game theoretic model indicates that the scope of what is enforceable should be circumscribed, but this paper does not assume that BITs would be improved by being totally unenforceable. Such a complete lack of enforceability would negate the BIT's usefulness in terms of resolving the "dynamic inconsistency"²⁵ problem concerning promises made by states to investors which may otherwise easily be breached due to changes in circumstances. Therefore, the PD has neither normative nor descriptive value for BITs in terms of the issue of enforceability.

Is it possible, however, for the PD to have some application to BITs in contexts where the enforceability of the treaty is not a direct issue? Could such situations include, for example, the process of negotiating and entering into BITs in the first place, or the interpretation of provisions in the BIT where they are unclear and it is not just a straightforward matter of their enforcement? There have been some creative attempts by academics along these lines. Anne van Aaken has expressed the notion that foreign investors may themselves be subject to a collective action problem that constitutes a multiple player PD.²⁶ Van Aaken notes that an investor, in determining whether to request an arbitrator to make a progressive interpretation of a BIT provision, runs the risk that such an interpretation may make developing countries in the future less inclined to make "hard law" promises when negotiating BITs. According to van Aaken, the investor has to decide whether to defect (obtaining the short-term gain of successful litigation) or cooperate with other investors (minimising the possibility of a backlash from developing countries when it comes time to re-negotiate their BITs). There is, however, the problem that, when an investor wins its case, other investors whether in the same country as the litigant or even in other countries with similar BIT provisions, potentially benefit on a short-term basis as well. This is due to the fact that, although BIT arbitration decisions are not binding precedents, they do have persuasive value in other cases. In such a situation, the difficulty with applying the PD model is that the act of defection is considered in the model to be a unilateral act that benefits solely the defector. Where, as in van Aaken's example, the act of defection benefits other players as well, then the revealing member versus group dynamics of the PD collective action problem are lost.

Another notable, creative attempt to circumvent the problem of lack of applicability of the PD model to BITs is Andrew Guzman's explanation for the rapid proliferation of BITs, starting in the 1970s, while developing countries were, paradoxically, publicly voicing support for sovereign rights.²⁷ Many of these developing countries voted for UN General Assembly Resolution 1803 in 1963 and Resolution 3171 in 1973, effectively abolishing the "Hull Rule" – a principle of customary international law that had required prompt, adequate and effective compensation for expropriated

²⁵ A Guzman, "Why LDCs Sign Treaties That Hurt Them: Explaining the Popularity of Bilateral Investment Treaties" (1997) 38 *Virginia Journal of International Law*, 640-688, at 658

²⁶ A van Aaken, "Perils of Success? The Case of International Investment Protection" (2008) 9 *European Business Organization Law Review*, 1-27, at 17 (available at: <http://ssrn.com/abstract=1020959> (accessed 25 Jan 09)).

²⁷ Guzman, see note 25 above.

foreign investments. The Hull Rule was thus superseded by the “Calvo Doctrine”, which provided that compensation should be determined in accordance with the laws of the host state. Guzman suggests that this represented a classic example of a multiple-player PD model, where the developing countries' public support for sovereign rights was basically “cheap talk” of an unenforceable nature, while they were pitted against each other in a competition for foreign investment. As a result, one by one, they defected and signed BITs, in numbers that began to increase exponentially in the 1990's. According to Guzman, it is a paradigmatic example of a collective action problem.

On its face, Guzman's argument seems very compelling, since it explains both the apparently paradoxical behaviour of developing countries in signing the UN Resolutions effectively abolishing the Hull Rule and then proceeding to sign BITs in increasing numbers. It illustrates in general terms the role of “cheap talk” in a collective action problem where the players are competing against each other. Guzman's theory does not, however, hold up completely when one examines the timeframes involved. The period over which the two key UN Resolutions were drafted, debated, voted on and passed was from the early 1960's to 1973. If the “cheap talk” scenario that Guzman is suggesting is accurate, then one would expect the growth of BITs to be very rapid in the 10 year period following 1973 as developing countries which had secretly been in discussions with developed countries began to reveal their true intentions, and the whole collective deception began to unravel. The facts indicate otherwise. The number of BITs did not begin to increase at an exponential rate until about 1990. At that point, the “knee” of the typical exponential curve was reached and from there until the present, the number of BITs increased dramatically, reaching about 2600 today. How, then, does one explain this delayed reaction? A plausible explanation is offered by Ryan J Bubb and Susan Rose-Ackerman, who suggest that during the 1960's and 1970's, many developing countries were in a post-colonial period during which they felt compelled to expropriate foreign investments, particularly in Latin America. Once they had extracted all the value that they reasonably could from these investments, they then decided to “make a clean break with the past and make a credible newfound commitment to protecting the property of foreign investors.”²⁸ This is contrary to Guzman's theory of a multiple-player developing countries PD game, based on a collective action problem. In fact, it suggests that the developing countries may have actually effectively coordinated their efforts, both when they were extracting value from foreign investments in the post-colonial period, and when they were responsible for the rapid increase in BITs – causing the “knee” of the resulting exponential curve to be the demarcation point for a new era of foreign investment. If not a case of coordination, then it is at the very least one of coincidence of interests, rather than a PD collective action problem.

There is also the issue of imbalance of power. The PD is based on an assumption that the power of the players is relatively equal, and that they are all actors whose decisions are made in the absence of any form of coercion. On the other hand, BITs are often signed between developed countries and developing countries in situations

²⁸ R Bubb and S Rose-Ackerman, “BITS and bargains: Strategic aspects of bilateral and multilateral regulation of foreign investment” (2007) 27 *International Review of Law and Economics*, 291-311, at 306.

where there is an imbalance of power. The United Nations Conference on Trade and Development (UNCTAD) World Investment Report 2008 notes that there has been a recent increase in the number of BITS between developing countries as opposed to between developing countries and developed countries. As of the end of 2005, approximately 10% of the total number of BITS concluded was between developing countries. As of the end of 2007, this number increased to 27%. Much of this increase is, however, attributable to newly emerging economic powers such as China and India. These countries are technically still considered as developing, despite the fact that both have advanced technological infrastructure such as active space programs. For example, China signed nine BITS between 2003 and 2007 with African countries, including Tunisia and Uganda. There was very likely a power imbalance at play between China and these African nations during the respective BIT negotiations, equivalent to the power imbalance that existed between the United States and various Latin American countries during BIT negotiations. One potentially contrary statistic from the point of view of the power imbalance issue is the growing number of BITS between developed countries. In 1997, there were no BITS between developed countries. As of the end of 2007, the UNCTAD report shows that 9% of the total number of BITS are between developed countries.²⁹ This increase in the last 10 years of the number of BITS signed between developed countries would indicate that there may be a trend towards less of a power imbalance in a substantial number of BITS. Nonetheless, the majority of BITS are between parties where there is an imbalance of negotiating power.

This paper has therefore shown that the PD model does not assist in understanding BITS, whether one views them in the context of investor-investor, host state-host state, or investor-host state and whether one considers the model as one-shot or iterated, either with two players or multiple players. Robert Axelrod has stated that "[t]he two-person iterated Prisoner's Dilemma is the E coli of the social sciences."³⁰ This is an apt metaphor in the limited context that Axelrod uses, since E coli is a simple, easily re-engineered bacterium that often serves as a laboratory model for biological analysis and experiments. E coli has also been used to manufacture valuable substances such as insulin and various recombinant proteins by manipulating its genetic structure. Similarly, the structure of the basic PD model has been tweaked by academics in an attempt to apply it to BITS and international law generally. Although the modification of E coli in the lab has produced some valuable products, the tweaking of the two-person iterated PD to create multiple-party models, to add an exit option, or as we see in the next part of this paper to make it continuous, does not lead to improved analysis of international law generally, or BITS in particular. At this point, before moving on to a discussion of the game theoretical framework potentially supplied by virtual worlds, the next part of the paper will discuss an alternative game theoretic model, which is the one offered by network theory.

3. Network Theory as a Potential Alternative

Guzman's notion that the rapid growth of BITS was due to a collective action problem in a multiple-party PD has also been criticised from the point of view of network

²⁹ UNCTAD, see note 2 above, at 16.

³⁰ R Axelrod, *The Complexity of Cooperation* (Princeton: Princeton University Press, 1997), at ii.

theory, which is a discipline derived from applied mathematics and graph theory that focuses on asymmetric relationships between discrete entities. In a recent paper, Santiago Montt argues that the PD is not a suitable model for BITs in two respects: 1) the BIT "game" had a sequential/evolutionary nature, in that various countries have been opting in and out of the BIT system since 1959; and 2) the BIT system contains positive network effects arising from a system of treaties which contain similar provisions.³¹ Although Montt's criticisms of Guzman's theory concerning the growth of BITs contain several flaws, Montt's notion is valuable from the point of view of building a bridge from the discussion of the PD game theoretic model to the discussion of the virtual worlds (VW) model.

Montt's first criticism of Guzman's PD model of the proliferation of BITs is that the process has had a sequential or evolutionary quality and is therefore not adequately represented by the PD game, which in its classical form is either one-shot or iterative, rather than continuous. Montt does not mention that biologists modelling the evolution of cooperative systems in nature, where there is usually partial – rather than complete – cooperation and the process is ongoing rather than iterative, have arrived at a version of the PD which they call the "continuous PD" in order to better represent their data.³² These biologists have run computer simulations of this continuous PD game, using a spatially structured host where contiguous agents are observed to evolve cooperative strategies. As with the engrafting of the exit option onto the PD in the context of attempts to use it to model treaties, however, the conversion of the iterated PD into a continuous version unduly distorts the original purpose of the model. If the game is a continuous, rather than a one-shot or iterated one, and can involve partial cooperation or mixed cooperation and defection – rather than the simple binary choice between cooperation and defection – the essential dilemma aspect of the PD is lost.

Montt's second criticism of Guzman's theory of BITs is, however, less on the mark than the first one. This second criticism forms the basis of Montt's theory, which is that the rapid proliferation of BITs in the 1990's was not due to a multiple-player PD collective action problem but rather due to network effects from economies of scale and interpretative efficiencies arising from the fact that BITs are worded "in more or less the same terms" and use all use a common "specific investment law vocabulary".³³ At first blush this theory seems appealing, since network effects of this type have often been a motivation for parties to adopt sub-optimal systems such as the QWERTY keyboard or the VHS format instead of Beta in the early 1980's. Montt's assumptions and reasoning are not, however, borne out by the facts. The extent of litigation involving BITs has been increasing dramatically; that is, from a cumulative total of only about 30 in 1997 to a cumulative total of about 260 as of 2006. In 1997,

³¹ S Montt, "The BIT Generation's Emergence as a Collective Action Problem: Prisoner's Dilemma or Network Effects?" (2007) *Latin American and Caribbean Law and Economics Association (ALACDE) Annual Papers (UC, Berkeley)* available at <http://repositories.cdlib.org/bple/alacde/043007-3>. (accessed 25 Jan 09).

³² T Killingback, M Doebeli and N Knowlton, "Variable investment, the Continuous Prisoner's Dilemma, and the Origin of Cooperation" (1999) 266 *Proceedings of the Royal Society of London*, 1723-1728.

³³ Montt, see note 31 above, at 2.

there were about 1500 BITs in total and in 2006, there were about 2500.³⁴ This means that in 1997, about 2% of the total number of BITs signed resulted in litigation, whereas by 2006, this percentage had increased five-fold to over 10%. If the network efficiency effects from common provisions in BITs were evident, as Montt claims, then one would expect to see a decrease in the proportion of BITs that spawned litigation over the ten year period involved, rather than such a large increase.

There is considerable evidence that not only do the "standard" clauses vary considerably among BITs, but the interpretations of the often vague regularly recurring terms such as "fair and equitable treatment" and flexible concepts such as indirect or "creeping" expropriation are interpreted inconsistently by arbitral tribunals.³⁵ This is compounded by the fact that BITs are usually written in two or three different languages, which can lead some of the smaller developing countries, with limited legal resources at their disposal, to misunderstand the intent of even relatively well-established legal terminology. There is also the lack of a single forum for arbitrating BITs and an absence of any form of appellate or review body to eliminate inconsistencies in the arbitral decisions. Most-favoured nation (MFN) provisions provide only limited consistency in the sense of effectively transplanting provisions between agreements, since they are not present in all BITs; the scope of their application is not absolutely clear;³⁶ and they are of little use where the substantive provision to which they are being applied is itself the subject of different interpretations.

The arbitrators, who are appointed on an *ad hoc* basis and remunerated by the litigants, often act in various related capacities, including advocate and adviser in other BIT cases. This casts a pall on their arbitral independence – both perceived and actual – which is highly problematic in this field due to its public law aspect. Arbitration processes in BITs are based on a commercial arbitration model, so that there is a presumption of confidentiality, which means that access to pleadings and evidence is very restricted for non-parties, and *amicus curiae* participation is nominal. All of these factors severely curtail and limit any network effect advantages that would otherwise accrue through the rapid proliferation of BITs in the 1990's.

The network effects model does, however, have some normative (as opposed to descriptive) value for understanding how BITs should be improved, in that an ideal system would enjoy all of the seamless efficiencies of consistency and economies of scale that are typical of networks in the absence of transaction costs. What the next part of this paper will do is to build upon network theory in its normative aspect to create a new network game theoretic model of BITs, using virtual worlds (VWs) as the paradigm.

³⁴ UNCTAD, see note 2 above, at 17.

³⁵ K Connolly, "Say What You Mean: Improved Drafting Resources as a Means for Increasing the Consistency of Interpretation of Bilateral Investment Treaties" (2007) 40 *Vanderbilt Journal of Transnational Law*, 1579-1609, at 1588.

³⁶ See note 59 below.

4. BITS and Bytes - Virtual Worlds as a Game Theoretic Model

Game theory has been extensively utilised to study international law and relations, mostly in the context of the PD, as well as in the context of the coordination games (such as Jean-Jacques Rousseau's Stag Hunt), which do not assist in understanding BITS any more than the PD does, since both types contain the assumption that the promises between the players are unenforceable.³⁷ One reason for the close connection between game theory and international relations is the common link that both have to the tradition of chivalry. JHH Weiler stated that: “[i]ndeed, in our view, the transactional mode of international law in its early historical context owed its deepest roots and claim to legitimacy to the pre-state chivalrous world of feudalism.”³⁸ He further notes that this connection to the tradition of chivalry is what supports the doctrine of *pacta sunt servanda* and also the doctrines of comity and sovereign equality. The basis of the latter in the chivalric tradition where only peers (i.e. fellow knights) are legitimate targets for force is something that, as Weiler perceptively indicates, contains a paradoxical element in that it allows states to justify war against and subjugation of other states, on the basis of the fiction of equality. The chivalric tradition upon which sovereign equality is based is also used by hegemonic powers to justify the Hobson’s choice that passes for consent where small, developing countries are being asked to agree to treaty provisions that in effect amount to standard form contracts issued by a monopoly. The connection between chivalry and international law was also noted by the German scholar Johan Huizinga in his seminal 1938 book on the role of play in society, *Homo Ludens*, where he stated:

*Even if it were no more than a fiction, these fancies of war as a noble game of honour and virtue have still played an important part in developing civilization, for it is from them that the idea of chivalry sprang and hence, ultimately, of international law. Of these two factors, chivalry was one of the great stimulants of mediaeval civilization, and however constantly the ideal was belied in reality it served as a basis for international law, which is one of the indispensable safeguards for the community of mankind.*³⁹

According to Huizinga’s and Weiler’s analyses, chivalry was instrumental in tying together the loose collections of feudal fiefdoms during the mediaeval period, and was therefore the precursor and foundation for the international law that necessarily emerged as these fiefdoms developed into independent, sovereign states.

VWs, especially role-playing ones such as WoW, EverQuest and Ultima Online, also enjoy a multi-layered connection to the tradition of chivalry. At merely a superficial level, these VWs’ notion of the heroic quest, jousting or duelling challenges between peers, and the acquiring of skills through lengthy apprenticeship all resemble, of course, staples of the feudal system that was based on chivalry. At a more conceptual

³⁷ R McAdams, "Beyond the Prisoner's Dilemma: Coordination, Game Theory and the Law" (2008) *John M Olin Law & Economics Working Paper No 437* (2d series) available at <http://ssrn.com/abstract=1287846> (accessed 25 Jan 09).

³⁸ J Weiler, “The Geology of International Law – Governance, Democracy and Legitimacy” (2004) 64 *Heidelberg Journal of International Law*, 547-562, at 555.

³⁹ J Huizinga, *Homo Ludens* (London: Beacon, 1955), at 208.

level, the chivalric tradition is evident in the “software code is the law” method of control implemented by VW developers.⁴⁰ Under this system, players’ behaviour is curtailed by the simple expedient of programming the software code of the game to make it impossible for them to perform certain undesirable activities, much in the same way that in mediaeval society the cultural software⁴¹ of the feudal system made it impossible in practical terms for persons to deviate from the path that was pre-determined for them. For example, a character in WoW below level 40 cannot own a fine mount because the software code does not allow him to do so, in the same manner that a peasant in mediaeval France could not do so because of the rigid cultural software coded into the fabric of feudal society. High-level characters in WoW are equivalent to the knights errant in the feudal system, both being subject to codes of honourable conduct that largely depend for their enforcement on the imbibing and absorption of cultural norms. In the context of a social, non-role-playing VW such as SL, which is more open and flexible in terms of permissible player behaviour, the connection with the chivalric tradition is evident in the hacker culture and the open-source movement which has led the owners of SL to make their source code available to the players for collective tinkering and improvement. In the SL example, the notion of chivalry forms the basis for effective mass collaboration based on honourable combat in the same manner that Linux software is constantly improved – the software programmer as geeky hacker/knight errant.

The chivalric, status-based roots of international law create an equivalence between individuals in VWs and RW sovereign nations, particularly second-tier ones, in the sense that both are equally disempowered by the patriarchal process of signing onto non-negotiable agreements: the End-User Licensing Agreement (EULA) which contains the game developer’s Terms of Service (TOS) in the former case and the multi-lateral treaty in the latter. This status-based equivalence between developing countries, sovereign nations and individuals parallels and reinforces the procedural similarities concerning the methods by which both entities manage the “cacophony of voices” problem. As this paper will discuss later, it also gives support to the potential normative effect of the VW game theoretic network model in terms of creating pressures to change the content and application of the provisions of BITs.

In terms of structural comparisons between current VWs and BITs, the first issue is that of the process of entry into the treaty. For capital-importing countries outside of the “Fêted Inner Core”⁴² of developed countries, the question of accession to the treaty is mostly a take-it-or-leave-it proposition, based on the “model” text, although an empirical study has shown that the capital-importing country tends to determine the timing of the actual signing of the agreement.⁴³ JHH Weiler describes the situation very aptly when he compares the situation of such countries with that of ordinary consumers of software products:

⁴⁰ L Lessig, *Code: And Other Laws of Cyberspace Version 2.0* (New York: Basic Books, 2006), at ch 1.

⁴¹ J Balkin, *Cultural Software: A Theory of Ideology* (New Haven: Yale Univ Press, 1998).

⁴² This term was coined by an avatar in Second Life named Prokofy Neva.

⁴³ Z Elkins, A Guzman and B Simmons, "Competing for Capital: The Diffusion of Bilateral Investment Treaties, 1960-2000," (2005) 31 *American Law & Economics Association Annual Meetings*, at 36 (available at: <http://ssrn.com/abstract=1287846> (accessed 25 Jan 09)).

*The consent given by these “sovereign” states is not much different to the consent that each of us gives, when we upgrade the operating system of our computer and blithely click on the “I Agree” button on the Microsoft Terms and Conditions. One cannot afford to be out and one cannot afford to leave. The legitimation that comes from sovereignty is increasingly untenable.*⁴⁴

Treaties signed by developing countries are often subject to very little, if any, democratic scrutiny by the governments of the signatory state. Weiler continues the contract of adhesion analogy when he notes that treaties in these circumstances are “the equivalent of Standard Form Contract given the legitimacy and force of a legislative act approved by a parliament without, however, that parliament ever reading its actual content.”⁴⁵ Weiler also notes that individuals, particularly under international human rights law, are treated in a similarly disempowering, patronising, pre-modern way, in that the individual is viewed as an object on which to bestow rights, rather than as an agent of change. The chivalric, status-based roots of international law show through under this analysis, both for less powerful nations and for individuals. Inhabitants of VWs are also generally treated by their developers as objects on which to bestow rights, rather than as agents of change. As indicated previously, the preferred mode of control used by VW developers is the “software code as law” approach which echoes the extremely rigid status-based cultural software of the mediaeval era.

In terms of exit rights, BITs often contain restrictive provisions prohibiting exit for a lengthy period after it is entered into by the parties in order to prevent opportunistic exit by host countries wishing to expropriate assets after an investment is made. Accordingly, many BITs ban withdrawal or denunciation for a period of ten years after the treaty enters into force and stipulate that investor protections remain in force for a further lengthy period for previously invested assets. For example, the 2004 model BIT that the US uses as the template for “negotiating” BITs with dozens of developing countries provides that neither party can terminate the treaty during its ten year initial term and that “[f]or ten years from the date of termination, all other Articles shall continue to apply to covered investments established or acquired prior to the date of termination.”⁴⁶ Given the long period that must expire before a state can ever withdraw from a BIT, governmental inertia may produce a *de facto* lack of an ability to withdraw at all, although a few Latin American states, such as Bolivia, Ecuador and Venezuela have recently done so or threatened to do so.

Inhabitants/players of VWs are somewhat similarly situated in the sense that, although the EULA is typically terminable by the player at will on a month’s notice, the theoretical right of exit from such worlds is often of little practical meaning, given that many of these individuals, after hundreds or even thousands of hours of play, would have built up extensive networks of friends in such spaces, and have

⁴⁴ Weiler, see note 38 above, at 557.

⁴⁵ *Ibid.*, at 555.

⁴⁶ *US 2004 Model Bilateral Investment Treaty*, art. 22 (available at <http://www.state.gov/documents/organization/38710.pdf> (accessed 25 Jan 09)).

accumulated valuable collections of virtual assets that are often not convertible into RW currency under the developer's TOS. Faced with the Hobson's choice of either abandoning all of their virtual friends and assets, or putting up with the draconian rules of the VW developer, the player is likely to be forced to find a way to circumvent the rules. According to Professor Peter Ludlow of the University of Toronto and Mark Wallace in their recent book, *The Second Life Herald*, the right of exit is just one of three possible options:

Players of MMOs [massively multiple online games] have also consistently managed to find their way around the de facto governments that run their worlds – the platform owners. The protests that took place in EverQuest and Second Life are evidence that when enough players and residents of virtual worlds are unsatisfied with the way those worlds are run, they manage to find a way to make changes. Most often, they resort to one of two courses of action: They pick up and leave, or they find a way to circumvent the “laws.” But every now and again, they manage to force a change in the laws.⁴⁷

Thus, we see that there are three possible responses of VW players to the perceived draconian nature of various in-world rules or laws: 1) exit; 2) civil disobedience (grey or black market activity, cheating etc); or 3) effecting change through lobbying and/or protest activity. Some inhabitants of VWs such as WoW, which prohibits the conversion of players' accumulated virtual assets into RW currency, known as real money trading (RMT), are likely to view the exit option as not a feasible one. This view may be especially prominent where the player is concerned about the potential danger of civil liability in a lawsuit by a plaintiff anti-RMT player claiming third party beneficiary status vis-à-vis the EULA contract entered into by the game developer and the player engaging in RMT for the purposes of exiting the game. Such a lawsuit was before the courts in the *Hernandez v IGE* case,⁴⁸ which was a class action lawsuit (recently settled) by a group of WoW players alleging that the buying and selling of virtual assets, including game currency, virtual weapons and armour, and even fully-equipped, top-level avatars, for RW currency, dilutes the quality of the game experience for players who wish to dutifully make their way to the top level through hundreds or thousands of hours of game play in accordance with the rules of the game (sometimes pejoratively referred to as “grinding”). In other “open” worlds, such as Second Life and Star Wars Galaxies, where RMT is allowed and even encouraged, the exit option may be more feasible for players than in WoW, but there is still the remaining problem of the loss of social networks due to the lack of interoperability between the various VWs.

Therefore, for VW players, the right of exit is often for practical purposes of somewhat more use than it is for developing country parties to BITs, and in addition VW players tend to have some additional options that are not necessarily as generally available to developing country BIT parties, such as civil disobedience/cheating and rule changes. Cheating in a BIT is not possible in the same way that it is in a Nuclear

⁴⁷ P Ludlow and M Wallace, *The Second Life Herald: The Virtual Tabloid that Witnessed the Dawn of the Metaverse* (Cambridge: MIT Press, 2007), at 177.

⁴⁸ *Hernandez v IGE US LLC* (US Dist Crt S Florida) Aug 17, 2007 No 07-21403.

Non-Proliferation Treaty or a Biological Weapons Treaty. A developing country simply cannot covertly expropriate a business in which a foreign multi-national has invested. Furthermore, BITs are not generally the subject of mid-term renegotiations at the behest of the developing countries. One relatively recent example of a renegotiation at the request of a developing country, Uruguay, occurred only because Uruguay's new left-leaning government refused to ratify the agreement concluded by its predecessor and the US agreed to modification of some of the terms in order to encourage ratification by the new government. In most cases, however, the mobility of capital means that if any mid-term, post-ratification renegotiation occurs, it is at the behest of the developed country and the developing country does not have a large amount of bargaining power in the matter.

Mid-term renegotiation obviously becomes extremely unattainable in the context of a multilateral investment agreement. Between 1995 and 1998, members of the Organisation for Economic Cooperation and Development (OECD), which consists of capital exporting countries such as the US, UK, France, Germany and Canada, negotiated and agreed to the Multilateral Agreement on Investment (MAI) which had the aim of creating more uniformity in the way international investment law was applied among states. The MAI was ultimately rejected due to extensive lobbying and criticism by developing countries and NGOs which feared that it would further erode national sovereignty. More recently, in 2003, at the WTO's ministerial conference in Cancún, a proposal to re-start negotiations on a multilateral investment agreement framework was quickly rejected by the developing countries, despite the fact that many of them had already agreed to BITs containing provisions that were as least as onerous as the original OECD MAI proposals.

Some scholars are pessimistic at this point about the chances of a multilateral investment agreement being reached in the foreseeable future.⁴⁹ The current economic crisis will mean greater competition for a shrinking pool of available FDI – particularly in the extractive resource industries (due to declining commodity prices and tighter lending policies). UNCTAD estimates that the decline from 2007 to 2008 in FDI inflows to developing countries is about 40%.⁵⁰ Would this lead to a scenario in which a new multiple-player PD collective action problem would arise whereby capital-exporting countries would attempt to coerce the developing countries, increasingly desperate for FDI, to defect from the BIT system and join a new multilateral system with enhanced protections for investors? This is certainly possible, but it may be unlikely given the opposition from NGOs and public interest groups to the MAI in the 1990's, which was much more vehement than the developing countries' objections to the Hull Rule in the early 1970's.

What is more likely is a scenario akin to the concept of the development of interoperability amongst previously siloed, disparate communications networks, such as AT&T's telephone network in 1913,⁵¹ and CompuServe's proprietary e-mail system

⁴⁹ G Van Harten, *Investment Treaty Arbitration and Public Law* (Oxford: OUP, 2007), at 180; K Connolly, see note 35 above, at 1604.

⁵⁰ UNCTAD, *World Economic Situation and Prospects 2009* at 69 (available at http://www.unctad.org/en/docs/wesp2009_en.pdf (accessed 25 Jan 09)).

⁵¹ C Sterling, P Brant and M Weiss, *Shaping American Telecommunications: A History of Technology, Policy & Economics* (New York: Routledge, 2006), at 80.

in 1989. Efforts are underway to make VWs interoperable through the IBM/Second Life Open Sim project. If successful, this would enable individuals to transport or teleport their avatars from Second Life to another social VW such as There or even to a role-playing VW such as World of Warcraft.⁵² It remains to be seen whether this project will bear fruit. If it does, VW interoperability could provide a normative model for BITs.

Interoperability is a term that is primarily used by engineers and has been defined as "the ability of two or more systems or components to exchange information and to use the information that has been exchanged."⁵³ When a developing country signs a BIT, it does so primarily for the purpose of signalling to potential investors that it should be considered to have a reputation as a safe place to invest. As a reputation-signalling network, BITs would thus function on a collective basis more efficiently if the various discrete components (i.e. the different model BITs of capital exporting countries), are interoperable. What would this interoperability entail in terms of BITs? As part 3 of this paper states, BITs are problematic as a cohesive network for many reasons, including differences in key terminology in the various model BITs, inconsistent interpretations by arbitrators where the terms are identical or equivalent, and a lack of transparency. Although the possibility of a multilateral treaty with uniform provisions is unlikely, concerns about inconsistent interpretations and a lack of transparency could be remedied by replacing the current *ad hoc* BIT arbitration system with a permanent, independent body such as an International Investment Court, the decisions of which would be enforceable in the same manner as decisions of arbitrators currently appointed under BITs.⁵⁴

If BITs are made interoperable through consistent precedent-setting decisions by a permanent, independent adjudicative body, then investors would not be able to exploit alleged fears concerning interpretational uncertainties to demand additional concessions from host states, and the possibility of a collective action problem would be reduced. Developing countries, as a group, are thus more likely to have greater bargaining power with investors to resist BIT concessions through the potential right to transfer some of their reputational capital from one country's model BIT regime to that of another. If VW interoperability becomes a reality, then hundreds of millions of individuals will become accustomed to freely conveying the reputational capital associated with their avatars from one VW to another. This will create a normative model for similar interoperability in the BIT network, since the role of reputation is central in both BITs and VWs. The reputational advantages flowing from a BIT that a host country signs are similar to those associated with the creation of a person's avatar in a VW. A country with a perceived or actual history of corruption may have signed the BIT in order to signal a different reputation and to consciously bind itself to a new standard of behaviour (e.g. the "clean break with the past" referred to by Bubb and Rose-Ackerman in connection with the explosion of BITs in the 1990's).⁵⁵

⁵² "Architecture Working Group Wiki" available at: http://wiki.secondlife.com/wiki/Architecture_Working_Group (accessed 25 Jan 09).

⁵³ Institute of Electrical and Electronics Engineers, *IEEE Standard Computer Dictionary: A Compilation of IEEE Standard Computer Glossaries*, (New York: 1991).

⁵⁴ Van Harten, see note 49 above, at 180.

⁵⁵ Elkins, see note 43 above, at 31; Bubb, see note 28 above.

Similarly, VWs are often seen as enabling individuals to reinvent themselves through their avatars.

In the next section, this paper will proceed to a discussion of one of the most contentious issues with BITs, which is the effect of their arbitration decisions on the domestic law of the parties. In doing so, the paper will examine how VWs as a game theoretic model can highlight the problems with this and also how they could potentially provide a rallying point for change to this aspect of BITs.

5. BIT arbitrations as global administrative law – parallels with VWs and the erosion of domestic RW law

In their insightful paper, “Investment Treaty Arbitration as a Species of Global Administrative Law”,⁵⁶ Gus Van Harten and Martin Loughlin argue that arbitration pursuant to BITs constitutes a unique, emerging and powerful form of global administrative law whereby the exercise of public power by sovereign states is subject to the review of arbitral panels appointed pursuant to the terms of these treaties. In this respect, there is a parallel issue with the EULA between a VW game developer and the players who inhabit that VW, since it is notable that the terms of the EULA in many respects seek to displace the provisions of the domestic law that the player would probably otherwise be governed by (e.g. personal property rights, freedom of speech, intellectual property, and employment laws). Furthermore, EULAs like BITS, have compulsory arbitration provisions that purport to oust the jurisdiction of the courts. In one landmark case involving a compulsory arbitration clause in *Second Life*, *Bragg v Linden Research Inc.*,⁵⁷ the US District Court held that the clause was unenforceable on the grounds of procedural unconscionability, because it was a contract of adhesion with a lack of mutuality, adverse forum selection and costs provisions, and a confidentiality clause that, taken together, meant that Linden Research, the owner of *Second Life*, was attempting to insulate itself from any meaningful challenge to its accepted practices. Interestingly enough, the fact that Bragg, the plaintiff in the case, was an experienced attorney did not deter the court from declaring the arbitration clause to be unenforceable, since it found that Bragg was not given an opportunity to exercise his lawyerly skills to negotiate an alternative clause rather than clicking on the “I agree” button. It is also intriguing that the dispute was triggered by Linden’s seizure of Bragg’s virtual land inside *Second Life*, and that the equivalent BIT situation of the investor seeking arbitration, but the host country preferring that the investor first exhaust local domestic court remedies, seems to be reversed in this situation.

Does this reversal suggest, then, that the VW game theoretic approach might not be a good fit as a normative model for BITs, particularly in the context of the erosion of domestic law? Although, on its face, this might seem to be a probable conclusion, if one examines the issue more deeply one sees that there still remains the common theme between EULAs and BITs in the sense that there is the fundamental contract of adhesion issue in both spheres. Although one might argue that developing countries have their own teams of lawyers who could presumably attempt to bargain their way out of boilerplate BIT templates, the court in *Bragg v Linden* was not persuaded by

⁵⁶ Van Harten and Loughlin, see note 4 above.

⁵⁷ 487 F Supp 2d 593.

Linden's argument that Bragg was himself an experienced attorney. It is significant that the court in the Bragg case noted that Second Life was the only VW selling virtual land, and therefore Bragg's power of negotiation was inherently limited since there were no other comparable VWs that offered membership without an arbitration clause. One could, however, also point out that investment capital is extremely mobile and that developing countries may not have the opportunity to obtain investment from a country that it has a BIT with that omits the arbitration clause, since the clause is very common one. Also, due to the prevalence of most-favoured nation (MFN) clauses in BITs⁵⁸ and the ruling in the *Maffezini*⁵⁹ case that MFN clauses include within their scope the issue of the applicability of compulsory arbitration, developing countries may be in a similar situation as the plaintiff Bragg with regards to having very little opportunity to use lawyerly skills to negotiate out of the arbitration clause.

In terms of their erosion of domestic law, one might argue that BITs do more than merely replace domestic law on various procedural points such as exhaustion of local remedies – BITs actually give MNEs the power to seek review by an arbitral panel of public acts by a sovereign state that adversely affect an MNE's investment interests in that state. How would this translate into the game theoretic analysis of the powers granted to the game developer under the EULA? Individuals, unlike sovereign states, do not generally perform two kinds of actions (i.e. one in their public capacity, and the other in their capacity as ordinary commercial actors). There is, however, a parallel form of bifurcation in the context of VW users, for whom one set of actions is performed in their capacity as an inhabitant of the VW, and another set is performed in their capacity as a citizen of the RW. To continue the analogy, then, the strikingly unique feature of BITs is that they provide a global mechanism for arbitral review of the public actions of sovereign states using a model more suited to commercial disputes. This process is mirrored to a large degree by the provisions of EULAs in VWs which allow for arbitral review of the actions of players in their primary capacity as RW citizens, using a model more suited to resolution of in-game disputes.

An example of this is provided by Ludlow in *The Second Life Herald*, in which he describes how his account in The Sims Online for his avatar known as Urizenus Sklar was terminated by the game developers because he was publishing an online newspaper outside of the game that criticised various unsavoury practices within the game such as cyber-brothels, child prostitution and extortion rackets.⁶⁰ Ludlow notes that the account termination was ostensibly because he breached the EULA by linking to his newspaper in his Sims profile, but he noted that this rationale was spurious

⁵⁸ J Kurtz, "The MFN Standard and Foreign Investment – An Uneasy fit?" (2004) 5 *The Journal of World Investment & Trade*, 861-886.

⁵⁹ *Emilio Agustin Maffezini v Kingdom of Spain*, International Centre for the Settlement of Investment Disputes ICSID Case No ARB/97/7, Decision of the Tribunal on Objections to Jurisdiction, 25 January 2000, 40 ILM 1129, 2001. The reasoning in this case was recently followed in *Suez, Sociedad de Aguas de Barcelona SA, and InterAguas Servicios Integrales del Agua SA v Argentina*, ICSID Case No ARB/03/17, Decision of the Tribunal on Objections to Jurisdiction (16 May 2006) but was not followed in a subsequent case, *Telenor Mobile Communications AS v Republic of Hungary*, ICSID Case No ARB/04/15, Decision of the Tribunal on Objections to Jurisdiction, 13 September 2006, where the tribunal noted at para 95: "In these circumstances, to invoke the MFN clause to embrace the method of dispute resolution is to subvert the intention of the parties to the basic treaty, who have made it clear that this is not what they wish."

⁶⁰ Ludlow, see note 47 above, at ch 10.

given that many other players had linked to outside interests and businesses in their profile and were not terminated.

Although this issue did not proceed to arbitration under the EULA, if it did, then likely the arbitrator would have effectively assumed jurisdiction over Ludlow's RW exercise of his constitutional right of free speech. This seems intuitively just as strikingly unique – and perhaps even as egregious as – the arbitrator appointed under a BIT at the behest of a disgruntled investor in essentially what is purely a commercial dispute extending his reach beyond the “game” of the commercial transaction to rule on the legitimacy of sovereign state actions (such as the ability to regulate technology, deliver services, tax businesses, protect the environment etc). Although arbitrators under BITs cannot make cease and desist orders against sovereign states, they can and do make enforceable orders for damages against states, sometimes in the hundreds of millions of dollars, and therefore the arbitrators have the effective potential power to deter sovereign nations from lawfully exercising or continuing to lawfully exercise their inherent constitutional powers. In the same way, if an arbitrator in the Peter Ludlow case had made an order for damages against Ludlow for breach of the EULA, that order could have had the indirect effect of deterring him from exercising his constitutional right of free speech outside the game. In both cases, the BIT and the game theoretic model of the VW, the arbitrator is able to reach out from the confines of an ordinary commercial dispute to hamstringing constitutionally lawful activities.

The termination of Peter Ludlow's account by the developers of The Sims Online in 2003 produced a surprisingly large amount of media attention, including the front page of the New York Times, the Boston Globe, the Detroit Free Press, CNN, salon.com, and news organisations in the United Kingdom, Spain, France, and Russia.⁶¹ One could speculate that this seemingly isolated incident inside a non-existent world resonated with the public so extensively because it identified with Ludlow's perceptions of having his constitutionally protected rights being threatened by a faceless decision-maker whose powers were derived exclusively from Ludlow clicking on a contract of adhesion that he had little choice in accepting.

From a certain perspective, both the commercial contract between the MNE and the host state business in which the MNE has invested and the functioning of the legislature in that state are somewhat similar to activities that occur inside the “magic circle” posited by Johan Huizinga in his seminal 1938 book, *Homo Ludens*. The magic circle, according to Huizinga, is a protected space inside which activities in the nature of play occur. Inside this circle, these activities are protected from the disruptive intrusion of considerations relating to the world that exists outside of the circle. For example, the game of football is a rough, contact sport that is played inside a conceptual magic circle that protects the players from the normal laws regarding infliction of physical injury on others, as long as they play by the game's rules. Huizinga noted that many different types of activities that might not traditionally be characterised as play can be surrounded by magic circles of their own. One example he gives is the realm of business competition:

The statistics of trade and production could not fail to introduce a sporting element into economic life. In consequence, there is now a

⁶¹ *Ibid.*

*sporting side to almost every triumph of commerce or technology: the highest turnover, the biggest tonnage, the fastest crossing, the greatest altitude etc ... Business becomes play.*⁶²

Another example that Huizinga gives is the British parliamentary tradition:

*... ever since the end of the 18th century, debates in the House of Commons have been conducted according to the rules of a game and in the true play- spirit. Personal rivalries are always at work, keeping up a continual match between the players whose object is to checkmate one another, but without prejudice to the interests of the country which they serve with all seriousness.*⁶³

In Huizinga's analysis of business competition and parliamentary debate, as seen through the lens of the game theoretic model of VWs in a Ludlowesque manner, the purely commercial contract between the MNE and the host country exists inside one magic circle, and legislative body of the host country exists inside a second one. Arbitral damage awards under BITs having the effect of deterring the host state from the normal exercise of its constitutionally lawful powers are improper intrusions into the second circle. Similarly, discriminatory legislation designed for the sole purpose of confiscating or expropriating an investor's business in the host state would be an intrusion into the first one. Each form of intrusion is the equivalent of professional football players being subject to the same standards of tort negligence as apply to strangers on a public sidewalk.⁶⁴ It is true that a developing country sovereign state that is a party to a BIT has, unlike a professional football player involved in a game, a dual role in that the state is at the same time either a party to a commercial transaction or if not a party then at the very least a third party with a beneficial interest, and also an independent sovereign nation with valid constitutional authority and often a democratic mandate to exercise certain lawful powers. This would be equivalent to a professional football player playing in the Super Bowl and walking on the sidewalk at the same time which is, of course, impossible. Does this mean, though, that a developing country party to a BIT should be subject to two standards of treatment in that it simultaneously exists inside the "magic circle" of the commercial transaction in one capacity and outside of it in another capacity?

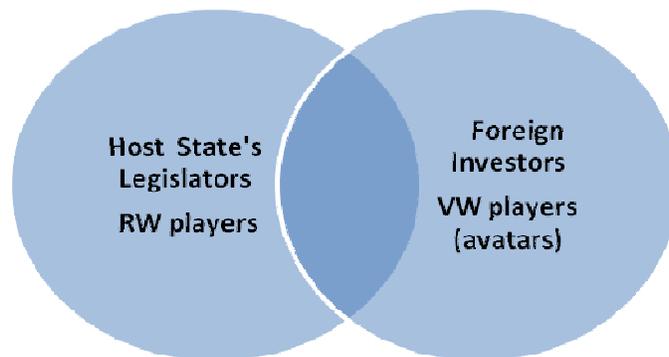
Game theoretic analysis stemming from the study of VWs indicates that the magic circle is a flexible concept in that there may be overlapping and intersecting magic circles, with each one representing a different sphere of influence. For example, a teenage boy playing a VW in a cyber café together with his friends may be simultaneously within the magic circle of the VW and in a second magic circle composed of his friends in the café who are either looking over his shoulder while he is playing or are seated at terminals next to him playing in the same VW and at the

⁶² Huizinga, see note 39 above, at 200.

⁶³ *Ibid*, at 207.

⁶⁴ J Fairfield, "Anti-Social Contracts" (2007) *Indiana Legal Research Studies Paper #89* available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1002997 (accessed 25 Jan 09).

same time conversing and interacting with him in the RW atmosphere of the café.⁶⁵ Therefore, the VW game theoretic model would indicate that, in the context of BITs, there is the strong possibility that a developing country that is a party to a BIT, as well as a party to, or having a beneficial interest in a commercial contract with a MNE in a developed country, could have two separate, but overlapping spheres of engagement: one related to its commercial functions and the other related to its sovereign powers. The two spheres are mutually compatible, although they intersect and represent fundamentally different interests. The following diagram represents the application of the magic circle VW game theoretic model as applied to the bifurcated role of the developing country sovereign nation that is a party to a BIT:



Therefore, the game theoretic model from VWs suggests that the area of overlap between the two spheres of interest is a relatively minor one. In this case, it would be represented in the example from the ethnographer's study of the cyber café environment by the simultaneous interaction on a RW and VW level between the player and also his friends who are physically present with the café and within the game. The number of individuals within this area of overlap is, however, very small compared to the hundreds or thousands of individuals that the player encounters in the game but will never meet in the RW. Furthermore, the ethnographer's study shows that the player does not want to meet these hundreds of VW individuals in the RW. One of the boys, when asked whether he would want to actually meet the individuals in the RW responded: "[t]his is just a game. You don't meet them in real life. This is just a game. That would be a bit ridiculous."⁶⁶

Translating this game theoretic model to the area of BITs, we see that, although there may be a small area of overlap between the role of the developing country signatory in its capacity as a party to or a beneficiary of a commercial contract and its role as a sovereign nation with duly constituted constitutional powers, this area is very small and almost insignificant when compared to the proportion of these two areas that are mutually exclusive and necessarily kept separate. Therefore, the game theoretic model

⁶⁵ F Jonsson, "Magic circle expanded – An Ethnographic Study of the Social Experiences of Game Play in a Game Café" Paper presented at the *Breaking the Magic Circle* conference at the University of Tampere, Finland (April 11, 2008), at 3.

⁶⁶ *Ibid.*, at 5.

indicates that the scope of the powers of arbitrators under BITs should be limited to the relatively small area of overlap and should not extend to areas outside of it.

6. Pressures from VWs for changes to BITS

Edward Castronova has posited that the hundreds of millions of individuals who will move into VWs over the next 5 to 10 years will begin to exert enormous pressures on RW politicians and decision-makers for the RW to reflect some of the ideal features of the VW to which they have become accustomed. This will extend to the area of international law, including BITs. The game theoretic model suggests that these pressures could result in advocacy for changes to BITs that include the following areas:

6.1 Right of exit

VW players generally have a right of exit that is much more extensive than that of developing countries from BITs. Although “closed” worlds such as WoW ban real money trading (RMT) in theory, this ban is widely ignored in practice due to cheating. This means that players who are dissatisfied with the game can leave relatively easily by simply selling their in-game assets for RW money, subject to concerns about loss of accrued reputation and social networks. This contrasts with the situation of developing country parties to BITs, which usually cannot exit from the treaty for at least a period of 10 years, and which, even after exit, remain bound by the terms of the treaty for investments made before its termination. This indicates that the game theoretic model will result in demands for increased rights of exit from BITs, such as changed circumstances provisions, or shorter terms. However, as Albert O Hirschman noted in his seminal book, *Exit, Voice and Loyalty*, it is important for the right of exit to be tempered with some measures requiring loyalty in order to encourage constructive criticism and dialogue from within rather than silence followed by abrupt departure.⁶⁷

6.2 Mid-term renegotiations

Players in VWs have occasionally been successful in effecting rule changes through mass protests, or the threat thereof, inside VWs. One example is the 2003 tax protest inside SL,⁶⁸ which was successful in effecting a rollback of the land tax system introduced by the game developers. Another example is the threatened 2004 protest inside WoW, which was successful in achieving a withdrawal of rule changes adversely affecting the Warrior class. Significant mid-term post ratification renegotiations of BIT clauses by developing countries have, however, been extremely rare to non-existent. This is due to the lack of bargaining power by developing countries which are pitted against each other due to the easy mobility of capital. Players inside VWs, on the other hand, have the advantage of collective electronic mobilisation and commonality of interests with each other that can produce effective

⁶⁷ A Hirschman, *Exit, Voice and Loyalty* (Cambridge: Harvard Univ. Press, 1970), at 79.

⁶⁸ W Au, “The Taxman Cometh!” *New World Notes* (12 Sept 2003) available at http://secondlife.com/notes/2003_09_08_archive.php (accessed 25 Jan 09).

bargaining pressure vis-à-vis the game developer. Therefore, the game theoretic model of VWs will likely have the effect of producing increased demands for mid-term renegotiations. To accomplish this objective, developing countries may begin to cooperate with each other more extensively, on the basis that despite the mobility of capital, they do have common interests. Although the Prisoner's Dilemma model is a non-cooperative game, VWs suggest a different approach that is cooperative. For example, members of the Warrior class in WoW banded together to effect rule change; in a similar manner, members of certain classes of developing countries may begin to band together to renegotiate objectionable clauses in BITs.

6.3 Scope of arbitrator's authority

Players in VWs have simultaneous presences in the RW and the VW, but generally keep them separate and distinct, with some minor exceptions such as RW interactions with friends who are playing the same game in a cyber café. On the other hand, the dual role of developing countries as sovereign states and as commercial actors is blurred together when it comes to powers of the arbitrators appointed under BITs. As a result, a sovereign state can be deterred from the reasonable exercising of its constitutionally mandated legitimate sovereign authority by the power of an arbitrator to make substantial damage awards against it for doing so. This anomalous result will be subject to pressures for change due to the game theoretic model in which there is recognition that the magic circle of the game (the commercial transaction) should generally be kept separate and distinct from the RW lives of the players (the sovereign nation developing countries). As with the cyber café model, there will be some small area of overlap, where the arbitrator would have jurisdiction over both issues, e.g. possibly bad faith issues such as opportunistic exit or actual expropriation, but these would be relatively rare events.

Possible future interoperability amongst VWs could lead to pressures to create a similar coherent network amongst the different model BITs of developed countries by establishing a permanent, independent adjudicative tribunal to ensure that reputational capital can be easily transferred by developing countries from one model BIT to another.

7. Conclusion

The use of the PD as a descriptive/predictive game theoretic model for international law is highly flawed for several reasons including its lack of the exit option,⁶⁹ and its failure to recognise that the agendas of sovereign states are not shaped in a vacuum, but rather are developed in the context of international law and norms.⁷⁰ However, the constructivists' argument that the PD model is problematic because of its anthropomorphic ascribing of the unitary personality model to sovereign states does not have much traction, since as cognitive science has demonstrated, individuals share with sovereign states the bureaucratic hierarchies of conceptual organisation that resolve the "cacophony of voices" issue.⁷¹ This opens the way up for the exploration

⁶⁹ Helfer, see note 6 above, at 1612.

⁷⁰ Berman, see note 10 above, at 1265.

⁷¹ Minsky, see note 18 above, at 102.

of VWs as a potential new game theoretic model to study international law, particularly the area of BITs. A key feature of the VW game theoretic model is that it is on its face normative,⁷² rather than descriptive, and therefore it tends to sidestep the criticism that sovereign states are not equivalent to game players due to the unitary personality issue. In any event, as discussed above, the VW game theoretic model is also sufficiently robust to directly deal with that criticism as well.

In the coming decade, the hundreds of millions of individuals entering VWs will likely begin to exert a normative influence on the shapers of BITs in numerous areas, including exit, mid-term negotiation, and the applicability and scope of compulsory arbitration clauses.

⁷² Castronova, see note 1 above, at 133.