

Malachy James Gavan

Email: malachy.gavan@upf.edu ◦ **Web:** www.malachygavan.com

Department of Economics and Business, Universitat Pompeu Fabra

25-27 C. Ramon Trias Fargas, Barcelona, Spain

Citizenship: British ◦ **Date of Birth:** 25/03/1996

Last Updated: October 2022

Placement Director: Libertad González

libertad.gonzalez@upf.edu ◦ (+34) 93 542 2610

Graduate Coordinator: Marta Araque

marta.araque@upf.edu ◦ (+34) 93 542 2226

Education	Ph.D. in Economics Universitat Pompeu Fabra, Barcelona, Spain Advisor: Professor Antonio Penta	2019 - Present
	M.Res. Economics Universitat Pompeu Fabra, Barcelona, Spain	2018 - 2019
	M.Sc. Economics Barcelona School of Economics, Barcelona, Spain	2017 - 2018
	B.Sc. Economics University of Surrey, Guildford, United Kingdom	2014 - 2017

Research Interests	Game Theory and Mechanism Design
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References	Professor Antonio Penta Advisor ICREA-UPF, BSE, and TSE antonio.penta@upf.edu (+34) 93 542 2551	Professor Alexander Frug Committee Member UPF and BSE alexander.frug@upf.edu (+34) 93 542 1174	Professor Larbi Alaoui Committee Member UPF and BSE larbi.alaoui@upf.edu (+34) 93 542 2842
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Job Market Paper	Negotiated Binding Agreements I study binding agreements that can result from negotiation, where the agreement is over agents' behaviour in an underlying strategic environment, represented by a game. To do so, I propose a negotiation protocol where, in each round of negotiation, agents make public proposals of the action they will take. The protocol terminates when these proposals are confirmed. Confirmation results in a binding agreement and payoffs are given by the agreed action profile. I provide easy-to-check necessary and sufficient conditions for the outcomes of this game using the solution concept <i>Negotiated Binding Agreements</i> , a refinement of subgame perfect equilibrium where agents only propose actions they could agree to. A full characterisation of these outcomes is provided for two-player games. I show these general conditions are robust to perturbations in the negotiation procedure including timing of proposals, proposing actions for all agents, and variation in the payoff of perpetual disagreement. Finally, I extend the model to accommodate the possibility that agents make binding agreements over the very negotiation process, and I provide necessary sufficient conditions on the outcomes in the underlying game that may result from such a negotiation. The results generalise naturally and are shown to be linked to the cooperative game theoretic notion the β -core (Aumann, 1959, 1961).
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Other Working Papers	Safe Implementation	(with A. Penta, submitted)
	<p>We introduce <i>Safe Implementation</i>, a notion of implementation that adds to the standard requirements the restriction that deviations from the baseline solution concept induce outcomes that are <i>acceptable</i>. The primitives of Safe Implementation therefore include both a Social Choice Correspondence, as standard, and an Acceptability Correspondence, each mapping every state of the world to a subset of allocations. This framework generalizes standard notions of implementation, and can accommodate a variety of considerations, including robustness concerns with respect to mistakes in play, model misspecification, behavioral considerations, state-dependent feasibility restrictions, limited commitment, etc. We provide results both for general solution concepts and for the case in which agents' interaction is modelled by Nash Equilibrium. In the latter case, we identify necessary and sufficient conditions (namely, <i>Comonotonicity</i> and <i>safety-no veto</i>) that restrict the joint behavior of the Social Choice and Acceptability Correspondences. These conditions are more stringent than Maskin's (1978), but coincide with them when the safety requirements are vacuous. We also show that these conditions are quite permissive in important economic applications, such as environments with single-crossing preferences and in problems of efficient allocation of indivisible goods, but also that Safe Implementation can be very demanding in environments with 'rich' preferences, regardless of the underlying solution concept.</p>	
	Weak Coalitional Equilibrium: Existence and Overlapping Coalitions	(submitted)
	<p>I consider Ray and Vohra (1997)'s Coalitional Equilibrium and show the methodological advantage of taking the notion of "an improvement for a group" to mean that there is a joint action of the group that induces a strict improvement in utility for all its members. This is opposed to assuming no agent in the group is worse off while one is strictly better off. I show that, when this interpretation is taken, the sufficient conditions for existence of Ray and Vohra (1997)'s Coalitional Equilibrium can be weakened. I do so by showing that the existence of Coalitional Equilibrium is implied by the existence of a Nash Equilibrium of an auxiliary game. Further to this, I show that the proof of existence can be extended to a generalisation of the concept, where groups may overlap but do not necessarily include the grand coalition.</p>	
Work in Progress	Grand Coalition Rationalizability and Undominated Correlated Equilibria	(with P. Ennuschat)
	Efficient Tariffs under Strategic Side Payments	(with M. Ptashkina)
Seminars, Conferences, and Summer Schools	Presentations	
	European Winter Meeting of the Econometric Society [△]	Berlin School of Economics, 2022
	Asian School in Economic Theory	NUS, 2022
	33 rd Stony Brook International Conference on Game Theory	Stony Brook University, 2022
	2022 Conference on Mechanism and Institution Design*	NUS, 2022
	International Conference Game Theory and Applications*	St. Petersburg State University, 2022
	The 12 th Conference on Economic Design	University of Padova, 2022
	Internal Microeconomics Seminar	UPF, 2022
	Student Seminar	UPF, 2021, 2022
	BSE Ph.D. Jamboree	BSE, 2020*, 2021*, [†] , 2022
	Attendance	
	31 st Jerusalem Advanced School in Economic Theory*	HUJI, 2021
([△] scheduled, *online, [†] discussant)		

Research Experience	Research Assistant for Professor Antonio Penta Univeristat Pompeu Fabra, Barcelona, Spain	2020 - Present
Referee Services	Games and Economic Behavior	
Teaching Experience	Barcelona School of Economics Microeconomics I <i>Masters Level, Instructor: Joan de Martí, Practical Sessions</i> Microeconomics II <i>Masters Level, Instructor: Joan de Martí, Practical Sessions</i> Advanced Microeconomics II <i>Ph.D. Level, Instructor: Antonio Penta, Practical Sessions</i> Advanced Mathematics Brush-Up <i>Ph.D. Level, Instructors: Piotr Zwiernik (2019, 2020) and Alexander Frug (2021), Practical Sessions and Lectures on Set Theory</i> Probability and Statistics Brush-Up <i>Masters Level, Instructor: Christian Brownlees, Practical Sessions</i> Universitat Pompeu Fabra Topics in Microeconomic Theory <i>Undergraduate Level, Main Instructor: Francesco Cerigioni, Other Instructors: Jose Apestagua, Alexander Frug, Andreu Mas-Colell, Massimo Motta, Rosemarie Nagel, Experimental Sessions and Lectures on Risk</i> Mathematics for Economics and Finance <i>Ph.D. Level, Instructor: Piotr Zwiernik, Practical Sessions</i> Game Theory and Design of Institutions <i>Undergraduate Level, with Antonio Penta, Practical Sessions and Lectures on Bayesian Games (2022)</i>	2018, 2019 2019, 2020, 2021 2019, 2020 2019, 2020, 2021 2020, 2021, 2022
Honours, Awards, and Scholarships	Best Teaching by a Graduate Student at UPF <i>equally split with Zoel Martín Vilató</i> UPF M.Res. Tuition Fee Waiver BSE Merit Based Scholarship	2021 - 2022 2018 2017
Academic and Departmental Services	UPF Student Seminar Co-Organiser <i>with Andrea Sy</i> UPF Microeconomics Reading Group Co-Organiser <i>with Evangelia Spantidaki Kyriazi</i>	2020 - 2021 2020 - 2021
Skills	IT: \LaTeX , TikZ, LyX, MATLAB, Mathematica Languages: English (Native), Spanish (Basic), British Sign Language (Basic)	