Appel à projets de recherche 2012 pour

- ✓ **des chaires d'excellence**
- ✓ **des financements d'équipes de recherche recrutées sur des projets structurants**
- ✓ **restructurations/rapprochement d'équipes**

*Les dossiers devront être rendus au plus tard le **lundi 19 novembre 2012 à 12h00** à l'attention d'Hélène Le Roux sous format*

Papier à l'adresse : PSL - 62bis Rue Gay-Lussac 75005 PARIS*
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Un jury issu du conseil de la recherche et qui demandera des avis auprès d'experts internationaux, rendra ses recommandations à la fin décembre pour une mise en place des financements dès le mois de janvier 2013.

Pour toute question concernant la préparation de ce dossier, Hélène Le Roux est à votre disposition :
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Intitulé du Projet : The Evolution of Fairness by Partner-choice: An Interdisciplinary Approach

Acronyme : **EvolFair**

Nom du Porteur : **Nicolas Baumard**

S'agit-il d'un projet de :

X Chaire d'excellence

☐ Équipes de recherche recrutées sur des projets structurants

☐ Restructuration/Rapprochement d'équipes

Durée envisagée du projet : 24 mois[1]

Résumé du projet (1 000 caractères maximum) :

What makes humans fair? This question can be understood either as a proximate 'how' question or as an ultimate 'why' question. The 'how' question is about the mental mechanisms that produce judgments of fairness, and has been investigated by psychologists and social scientists. The 'why' question is about the fitness consequences that explain why humans are endowed with a sense of fairness, and has been discussed by evolutionary biologists and behavioral economists in the context of the evolution of cooperation. My goal is to contribute to a fruitful articulation of such proximate and ultimate explanations of fairness. Using evolutionary models, I will develop an approach to fairness as an adaptation to an environment in which individuals are in competition to be recruited in mutually advantageous cooperative interactions. In this environment, the best strategy is to share the costs and benefits of cooperation in a fair way. Using experimental methods, I will investigate the patterns of fairness judgments both developmentally and cross-culturally and examine whether they conform to the predictions of evolutionary models.

[1] Les projets seront limités à 24 mois. Exceptionnellement, une prolongation n'excédant pas 12 mois pourra être accordée.

Programme de recherche (30 000 caractères maximum) :

OVERALL AIMS

My research is based on the idea that **fairness is a biological adaptation to the countless conflicts of interests that pervade human interactions**. Although individuals have a common interest in cooperation, they each would be better off with a bigger share of the benefits. However, my research has demonstrated that individual interests are bounded by the ecological necessity to find cooperative partners: if an individual is too greedy, potential partners are likely to refuse to further cooperate; if, on the other hand, they are too generous, they take the risk of being exploited (Baumard, 2010). In this context where **individuals can choose their partners,** the evolutionary stable strategy yields a **distribution of resources that follows a logic of fairness** (André & Baumard, 2011a, 2011b).

This research programme constitutes a step forward with respect to **standard theories of the evolution of cooperation where individuals' outside opportunities are not taken into account** (Axelrod & Hamilton, 1981; Nowak, Page, & Sigmund, 2000; Trivers, 1971). As a result, in these standard theories, the distribution of benefits is influenced by the power struggle between cooperative partners: because almost anything is better than being left out of social interactions, it is indeed more advantageous to accept the terms of an unfair partner, whatever these may be, than to be left alone (Schelling, 1960). In that case, even highly biased or unfair interactions may well turn out to be evolutionarily stable. **In the absence of outside options then, there is no particular reason why interactions should be governed by considerations of fairness**.

The general principle behind **partner-choice theory** (Noe & Hammerstein, 1995) leads to precise predictions regarding the way resources should be transferred in economic games. Indeed, because unsatisfied individuals have the option of changing partners, individuals should be sensitive to their partners' outside opportunities and reward them **in exact proportion to the effort invested in each interaction, and as a function of the quality and rarity of their skills**. In line with this idea, our previous work has demonstrated that distributions in economic games are affected by factors such as effort, competence and talent (Baumard, André, & Sperber, in press).

This first step revealed that human behaviour displays the signature of fairness **but the assumption that the sense of fairness is a full-blown biological adaptation has yet to be demonstrated**: Do effort and talent universally impact distributions? Are these factors taken into account early in ontogeny? Can these factors be successfully incorporated to models of partner-choice? The goal of the present project is to examine these questions by capitalizing on behavioural economics, developmental psychology and evolutionary models. We have the following specific aims:

> **Aim 1: Examine whether effort and talent are universal moderators of distributions in economic games.** Economic games allow to quantify how players represent and balance the interests of each individual involved in the cooperative situation. We will use two-phase games in which participants first work towards producing a common resource and then distribute it. Using this method, it had been shown in Western adults that distributions parametrically vary as a function of each player's effort and talent. We predict that this pattern will also be found in collectivist and small-scale societies.

Aim 2: Examine the emergence of complex fairness judgments in children. Classic studies in developmental psychology demonstrate a relatively late development of fairness, with children as old as 6 failing to take effort or talent into account when distributing goods. In contrast to this classic view, we predict that fairness develops naturally and that the use of more ecological tasks will allow to uncover children's subtle intuitions and the way these are modulated by effort and talent.

Aim 3: Model the impact of specific outside opportunities on the evolution of fairness. Our first model demonstrated that partner choice allows for the emergence of fairness using very simple parameters. Yet, it faced a number of issues: it did not predict asymmetric interactions (i.e., individuals may differ in their levels of effort, competence, or talent). We will complexify our initial model to address these issues and predict that such an enriched partner-choice model will account for a wider variety of distribution patterns.

OVERALL BACKGROUND

Humans don't just cooperate. They cooperate in a great variety of quite specific ways and have strong views in each case on how it should be done (with substantial cultural variations). In collective actions aimed at a common goal, there is a right way to share the benefits: Those who have contributed more should receive more (Konow, 2001; Marshall, Swift, Routh, & Burgoyne, 1999). When helping others, there is a right amount to give. One may have the duty to give a few coins to beggars in the street but one does not owe them half of one's wealth, however helpful it would be to them (Baron & Miller, 2000; Fiske, 1992; Levine, Norenzayan, & Philbrick, 2001). When people deserve to be punished, there is a right amount of punishment. Most people in societies with a modern penal system would agree that a year in jail is too much for the theft of an apple and not enough for a murder (Robinson & Kurzban, 2006). People have strong intuitions regarding the right way to share the benefits of activity, the right way to help the needy, and the right way to punish the guilty. **Do these intuitions, notwithstanding their individual and cultural variability, have a common logic, and, if so, to what extent is this logic rooted in evolved dispositions?**

To describe the logic of morality, many philosophers have noted that when humans follow their moral intuitions, they behave as if they had bargained with others in order to reach an agreement about the distribution of the benefits and burdens of cooperation (Gauthier, 1986; Hobbes, 1651; Kant, 1785; Locke, 1689; Rawls, 1971). Morality, these 'contractualist' philosophers argue, is about maximizing the mutual benefits of interactions. The contract analogy is both insightful and puzzling. On the one hand, it well captures the pattern of moral intuitions, and to that extent well explains why humans cooperate, why the distribution of benefits should be proportionate to each co-operator's contribution, why the punishment should be proportionate to the crime, why the rights should be proportionate to the duties, and so on. On the other hand, it provides a mere as-if explanation: it is as if people had passed a contract—but since they didn't, why should it be so?

To evolutionary thinkers, the puzzle of the missing contract is immediately reminiscent of the puzzle of the missing designer in the design of life forms, a puzzle essentially resolved by Darwin's theory of natural selection. Actually, two contractualist philosophers, Rawls and Gauthier, have argued that moral judgments are based on a sense of fairness that, they suggested, has been naturally selected. Here we explore this possibility in some detail. **How can a sense of fairness evolve?** In order to answer this question, we will use behavioural economics, developmental psychology and evolutionary models.

Aim 1: Examine whether effort and talent are universal moderators of distributions in economic games.

Collaborators at PSL: Jean-Baptiste André (CNRS, IBENS, ENS), Stephane Debove (PhD Student, IBENS, ENS) and Elodie Djemai (LEDa, Dauphine)

Background: Human collective actions, for instance collective hunting or collective breeding, can be seen as ventures in which partners invest some of their resources (goods and services) to obtain new resources (e.g. food, shelter, protection) that are more valuable to them than the ones they have initially invested. Partners, in other words, offer their contribution in exchange for a share of the benefits. For this, **partners need to assess the value of each contribution**, and to proportionate the share of the benefits to this value.

But how do people decide what counts as contribution? This is not a simple matter. In political philosophy, for instance, the doctrine of choice egalitarianism defends the view that people should only be held responsible for their choices (Fleurbaey, 1995; Roemer, 1985). The allocation of benefits should not take into account talents and other assets that are beyond the scope of the agent's responsibility. In cooperative games, a reasonable interpretation of this fairness ideal would be to consider that a fair distribution is one that gives each person a share of the total income that equals her share of the total effort (rather than a share of the raw contribution). From the point of view of partner choice, however, egalitarianism is not an optimal way to select partners: **partners who contribute more be it thanks to greater efforts or to greater skills are more desirable** and hence their greater contribution should entitle them to greater benefits.

Economic games allow to quantify how players represent and balance the interests of each individual involved in the cooperative situation and therefore constitute a central tool to study whether effort and talent have an impact on distribution, as predicted by partner choice. The two games that are most used in the literature are the ultimatum game and the dictator game. In the ultimatum game, two players are given the opportunity to share an endowment, say a sum of €10. One of the players, (the "proposer") is instructed to choose how much of this endowment to offer to the second player (the "responder"). The proposer can make only one offer that the responder can either accept or reject. If the responder accepts the offer, the money is shared accordingly. If the responder rejects the offer, neither player receives anything. The dictator game is a simplification of the ultimatum game. The first player (the "dictator") decides how much of the sum of money to keep. The second player (the "recipient"), whose role is entirely passive, receives the remainder of the sum.

In line with the predictions of partner choice, Cappelen et al. (2010) demonstrated that effort and talent are taken into account in a dictator game. Their game involved two phases: a production phase and a distribution phase. In the production phase, the players were randomly assigned a document and asked to copy the text into a computer file. The value of their production depended on the price they were given for each correctly typed word (arbitrary rate of return), on the number of minutes they had decided to work to produce a correct document (effort), and on the number of correct words they were able to type per minute (talent). The question was: which factors would participants choose to reward? Almost 80% of the participants found it fair to reward people for their working time, that is, for their effort. Almost 80% of the participants found it unfair to reward people for features that were completely beyond their control (arbitrary rate of return). Finally, and most importantly, almost **70% of the participants found it fair to reward productivity even if productivity may have been primarily outside individual control** (talent).

Study goal: The goal of Aim 1 is to test whether participants universally take into account effort, talents, and other assets that are beyond the scope of the agent's responsibility when allocating benefits. Cross cultural research has shown important variability in the way various cultures distribute resources in the dictator game (Henrich et al., 2010). One possibility is that this variability reflects real differences in people's sense of fairness. If, on the other hand, people are endowed with a universal sense of fairness (akin to other senses – smell or sight) it can be hypothesized that this **apparent cultural variability hides an underlying common logic** (Baumard, Boyer, & Sperber, 2010). In economic games, it is hard for partners to assess the value of each player's contribution because the situation is mostly underdetermined: Where does the money come from? Why was the dictator chosen? Did the dictator earn the money that needs to be distributed? Such underspecificity opens the door for large variance, in particular when looking at very different cultures (Baumard & Sperber, 2010). **Specifying the players' respective contribution by manipulating talent and effort will reduce this counfound and allow for a proper evaluation of the hypothesis that a universal sense of fairness guides allocation of resources.**

Figure 1. Family gathering of Turkana people, taken on Pierre Lienard's field.

Methods: Since the dictator game removes the strategic aspects found in the ultimatum game, it is often regarded as the best tool to study genuine cooperation and, for this reason, we will focus on this game. We will use a two-phase dictator game based on Cappelen et al. (2010) and adapt it to suit various cultures. The game will involve a first phase where participants will be asked to complete a task that is culturally relevant, and will be followed by the distribution phase. A standard dictator game will also be included (order counterbalanced). 50 participants will be tested in each culture. This project will recruit participants in France and in a small-scale and a collectivist society where the largest cross-cultural differences have been observed. The cross-cultural component will rely on existing collaborations (Baumard et al., submitted; Liénard, P., Chevallier, C., Mascaro, O., Kiura, P., & Baumard, N., in revision) with Pierre Lienard (University of Nevada, USA) who specializes in the study of the Turkana in Kenya (see Figure 1) and Xu Jing (Washington University, USA) who specializes in the study of cooperation in China (Baumard et al., submitted). We predict that while variance will be observed in the standard dictator game, all participants will take effort and talent into account when allocating resources.

Relevant publications:

1. **Baumard, N**., André, J.B. et Sperber, D. (in press) A mutualistic theory of morality, *Behavioral and Brain Sciences*, Target article.
2. **Baumard, N**. (in press) Cultural norms: Transmitted behaviors or adapted response? Commentary on Gerkey, *Current Anthropology*
3. **Baumard, N.** & Sperber, D. (2012) Evolutionary and cognitive anthropology, In Fassin, D. (Ed.), *Companion to Moral Anthropology*, Wiley-Blackwell.
4. **Baumard, N.** (2012) The moral problem of group selection, Commentary on Pinker's The false

allure of group selection, *Edge*
5. **Baumard, N**. & Liénard, P. (2011) Second or third party punishment? When self-interest hides behind apparent functional interventions (Letter to Mathew & Boyd's "Punishment sustains large scale cooperation in prestate warfare"), *Proceedings of the National Academy of Sciences*, 108 (39).
6. **Baumard, N.**, Boyer, P. and Sperber, D. (2010) Evolution of Fairness: Cultural Variability, (Letter to Henrich et al.'s "Markets, Religion, Community Size, and the Evolution of Fairness and Punishment") *Science* 23 July 2010 329: 388-389.
7. **Baumard, N**. & Sperber, D. (2010) Weird people, yes but also weird experiments? Commentary to Henrich et al.'s « WEIRD people » (2010), *Behavioral and Brain Sciences.*

Aim 2: Examine the emergence of complex fairness judgments in children.

Collaborators at PSL: Emmanuel Dupoux (IEC, ENS) and Pierre Jacob (IEC, ENS)

Background: In the same way that people's understanding of economic games might explain cross-cultural variations, children's beliefs may explain their behavior in economic games. Children younger than 7 seem to be shockingly ungenerous when playing economic games (Bernhard, Fischbacher, & Fehr, 2006; Blake & Rand, 2010). Although these observations seem to suggest a late development of a sense of justice, it contrasts with other results in developmental psychology that demonstrate a very early emergence of a preference for helping rather than hindering behavior (Hamlin, Wynn, & Bloom, 2007; Dupoux & Jacob, 2008), fairness-based behavior (Hamann, Warneken, Greenberg, & Tomasello, 2011; Warneken, Lohse, Melis, & Tomasello, 2011) and fairness-based judgments (Baumard, Mascaro, & Chevallier, 2011; Geraci & Surian, 2011; Schmidt & Sommerville, J., 2011). One way to reconcile these apparently contradictory findings starts from the observation that young children do not have the same experience or perspective as adults. While adults rarely if ever get money for free, receiving resources from others is actually the norm rather than the exception for children. Proposers might thus see themselves as fully entitled to the resource they get in the game, exactly as they are fully entitled to the candies or the toys given by their aunt or their older sibling. The apparent lack of generosity among children may have more to do with their understanding of the game than with a late development of their sense of fairness.

Study goal: The goal of Aim 2 is to use experiments embedded in a rich context (rather than underspecified economic games), in order to investigate whether young children, just like adults, grant more rights to individuals spending more efforts towards the production of a common good and to individuals who are more talented.

Preliminary results: We studied preschoolers' understanding of effort in a vignette-based experiment where participants had to distribute cookies among several fictional characters. The story involved two characters who decide to bake cookies together. One gets tired, stops working and starts to play. The other character agrees to continue cooking whilst declaring that it is hard work. Eventually, the cookies are done and children are asked to distribute them (see Figure 2). Our results indicate that children as young as 3 consistently give the biggest cookie to the biggest contributor, showing an ability to match effort and distribution (Baumard et al., 2011). Interestingly, this pattern disappears when children are asked to distribute a big gift and a small gift: to the extent that the gifts have nothing to do with the production phase, children understand that both characters have equal rights over the big gift.

Figure 2. Two little girls bake cookies together At some point, one gets bored and go play doll while the other keeps cooking. At the end, the cookies are ready. There is a big cookie and a small cookie. How should the cookies be distributed?

In a series of follow-up experiments, we demonstrated that the same logic applies to the distribution of « chores »: 3 year olds judge that a character who took out toy cars and spread them across the playroom has a higher duty to clean up than the character who played with the same amount of cars but left them all lying close to the toybox (see Figure 3).

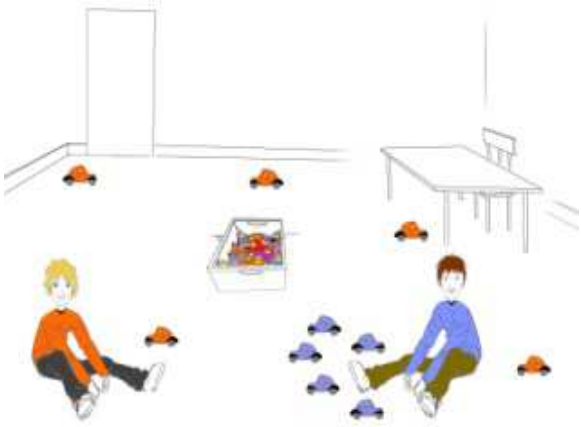


Figure 3. Vignette representing the distributive situation.

Methods: We will test whether the same logic applies to children's understanding of talent with vignettes introducing a character who is especially skilled in the context of a collaborative activity. We will contrast this experiment with another story introducing a character whose high productivity is not due to talent but to an especially efficient tool. 50 preschoolers aged 3 to 4 will be tested in each experiment. Recruitment will leverage existing databases at the Institut d'Etudes Cognitives (ENS). We predict that children will allocate more resources to the talented character but not to the character lucky enough to be equipped with a better tool.

Relevant publications:

1. **Baumard, N.,** Mascaro, O. et Chevallier, C. (2012) Preschoolers are able to take merit into account when distributing goods, *Developmental Psychology*.
2. Liénard, P., Chevallier, C., Mascaro, O., Kiura, P., and **Baumard, N.** (in review, *Cognition*) Moral development in a pre-state society.
3. **Baumard, N.**, and Dezecache, G. (in prep.) 'It's only fair!' Reparative and retributive justice in young children
4. **Baumard, N**., Castelain, T., Reignier, D., Sebesteny, A. & van der Henst J. B., (in prep). Has morality evolved for the group or for the individual? Insights from cross-cultural psychology
5. **Baumard, N.**, Xu, J., Chevallier, C., Mascaro, O. & van der Henst, J.B., (in prep). The development of merit in non western societies

Aim 3: Model the impact of specific outside opportunities on the evolution of fairness.

Collaborators at PSL: Yannick Viossat (CEREMADE, Dauphine), Jean-Baptiste André (CNRS, IBENS, ENS) and Stephane Debove (PhD Student, IBENS, ENS)

Background: Standard evolutionary models are notoriously bad at explaining the specific distribution of resources observed among humans (a symptom of what game theoreticians call the « folk theorem, » e.g. Aumann & Shapley, 1992). Indeed, in these models, individuals cannot choose their partners. They are stuck in the interaction and their only option is either to accept the offer made by their partners or to refuse it and loose all the benefits of the interaction. In these conditions, almost any distribution of resources is better than being left without a social interaction at all. As a consequence, in these models, even highly biased and unfair interactions may turn out to be evolutionarily stable (See Figure 4).

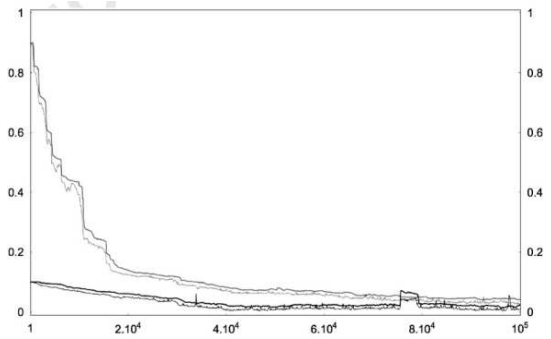


Figure 4 Evolution of offers (dark grey lines) and requests (light grey lines) without partner-choice. Offers quickly become unequal. Each line represents an average of ten simulations (André & Baumard, 2011b).

On the other hand, fairness can evolve when individuals have outside options (see Figure 5). In a previous work, **we developed a formal understanding of this principle in the simple case of a pairwise interaction** (André & Baumard, 2011a, 2011b). The demonstration is based on the idea that negotiation over the distribution of benefits in each and every interaction is constrained by the whole range of outside opportunities, determined by the market of potential partners. When social life is made up of a diversity of opportunities in which one can invest time, resources, and energy, **one should never consent to enter an interaction in which the marginal benefit of one's investment is lower than the average benefit one could receive elsewhere**. In particular, if all the individuals involved in an interaction are equal, not in the sense that they have the same negotiation power within the interaction, but in the more important sense that they have the same opportunities outside the interaction, they should all receive the same marginal benefit from each resource unit that they invest in a joint cooperative venture, irrespective of their local negotiating power. This is because even in interactions in which it might seem that dominant players could get a larger share of the benefits, a symmetric bargaining always occurs at a larger scale, in which each player's potential opportunities are involved.

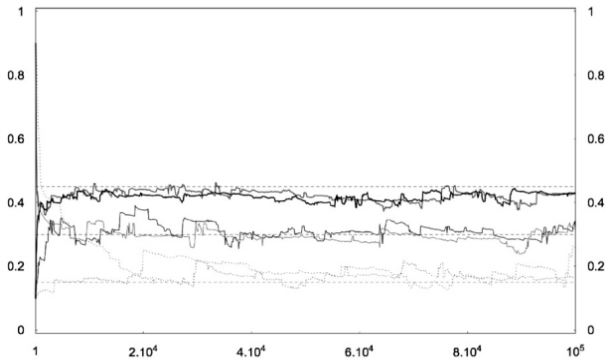


Figure 5 Evolutions of offers (dark grey lines) and requests (light grey lines) with partner-choice. Offers and requests converge around equal distributions (André & Baumard, 2011b).

Even though our model allowed for the emergence of fairness as an evolutionary stable strategy, it only accounted for situations in which individuals would prefer egalitarian outcomes. Yet, observations in behavioral economics and moral psychology show that humans deem some inequalities justified. In particular if they reflect the individuals'

contribution to the collective action (Baumard et al., in press). Understanding to what extent important inequalities can stabilize in a biological market is one of the key goals of this approach. **Considering the fact that some social roles are more "difficult" to play than others, and henceforth remain rare on the market, should prove key to this end.**

Study goal: The goal of Aim 3 is to enrich our initial model in order to address the possibility of asymmetric interactions (i.e., individuals may differ in their levels of effort, dominance, and talent).

Methods. We will develop more realistic models, in which individuals do not have the same resources (talent) and do not contribute equally to the interaction (effort) in order to test whether the evolutionary stable strategy is to proportionate the distributions of the benefits to the contribution of each partner. Mathematical analyses will involve hypotheses (e.g. non-overlapping generations, small mutation rates, etc.), and the robustness of our results to changes in these hypotheses will be tested. In this aim, we will perform numerical simulations of the evolutionary processes. They will be coded in C (using the program XCode), and run on a high-performance computer. The estimated needed CPU-time for the simulations will be approximately 10.000 core-hours at 2,8 GHz (approximately 2 months on an 8-cores computer). The outcome can either be that the system converges to a single evolutionarily stable strategy and all individuals exchange resources according to the same rules, or mixed equilibria where several strategies co-exist. Mathematical analyses will be performed using the software Mathematica. We predict that such an enriched partner-choice model will account for the impact of effort and talent on distribution patterns.

Relevant publications:

1. **Baumard, N**., André, J.B. et Sperber, D. (forthcoming) A mutualistic theory of morality, *Behavioral and Brain Sciences*, Target article.
2. André, J.B. & **Baumard, N.** (2012) Social opportunities and the evolution of fairness, *Journal of Theoretical Biology*.
3. André, J.B. & **Baumard, N**. (2011) The evolution of fairness in a biological market, *Evolution*, 65, 1.
4. **Baumard, N.** *Comment nous sommes devenus moraux : Une histoire naturelle du bien et du mal*, Odile Jacob, Paris, 2010, (in review for Oxford University Press).

References:

Alesina, A., & Glaeser, E. (2004). *Fighting Poverty in the US and Europe: A World of Difference*. Oxford UK: Oxford University Press.

André, J. B., & Baumard, N. (2011a). The evolution of fairness in a biological market. *Evolution*.

André, J. B., & Baumard, N. (2011b). Social opportunities and the evolution of fairness. *Journal of Theoretical Biology, 289*, 128-135. doi:10.1016/j.jtbi.2011.07.031

André, J.B., & Viossat, Y., (in prep.) Repetitive games and their extensive form: An evolutionary approach

Aumann, R. J., & Shapley, L. S. (1992). *Long-term competition: A game-theoretic analysis*. Dept. of Economics, University of California.

Axelrod, R., & Hamilton, W. (1981). The evolution of cooperation. *Science, 211*(4489), 1390-1396.

Baron, J., & Miller, J. (2000). Limiting the Scope of Moral Obligations to Help: A Cross-

Cultural Investigation. *Journal of Cross-Cultural Psychology*, *31*(6), 703.
Baumard, N. (2010). *Comment nous sommes devenus moraux Une histoire naturelle du bien et du mal*. Paris: Odile Jacob.
Baumard, N., André, J. B., & Sperber, D. (in press). A mutualistic approach to morality. *Behavioral and Brain Sciences*.
Baumard, N., Boyer, P., & Sperber, D. (2010). Evolution of Fairness: Cultural Variability. *Science*, *329*(5990), 388.
Baumard, N., Mascaro, O., & Chevallier, C. (2011). Preschoolers are able to take merit into account when distributing goods. *Developmental Psychology*. doi:10.1037/a0026598
Baumard, N., & Sperber, D. (2010). Weird people, yes, but also weird experiments. *The Behavioral and Brain Sciences*, *33*(2-3), 84-85. doi:10.1017/S0140525X10000038
Baumard, N., Xu, J., Adachi, K., Sebesteny, A., Mascaro, O., van der Henst, J.B., & Chevallier, C. (submitted). The development of merit in Asian societies.
Bernhard, H., Fischbacher, U., & Fehr, E. (2006). Parochial altruism in humans. *Nature*, *442*(7105), 912-915.
Blake, P. R., & Rand, D. G. (2010). Currency value moderates equity preference among young children. *Evolution and Human Behavior*, *31*(3), 210-218.
Cappelen, A. W., Sorensen, E. O., & Tungodden, B. (2010). Responsibility for what? Fairness and individual responsibility. *European Economic Review*, *54*(3), 429–441.
Clark, A. E., & Oswald, A. J. (1996). Satisfaction and comparison income. *Journal of public economics*, *61*(3), 359–381.
Fiske, A. (1992). The four elementary forms of sociality: Framework for a unified theory of social relations. *Psychological review*, *99*, 689-689.
Fleurbaey, M. (1995). Equal opportunity or equal social outcome. *Economics and Philosophy*, *11*, 25-25.
Forsé, M. & Parodi, M. (2010) *Une théorie empirique de la justice sociale*, Paris, Éditions Hermann, 2010
Fudenberg, D., & Tirole, J. (1991). *Perfect Bayesian equilibrium and sequential equilibrium*. Journal of Economic Theory, 53(2), 236–260.
Gauthier, D. (1986). *Morals by agreement*. Oxford, New York: Clarendon Press ; Oxford University Press.
Geraci, A., & Surian, L. (2011). The developmental roots of fairness: Infants' reactions to equal and unequal distributions of resources. *Developmental Science*.
Hamann, K., Warneken, F., Greenberg, J. R., & Tomasello, M. (2011). Collaboration encourages equal sharing in children but not in chimpanzees. *Nature*, *476*(7360), 328–331.
Hamlin, J. K., Wynn, K., & Bloom, P. (2007). Social evaluation by preverbal infants. *Nature*, *450*(7169), 557-9.
Henrich, J., Ensminger, J., McElreath, R., Barr, A., Barrett, C., Bolyanatz, A., Cardenas, J., et al. (2010). Markets, Religion, Community Size, and the Evolution of Fairness and Punishment. *Science*, *327*(5972), 1480.
Hobbes, T. (1651). *Leviathan, or, The matter, forme, & power of a common-wealth ecclesiasticall and civill*. London,: Printed for Andrew Ckooke [i.e. Crooke], at the Green Dragon in St. Pauls Church-yard.
Jacob, P. & Dupoux, E., (2008) Developmental Psychology: A Precursor of Moral Judgment in Human Infants?, *Current Biology*, 18 (5) 216-218.
Kant, E. (1785). *Fondements de la métaphysique des mœurs*. Paris: Librairie Delagrave.
Konow, J. (2001). Fair and square: the four sides of distributive justice. *Journal of Economic Behavior and Organization*, *46*(2), 137-164.
Levine, R. V., Norenzayan, A., & Philbrick, K. (2001). Cross-cultural differences in helping

strangers. *Journal of Cross-Cultural Psychology*, *32*(5), 543.
Liénard, P., Chevallier, C., Mascaro, O., Kiura, P., & Baumard, N. (in revision). Early development of fairness in a tribal society.
Locke, J. (1689). *Two treatises of government*. London: Awnsham Churchill.
Marshall, G., Swift, A., Routh, D., & Burgoyne, C. (1999). What Is and What Ought to Be: Popular Beliefs about Distributive Justice in Thirteen Countries. *European Sociological Review*, *15*(4), 349-367.
Méda, D. (2008). Au-delà du PIB: pour une autre mesure de la richesse, paris : Flammarion.
Noe, R., & Hammerstein, P. . (1995). Biological markets. *Trends in Ecology and Evolution*, *10*(8), 336-339(4).
Nowak, M., Page, K., & Sigmund, K. (2000). Fairness versus reason in the ultimatum game. *Science*, 289(5485), 1773.
Nowak, M. A., & Sigmund, K. (2004). Evolutionary dynamics of biological games. *Science Signalling*, 303(5659), 793.
Rawls, J. (1971). *A theory of justice*. Cambridge, Mass.,: Belknap Press of Harvard University Press.
Robinson, P., & Kurzban, R. (2006). Concordance and conflict in intuitions of justice. *Minn. L. Rev.*, *91*, 1829.
Rosanvallon, P. (2011). *La société des égaux*, Paris: Seuil.
Roemer, J. (1985). Equality of talent. *Economics and Philosophy*, *1*(2), 151-181.
Schelling, T. C. (1960). *The strategy of conflict*. Cambridge,: Harvard University Press.
Schmidt, M., & Sommerville, J. (2011). Fairness Expectations and Altruistic Sharing in 15-Month-Old Human Infants. *PLoS ONE*, *6*(10).
Sénik, C. & Grosfeld, I. (2005) The Emerging Aversion to Inequality. Evidence from Poland 1992-2005, *Economics of Transition*, 2010, 18(1) 1–26.
Testart, A. (2012), 2012 *Avant l'histoire : l'évolution des sociétés, de Lascaux à Carnac*. Paris : Gallimard.
Trivers, R. (1971). Evolution of Reciprocal Altruism. *Quarterly Review of Biology*, *46*, 35-57.
Warneken, F., Lohse, K., Melis, A. P., & Tomasello, M. (2011). Young Children Share the Spoils After Collaboration. *Psychological Science*, *22*(2), 267.

<u>Caractère structurant pour PSL*</u> - Préciser comment le projet permettra de développer, dans le cadre de recherches interdisciplinaires ou disciplinaires, des collaborations entre les établissements de PSL* et/ou de nouvelles thématiques de recherche afin de contribuer à la structuration d'ensemble de la recherche au sein de PSL*. (2 000 caractères maximum) :

Understanding the evolution of fairness requires careful interdisciplinary integration. The evolution of fairness indeed cuts across multiple research domains: evolutionary biology, behavioural economics, and cognitive psychology. The overarching goal of my research is to integrate these domains in order to achieve a more holistic understanding fairness in general, and of its evolution in particular. The scientific environment of PSL would be ideal for me to successfully develop this line of work as it allows for seamless collaborations with researchers working in multiple fields of Cooperation.

1. My project capitalizes on existing collaborations between biologists working on evolutionary game theory at the **Institut de Biologie at ENS** and economists working on equilibrium methods at the **CEREMADE at Dauphine University** (cf. workshop "Biology and game theory" coorganized by Jean-Baptiste André, ENS and Yannick Viossat, Dauphine, as well as André and Viossat, in prep.). This environment is particularly important to develop partner-choice theory, as it relies on **evolutionary game theory** (Nowak and Sigmund 2004), and **equilibrium refinement methods from microeconomics** (Fudenberg and Tirole 1991).

2. My project also relies on existing collaborations between the **Institut de Biologie at ENS** and the **Institut d'Études Cognitives at ENS** (cf. co-supervision of Master and PhD students in evolutionary psychology, as well as co-authored papers such as Baumard, André and Sperber, in press). It will aim at further integrating evolutionary approaches with the study of social cognition using cognitive and developmental psychology, cognitive anthropology and analytical philosophy, all of which are all extremely well-represented research domains at the **Institut d'Études Cognitives at ENS.**

3. My project takes advantage of existing program of research at PSL using economic games both at the **Institut de Biologie at ENS** (Jean-Baptiste André) and at the **LEDa at Dauphine University** (Elodie Djemai).

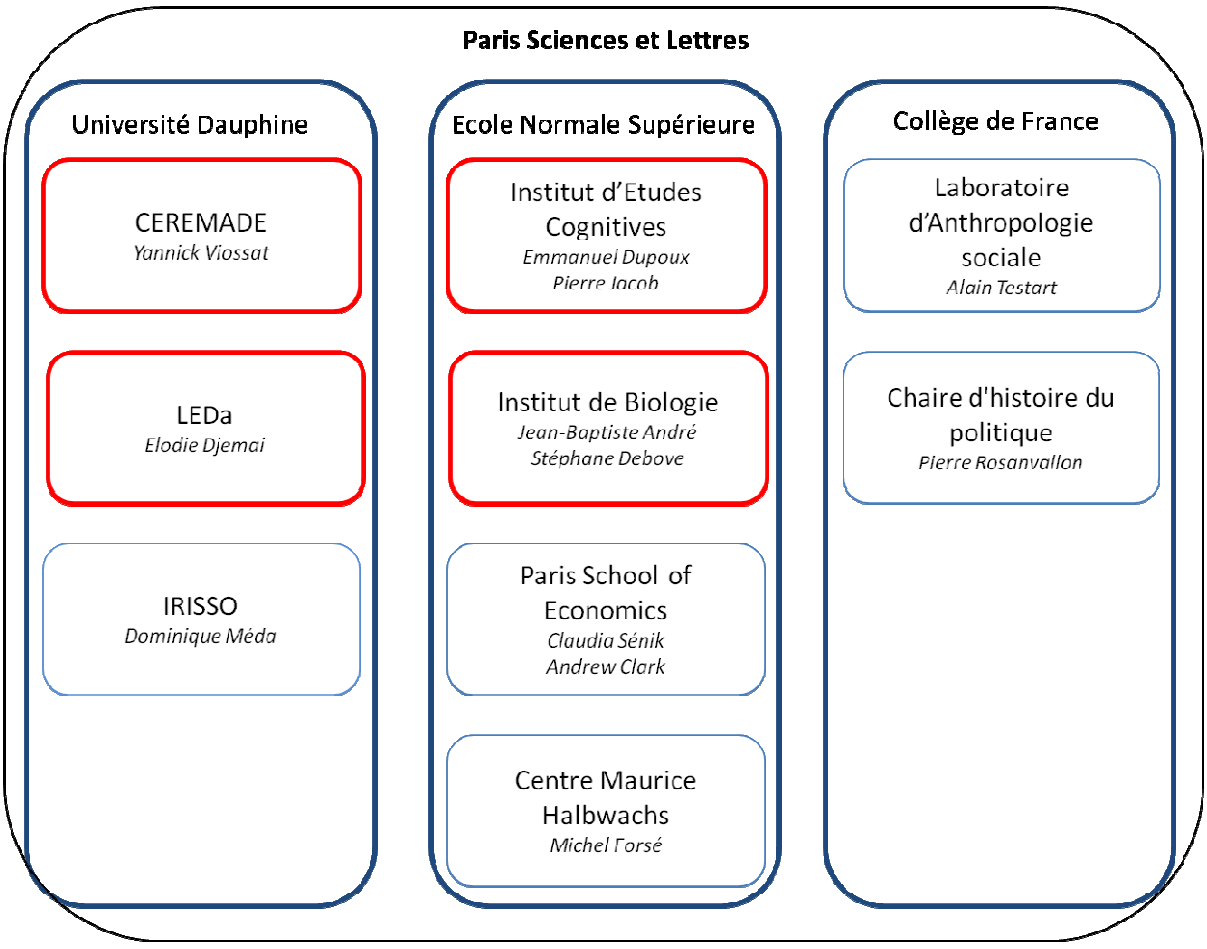
In the long term, my research program aims at integrating biological and cognitive approaches with social sciences (cf. the workshop I organised in 2007 "Le terrain d'un point de vue naturaliste" in collaboration with the **Institut d'Études Cognitives at ENS** and **Laboratoire d'Anthropologie at the Collège de France)**.

3. The great variability of judgements about inequalities and redistribution observed by economists (in particular Claudia Sénik at the **Paris School of Economics at the ENS**, see Sénik & Grosfeld, 2005), by sociologists (in particular Michel Forsé at the **Centre Maurice Halbwachs at the ENS**, see Forsé & Parodi 2010) and by anthropologists (in particular Alain Testart at the **Laboratoire d'Anthropologie at the Collège de France**) could derive from the interaction between a universal sense of fairness and variable cultural beliefs about whether one's society is truly meritocratic or not, i.e., whether it rewards talent and effort (see, for

instance, Alesina and Glaeser, 2004).

4. Finally, economists (in particular Andrew Clark, **Paris School of Economics at the ENS**), sociologists (in particular Dominique Méda, **Université Dauphine**) and political scientists (in particular Pierre Rosanvallon at **College de France**) have recently shown how inequalities negatively impact individual welfare (Clark and Oswald, 1996; Méda, 2008) and political stability (Rosanvallon, 2011), and have pointed out that this opposition to inequalities is deeply rooted in human psychology. My aim is to further investigate how evolutionary and cognitive approaches to fairness account for why equality matters so much to humans.

Chart of the research units involved in the project (in red: collaborators involved in the proposed project; in blue: longer term partners):



<u>Pour les Chaires d'excellence et les équipes recrutées sur des projets structurant,</u> préciser l'apport de l'établissement, les différents moyens mis à disposition par l'établissement d'accueil ainsi que la stratégie envisagée pour pérenniser l'équipe :

Social cognition is an important emerging field in cognitive sciences and the **Institut d'Études Cognitives** (IEC) is committed to creating a special unit dedicated to this research domain. In this perspective, social cognition is the recruitment priority for three components of the IEC: the **Laboratoire de Sciences Cognitives et psycholinguistique**, the **Laboratoire de Neurosciences**, and the **Institut Jean-Nicod**. Recruiting Nicolas Baumard through a « Chaire d'Excellence Junior » would constitute an important step in this process and would increase the chances of the IEC to recruit a wider team of scientists in social cognition at the CNRS and INSERM.

The IEC will provide office space to Nicolas Baumard in its 29, rue d'Ulm site. It will provide access to the experimental platforms necessary for the successful implementation of Aims 1 and 2 (e.g., testing booth for economic games, access to a database of families interested in taking part in research, etc.) as well as administrative and technical support in managing projects and in disseminating scientific information. More broadly speaking, the IEC provides plenty of training opportunities for young investigators. The IEC colloquium, which meets weekly, regularly discusses scientific finding in the domain of social cognition. In addition, the Jean-Nicod Lectures features some of the most prominent researchers in social cognition. In the past years, recipients included: Michael Tomasello, Elizabeth Spelke, Daniel Dennett.

<u>NB</u> : Si vous le souhaitez, Hélène Le Roux se tient à votre disposition pour vous aider à construire cette partie du projet.

<u>Le Porteur du projet</u> : Nicolas Baumard

CV court :

<u>ACADEMIC POSITIONS</u>

University of Pennsylvania, Philosophy, Politics and Economics Program, Post doctoral fellow, 2010 – present.
University of Oxford, Institute of Cognitive and Evolutionary Anthropology, Post-doctoral fellow, 2007 – 2010.

<u>EDUCATION</u>

PhD in Philosophy and Social Sciences, 2008, Mention Très Honorable avec les félicitations du jury, Institut Jean-Nicod (École des Hautes Etudes en Sciences Sociales) and Département d'Etudes Cognitives (École Normale Supérieure).

Lister au maximum 10 des principales publications du demandeur dans les 5 dernières années (Adapter en fonction du champ disciplinaire).

1. **Baumard, N.** *Comment nous sommes devenus moraux : Une histoire naturelle du bien et du mal*, Odile Jacob, Paris, 2010. (in review for Oxford University Press),
2. **Baumard, N.** and Boyer, P., (accepted) Religious Beliefs as Reflective Elaborations on Intuitions: A Modified Dual-Process Model, *Current Direction in Psychological Science*
3. **Baumard, N**., André, J.B. et Sperber, D. (in press) A mutualistic theory of morality, *Behavioral and Brain Sciences*, Target article.
4. **Baumard, N.,** Mascaro, O. et Chevallier, C. (2012) Preschoolers are able to take merit into account when distributing goods, *Developmental Psychology*.
5. **Baumard, N.** & Sperber, D. (2012) Evolutionary and cognitive anthropology, In Fassin, D. (Ed.), *Companion to Moral Anthropology*, Wiley-Blackwell.
6. **Baumard, N.** & Chevallier, C. (2012) What goes around comes around: The evolutionary roots of the belief in immanent justice, *Journal of Cognition and Culture*.
7. André, J.B. & **Baumard, N.** (2011) Social opportunities and the evolution of fairness, *Journal of Theoretical Biology*.
8. **Baumard, N.** (2011) Punishment is not a group adaptation, Humans punish to restore fairness rather than to support group cooperation, *Mind and Society*, 10, 1.
9. André, J.B. & **Baumard, N**. (2011) The evolution of fairness in a biological market, *Evolution*, 65, 1.
10. **Baumard, N.**, Boyer, P. and Sperber, D. (2010) Evolution of Fairness: Cultural Variability, (Letter to Henrich et al.'s "Markets, Religion, Community Size, and the Evolution of Fairness and Punishment") *Science* 23 July 2010 329: 388-389.

Pour les projets de chaire d'excellence :

CV détaillé du bénéficiaire de la Chaire : Nicolas Baumard

ACADEMIC POSITIONS

University of Pennsylvania, Philosophy, Politics and Economics Program, Post doctoral fellow, 2010 – .
University of Oxford, Institute of Cognitive and Evolutionary Anthropology, Post-doctoral fellow, 2007 – 2010.

EDUCATION

PhD in Philosophy and Social Sciences, 2008, Mention Très Honorable avec les félicitations du jury, Institut Jean-Nicod (École des Hautes Etudes en Sciences Sociales) and Département d'Etudes Cognitives (École Normale Supérieure).

Visiting student, Program « Cognition and Culture », 2003 – 2004, University of Michigan.

Master in Cognitive Sciences, 2003, École des Hautes Études en Sciences Sociales.

Licence and Master in Philosophy, licence : 2000, Mention Très bien, Université d'Aix-en-Provence; Maîtrise: 2002, Mention Très bien, Université de Paris IV.
Licence and Master in Social Sciences, licence : 2001, Mention Très bien, Université d'Aix-en-Provence; Maîtrise: 2002, Mention Très bien, Université de Paris IV.
Licence in Biology, Université Paris VI, 2002.

PUBLICATIONS

Note : All articles are available online at: http://sites.google.com/site/nicolasbaumard

Book

1. **Baumard, N.** *Comment nous sommes devenus moraux : Une histoire naturelle du bien et du mal*, Odile Jacob, Paris, 2010. (in review for Oxford University Press),

Articles and chapters:

2. **Baumard, N.** and Boyer, P., (accepted) Religious Beliefs as Reflective Elaborations on Intuitions: A Modified Dual-Process Model, *Current Direction in Psychological Science*
3. **Baumard, N**., André, J.B. et Sperber, D. (forthcoming) A mutualistic theory of morality, *Behavioral and Brain Sciences*, Target article.
4. **Baumard, N**. (forthcoming) Cultural norms: Transmitted behaviors or adapted response? Commentary on Gerkey, *Current Anthropology*.
5. Sperber, D. & **Baumard, N.** (in press) Morality and reputation in an evolutionary perspective, *Mind and Language*.
6. **Baumard, N.,** Mascaro, O. et Chevallier, C. (2012) Preschoolers are able to take merit into account when distributing goods, *Developmental Psychology*.
7. **Baumard, N.** (2012) The moral problem of group selection, Commentary on Pinker's The false allure of group selection, *Edge.*
8. **Baumard, N.** (2012) The evolution of cooperation: from networks to institutions, Commentary on Dunbar's Networking Past and Present, *Social Evolution Forum*, May 2012.
9. **Baumard, N.** & Sperber, D. (2012) Evolutionary and cognitive anthropology, In Fassin, D. (Ed.), *Companion to Moral Anthropology*, Wiley-Blackwell.
10. **Baumard, N.** & Chevallier, C. (2012) What goes around comes around: The evolutionary roots of the belief in immanent justice, *Journal of Cognition and Culture*.
11. **Baumard, N.** (2012) The restorative logic of punishment: Another argument in favor of weak selection, Comment on Guala's "Reciprocity: weak or strong? What *punishment* experiments do (and do not) demonstrate", *Behavioral and Brain Sciences*, 35 (2).
12. **Baumard, N**. & Liénard, P. (2011) Second or third party punishment? When self-interest hides behind apparent functional interventions (Letter to Mathew & Boyd's "Punishment sustains large scale cooperation in prestate warfare"), *Proceedings of the National Academy of Sciences*, 108 (39).

13. André, J.B. & **Baumard, N.** (2011) Social opportunities and the evolution of fairness, *Journal of Theoretical Biology*.
14. Bourrat, P., **Baumard, N.**, and McKay, R. (2011) Surveillance Cues Enhance Moral Condemnation, *Evolutionary psychology*.
15. **Baumard, N.** (2011) Punishment is not a group adaptation, Humans punish to restore fairness rather than to support group cooperation, *Mind and Society*, 10, 1.
16. André, J.B. & **Baumard, N**. (2011) The evolution of fairness in a biological market, *Evolution*, 65, 1.
17. **Baumard, N.** (2010) Has punishment played a role in the evolution of cooperation? A critical review, *Mind and Society*, 171-192, 9, 2.
18. **Baumard, N.**, Boyer, P. and Sperber, D. (2010) Evolution of Fairness: Cultural Variability, (Letter to Henrich et al.'s "Markets, Religion, Community Size, and the Evolution of Fairness and Punishment") *Science* 23 July 2010 329: 388-389.
19. **Baumard, N**. & Sperber, D. (2010) Weird people, yes but also weird experiments? Commentary to Henrich et al.'s « WEIRD people » (2010), *Behavioral and Brain Sciences.*
20. **Baumard N.**, André, J.B. et Morin, O. Les théories evolutionnaires en sciences humaines. In *Biologie évolutive* (2010), F. Thomas, T. Lefèvre, et M. Raymond (Eds.), Bruxelles : De Boeck.
21. Chevallier, C., **Baumard, N.**, Grèzes, J., & Pouga L. (2010) Comprendre les actions, émotions et états mentaux d'autrui : psychologie et neurosciences. In A. Berthoz, C. Ossola and B. Stock (Eds.), *La pluralite et les fondements cognitifs de la notion de point de vue*, Paris: Conférences du Collège de France.
22. **Baumard, N.** (2009). Psychologie évolutionniste et sciences sociales, In J.-B. Van der Henst & H. Mercier (Eds.), *Darwin en tête*, Grenoble : PUG.
23. **Baumard, N.** (2007). Comment réconcilier évolution, cognition et culture : une approche contractualiste de la morale. In C. Clavien & C. El Bez (Eds.), *L'éthique : l'inné et l'acquis*, Lausanne : Presses Universitaires de Lausanne.
24. **Baumard, N.** (2007). La morale n'est pas le social, *Terrain*, 48, 49-72.

Submitted articles and work in progress

6. Liénard, P., Chevallier, C., Mascaro, O., Kiura, P., and **Baumard, N.** (in review, *Cognition*) Moral development in a pre-state society.
7. **Baumard, N.** & Boyer, P., (submitted) Intuition, Reflection and Communication In the Building of Human Cultures.
8. **Baumard, N.** & Boyer, P., (submitted) 'How large-scale societies favor the emergence of moralizing religions'
9. **Baumard, N.**, Cova, F. & Chevallier, C., (in prep.) The trolley dilemma: Defective heuristics or adaptive judgments?
10. **Baumard, N.**, Chevallier, C., Mascaro, O. and Dezecache, G. (in prep.) 'It's only fair!' Reparative and retributive justice in young children
11. **Baumard, N**., Castelain, T., Reignier, D., Sebesteny, A. & van der Henst J. B., (in prep). Has morality evolved for the group or for the individual? Insights from cross-cultural psychology
12. **Baumard, N.**, Xu, J., Chevallier, C., Mascaro, O. & van der Henst, J.B., (in prep). The development of merit in non western societies

ORAL PRESENTATIONS

Invited presentations (selection)

The mutualistic theory of morality, Emory University, U.S.A., October 2012.
The mutualistic theory of morality, Rutgers University, U.S.A., April 2012.
The mutualistic theory of morality, Washington University, Saint Louis, U.S.A., June 2011.
The mutualistic theory of morality, University of California, Santa Barbara, U.S.A., April 2011.
Are religious beliefs metarepresentational?, University of Oslo, Norway, June 2009.
Morality and Reputation in an evolutionary perspective (avec D. Sperber), Rome, Italy, April 2007.

International conferences (selection)

Why do people believe in immanent justice?, International Association for the Study of Religion Conference, Toronto, Canada, août 2010.
The cognitive basis of religion: The case of immanent justice, "Society for the Scientific Study of Religion", Denver, Etats-Unis, octobre 2009.

Why do people believe in immanent justice? “European Evolution and Human Behabiour Association”, St. Andrews, Royaume-Uni, avril 2009.
A contractualist approach to the evolution of reciprocity, “Reciprocity: Theories and Facts, Milan, Italie, février 2007.

TEACHING

Psychological aspects of public policies (University of Pennsylvania) Introduction to evolutionary psychology and its relevance for understanding happiness, Positive psychology, Heuristics and biases, Inequality and well-being (Sring 2012, Fall 2012, 36h).
Problems of collective actions and the supply of public goods (University of Pennsylvania) Prisionner’s dilemma, Theory of reciprocity, rational choice approaches to institutions, Case studies, International comparisons (Fall 2011, Fall 2012, 36h).
March –April 2013: Invited Professor on moral psychology at the OPEN MIND master program in cognitive science, University of Bucharest, Romania.
Social Cognition (Master of Cognitive Sciences ENS/EHESS) Theory of mind, Primate cognition, Evolution of social cognition, Cooperation, Communication, Social emotions (2006-2007, 12h).
Anthropologie cognitive (Master of Cognitive Sciences ENS/EHESS) Evolutionary psychology, Communication and cognition, Religious beliefs, Moral norms (2006-2007, 10h).
Introduction to Sociology (Licence 3, Burgundy Business School, Dijon) Rational choice theory, Game theory, Collective action problems, Case studies in sociology of organization (2006—2007, 15h).
Evolution, Cognition, Culture (Master of Cognitive Sciences ENS/EHESS) Evolutionary psychology, Communication and cognition, Religious beliefs, Moral norms (2005-2006, 6h).
Introduction à la psychologie (Licence 3 of Sciences of education, University of Versailles Saint-Quentin) Experimental psychology, Social cognition, Numerical Cognition, Psycholinguistics (2004-2005, 12h).

Students supervision

Master 2 (Master of Cognitive Sciences ENS/EHESS, Paris):
- 2011-2012 : Jordanne Boudousseul “Moral responsibility and fairness theory”
- 2011-2012 : Stephane Debove “The evolution of fairness by partner-choice”

Master 1 (Master of Cognitive Sciences ENS/EHESS, Paris):
- 2008 – 2009 : Paul-Arthur Patarin « Cognitive biases and immanent justice »
- 2008 – 2009 : Guillaume Dezecache « The development of justice in young children »
- 2008 – 2009 : Pierrick Bourrat « Moral judgment and réputation managment»

Licence 3 (Master of Cognitive Sciences ENS/EHESS, Paris):
- 2008 – 2009 : Mélanie Démeraux « Moral dilemma»
- 2008 – 2009 : Stéphane Debove « The development of justice in young children »

SERVICE TO THE COMMUNITY

Ad hoc Reviewer

Psychological Bulletin, Proceedings of The Royal Society B, Cognition, Developmental Psychology, Journal of Cognition and Culture, Human Behavior and Evolution, Ethnos: Journal of Anthropology, Philosophy and Biology, Review of Philosophy and Psychology, Cognitive Science Annual Conference, Cognitio: Young researchers conference in cognitive science, Société de Philosophie des sciences, Société de Philosophie Analytique.

Diffusion to the general public

Newspapers and magazines

Series of articles in *Cerveau & Psycho* on *Pourquoi nous sommes devenus moraux* :
- La morale a-t-elle engendrée la religion, November-Décembre 2011
- Les inégalités sont-elles acceptables ?, July-August 2011
- Et si les droits de l’homme étaient vraiment universels ?, May-June 2011

(with Chevallier, C.) L'empathie : base de la vie en société ? Réponse à Franz de Waal, *Sciences Humaines*, February 2011.
Cessons de parler de "valeurs chrétiennes", *Le Monde* 25/12/2010

(with André J.B.) Darwin et Avatar : La ressemblance entre espèces indépendantes est une conséquence de la théorie de l'évolution. Pas une épine dans son pied, *Le Monde.fr* 27/01/2010.
(with Sperber, D.) Délit de solidarité : qu'en disent les psychologues?, *Cerveau et psycho*, January 2010.

Radio

« Une histoire naturelle du juste », avec Antoine Garapon, France Culture, 29/01/2011
« Autour de la question » avec Caroline Lachowsky, RFI, 18/11/2010
« Le Journal des nouveaux Chemins de la connaissance » avec Adèle Van Reeth, France Culture, 17/11/2010.
« L'invité du 6/7 » avec Audrey Pulvar, France Inter, 25/10/2010.
« Sommes-nous naturellement gentils ? » animé par Julie Clarini et Brice Couturier, France Culture, 26/05/2010
« Existe t-il des gènes du bien et du mal ? » animé par Olivier Postel-Vinay, Rencontre avec le magazine Books au Centre Georges Pompidou, 26/05/2010.
« L'empathie est-elle innée ? » animé par Julie Clarini et Brice Couturier, avec Franz de Waal et Pascal Picq, France Culture, 26/05/2010.

Blogging at the International Cognition and Culture Institute

Small selection of posts (more at www.cognitionandculture.net):
- Cultural relativism: Another victim of Arab revolutions?, March 2011
- Philippa Foot, Famous Philosopher, Unknown Anthropologist (1920-2010), October 2010.
- Is there a language instinct?, Mai 2010.
- Better live in Sweden than in the US: Why more equal societies do better?, March 2010.
- Elinor Ostrom: Nobel Prize in anthropology!, October 2009.
- The universality of music, October 2009.

Organisation of seminars and workshops

Workshop « Le terrain d'un point de vue naturaliste : approches évolutionnaires et cognitives en sciences sociales », avec D. Andler, 5-6 June 2007, Paris IV.
Séminaire « Psychologie morale » avec P. Jacob, E. Dupoux et P. Schlenker, 2006-2007, DEC.
Séminaire étudiant « Alphapsy : Anthropologie et Psychologie », 2004-2006, DEC.

<u>Composition de l'équipe et Budget du projet</u> :

Préciser la composition de l'équipe en indiquant pour les étudiants en thèse leur site d'inscription (PSL, établissement partenaires de PSL …)

Il est possible d'ajouter autant de lignes que nécessaire dans les tableaux ci-dessous

Prénom NOM	Statut	Laboratoire ou structure	Nom de l'équipe
Nicolas Baumard	Porteur du projet	University of Pennsylvania	Philosophy, Politics and Economics
Projet 1			
To Be Named	Post-doc Fellow		
Jean-Baptiste André	DR1, CNRS	UMRS 7625 Evolution et Ecologie, IBENS	Eco-Evolution Mathematique
Stéphane Debove	Ph.D. Student	UMRS 7625 Evolution et Ecologie	Eco-Evolution Mathematique
Projet 2			
Emmanuel Dupoux	Professeur, EHESS	IEC	LSCP
Pierre Jacob	DR1, CNRS	IEC	IJN
Projet 3			
Yannick Viossat	MdC	Dauphine	CEREMADE
Jean-Baptiste André	CNRS, CNRS	UMRS 7625 Evolution et Ecologie	Eco-Evolution Mathematique
Stéphane Debove	Ph.D. Student	UMRS 7625 Evolution et Ecologie	Eco-Evolution Mathematique

Pour chaque type de dépense, merci de préciser la nature de la dépense envisagée

Nature de la dépense	Coût (en €)	Budget demandé (en €)
1. Missions		
Travels PI Travels Aim 1	6000 10 000	
2. Équipement		
Expendable supplies Computers Licences	1000 4000 1000	
3. Fonctionnement		
Participants Honoraria Publications costs	5000 5000	
4. Dépenses de personnels		
PI Post-doctoral researcher 3 Master students	65 000 50 000 3000	
5. Autres		
TOTAL	131 000	

Budget justification

A. PERSONNEL

Nicolas Baumard. Salary is requested for 24 months.

Post-doctoral Fellow. Salary is requested for 24 months. A post doc specialized in economic games will be recruited for Aim 1. The post doc will design the experiments in collaboration with Nicolas Baumard and will be in charge of programming the experiments, obtaining approval from the ethics committee, recruit participants and process data. The post doc will co-write the outputs of Aim 1 with Nicolas Baumard.

B. SUPPLIES

Expendable supplies: 1000€ per year is requested for expendable supplies, including thumb drives, routine office supplies and other expendables.

Computers: 4000€ are requested for two computers, for Nicolas Baumard and the post-doc fellow.

Licenses: 1000€ in Year 1 is requested for yearly renewal of SPSS and Mathematica as well as other software needs (e.g., Adobe Photoshop, Microsoft Office).

Travel: 6000€ are requested each year to offset the costs of travel for Nicolas Baumard and the Post-doctoral fellow to international meetings and workshops. 5000€ are requested to fund the travel and expenses of Pierre Lienard and Xu Jing to Kenya and China (fieldtrips).

Participants Honoraria: 4000€ are requested for economic games and 1000€ for developmental experiments. In economic games, the 150 participants will be offered actual sums of money to distribute and will be compensated for their time. In developmental experiments, parents will be compensated at a rate of 10€ per hour for coming to the lab.

Publications costs: 5000€ are requested to cover publication costs (color Figures, open access journals, etc.). Color figure costs range between 200€ to 400€ on average depending on the journal. Open access journal charge between 800€ and 1600€ on average (see e.g., *PLOS ONE* US 2012 rate: $1350).

Afin de permettre au jury d'évaluer la pérennité du projet, merci de préciser les autres financements des équipes participant au projet

Montant du financement	Identification du financeur	Le financement est-il acquis ou demandé ?
9 000€	Institut Ecologie et Développement, CNRS (Projet PEPS) Porteur : J.B. André	Acquis
100 000€	Bourse de thèse Ile-de-France Porteur : S. Debove	Acquis

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Dan Sperber

83 rue Notre Dame des Champs
75006 Paris

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dan@sperber.fr
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November 13, 2012

TO WHOM IT MAY CONCERN

Nicolas BAUMARD is applying for a "chaire d'excellence" junior at PSL, with the support of the Institut d'Étude de la Cognition of the École Normale Supérieure and I am writing in support of his application. He is one of the very best students I have ever had or, for that matter, one of the very best students I ever met in my long career. He is, in my opinion an absolutely first rate candidate and his election would have extremely positive effects not only for the Institut d'Étude de la Cognition but also for the development of interdisciplinary work at PSL.

As a student, Nicolas Baumard was already aiming at interdisciplinary work, not by nibbling at various disciplines as too many do, but by acquiring proper competencies in several disciplines, viz. biology, sociology, philosophy and cognitive science, in each of which he earned an undergraduate degree. He then began a doctorate on the natural bases of morality under my supervision. Not only did he become, as I mentioned one of my very best doctoral students ever, but he is the one from whom I have learned the most myself, causing me to revise and extend my anthropological understanding of morality (a topic which had long been of interest to me).

During the PhD years, Nicolas Baumard's interest for morality and its evolution, his extended knowledge of the topic and his initial ideas progressively evolved into an unmatched competence, a masterful project and a well-thought-through theoretical approach. The resulting dissertation is a truly important contribution to research on a theme of major relevance for the cognitive and social sciences and for evolutionary approaches to cooperation. Earlier mutualistic approaches had, thirty years ago or so, been generally recognised as insufficient to account for human cooperation, and much important work had since focused on altruistic approaches based on group selection. The mutualistic approach developed by Nicolas Baumard, based as it is on the idea of a cooperation market with partner

choice rather than on partner control, offers a novel and powerful defence of mutualism. As he shows, it provides fine-grained explanations of experimental results in behavioural economics and cognitive studies of morality, as well as of anthropological observations that compare favourably to those of alternative approaches.

Nicolas Baumard's thesis has been published in French under the title *Comment nous sommes devenus moraux : Une histoire naturelle du bien et du mal* and a English edition of this excellent book is in project at Oxford UP.

After his PhD, Nicolas Baumard has during two post-docs developed the ideas of the thesis and publishes several excellent articles based on it. He has moreover acquired further competencies in experimental psychology and in cross-cultural research that have allowed him to much deepen and enlarge his research.

In his first post-doc at Oxford with Harvey Whitehouse (supported by the European interdisciplinary project "Explaining Religion"), Nicolas Baumard has worked on cultural and developmental aspects of morality, developed new experiments, and established collaborations to perform these experiments in several cultures around the world. Some of his remarkable results are being published in *Developmental Psychology,* the *Journal of Cognition and Culture,* and *Evolutionary psychology.*

In his second post-doc at the University of Pennsylvania with Cristina Bicchieri he has become involved in experimental research in behavioural economics and has developed formal foundations for his approach. Together with Jean-Baptiste André, he has published in the *Journal of Theoretical Biology* and in *Evolution* two important articles expounding these formal ideas. He has written a major article (to which André and I have collaborated) forthcoming in *Behavioral and Brain Science*, "An evolutionary approach to morality", that is being published with the commentaries of about twenty of the main specialists in the field and our reply.

Nicolas Baumard project for his application to a PSL chair is not only an example of the very best research in this "hot" interdisciplinary domain, it is also highly relevant to the future of this kind of research in France. While interdisciplinary research is reasonably well supported when it is a matter of financing projects, recruitment of researchers optimally competent to carry out such projects is highly problematic. The PSL junior chairs are, from this point of view, a unique occasion to recruit a world-class young researcher, initially trained in France and whose outstanding original contribution is receiving more and more international attention.

Nicolas BAUMARD is, in his field, one the best scholar of his generation worldwide. He is also a very dynamic team player. At the Institut d'Étude

Cognitive, at the ENS and at PSL, he would, I know, make a major contribution to new synergies and help us offer the best to our top students. I support his application with unqualified enthusiasm.

Dan Sperber

Directeur de Recherche émérite au CNRS, Institut Jean Nicod
Professor of Cognitive Science and of Philosophy at the Central European University, Budapest

Member of the Academia Europaea
Foreign honorary member of the American Academy of Arts and Sciences
Corresponding Fellow of the British Academy
Fellow of the Cognitive Science Society
Fellow of the Association for Psychological Science

Washington University in St. Louis
ARTS & SCIENCES

Pascal Boyer
Henry Luce Professor of Individual and Collective Memory

4 Janvier 2012

Chaires d'Excellence – Projet de Nicolas Baumard
"The Evolution of Fairness by Partner-choice: An Interdisciplinary Approach"

Recommendation

Mesdames, Messieurs,

C'est avec plaisir que je recommmande à votre attention le dossier de candidature de Nicolas Baumard, dont j'ai suivi avec intérêt les recherches depuis cinq ans. Nicolas Baumard est l'un des meilleurs spécialistes actuels de la psychologie cognitive du sens moral. Son travail en cours et ses projets en font un candidat idéal pour une des chaires d'excellence (junior) proposées par le PSL.

Arrière plan des travaux du candidat.

Le raisonnement moral est l'objet de controverses depuis l'origine de la philosophie, et ce n'est que récemment qu'il est entré dans le domaine de la psychologie expérimentale. Après les travaux d'Eliot Turiel, qui montrait le développement précoce des intuitions morales et de la distinction entre règle morale et convention sociale ches les jeunes enfants, les psychologues sociaux et cognitifs ont élaboré divers paradigmes expérimentaux pour évaluer les principles sous-jacents des intuitions morales. L'un des principaux développements récents dans ce domaine souligne l'importance des émotions dans le judgement moral. Au rebours des modèles classiques, kantiens notamment, il semble que la plupart des sujets aient des intuitions morales précises et stables, mais dont les principes ne sont pas consciemment accessibles, sinon sous la forme d'émotions (pitié, indifférence, fierté, etc.). La psychologie morale expérimentale ne dispose pas de modèle d'ensemble pour expliquer l'origine et les modalités de ces émotions – sinon l'hypothèse que nos émotions morales sont le produit de notre évolution et qu'elles facilitent la vie sociale. Mais cela n'est pas assez pour prédire et expliquer comment un contexte et une situation particulière déclenchent une émotion spécifique.

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Ce que le candidat apporte de nouveau

C'est sur ce point que le travail de Baumard est un apport décisif à une perspective cognitive sur la psychologie morale. Pour expliquer les résultats complexes et souvent paradoxaux des protocoles utilisés dans ce domaine, Baumard a pris pour hypothèse que les intuitions morales sont dirigées par un ensemble de principles "contractualistes", c'est à dire proches des notions de contrat social et de mutualisme exposées dans les philosophies politiques de Rousseau, Rawls et Gauthier. Baumard utilise une traduction computationelle de ces principes pour prédire et expliquer les résultats d'obversation et d'expérimentation dans le domaine.

Cette approche cognitive se distingue notamment de deux autres perspectives courantes dans le domain, à savoir [a] le "sentimentalisme moral" et [b] la logique de sélection de groupes. La première voit dans les intuitions morales les effets d'un sentiment général de sympathie envers les autres. La seconde fait des intuitions morales le résultat de contraintes évolutives qui favoriseraient les comportements pro-sociaux à l'intérieur du groupe. Mais aucune de ces deux perspectives n'explique les changements contextuels dans les intuitions des sujets qui sont observés et répliqués dans les expériences classiques, notamment dans les fameux "problèmes de trolley" (peut-on, doit-on par exemple pousser une personne sous un train pour le bloquer et sauver ainsi la vie de plusieurs autres?).

L'un des avantages des modèles contractualistes est de founir une explication économique des résultats expérimentaux dans ce domaine, sans avoir recours à des mécanismes ou principles *ad hoc*. Un autre avantage est d'expliquer les différences culturelles dans les intuitions morales (par exemple, est-il permis, recommandé, interdit de tuer qui vous a insulté?). Bien que les principes soient similaires, les effets d'un comportement (insulte) sur le bien-être des autres varie considérablement d'une culture à une autre, et a donc pour résultat des émotions différentes. Finalement, l'approche cognitive de Baumard fait de l'évolution de la moralité un résultat de la compétition entre stratégies de coopération – il n'est pas necéssaire d'invoquer d'autre principe que la variation et sélection des motivations individuelles.

La perspective à long terme

Pour ce qui concerne l'avenir, les travaux de Baumard amènent à des hypothèses novatrices, précises et testables sur les changements contextuels d'intuitions morales. C'est sur ce domaine que Baumard a maintenant choisi d'orienter l'essentiel de ses efforts de recherche. Il s'agit de montrer qu'une approche cognitive du raisonnement moral peut conduire à une expérimentation raffinée dans le domaine des intuitions adultes, de leur développement au course de l'enfdance ainsi que de leurs différences culturelles.

Au cours des deux dernières années, Nicolas Baumard a rédigé un ensemble d'articles portant sur les conséquences empiriques de son approche cognitive, et sur les problèmes engendrés par les approches "sentimentaliste" ou utilitariste. Il a aussi entrepris des travaux de collaboration scientifique avec divers partenaires, J'ai eu le plaisir de l'accueillir dans mon laboratoire à Washington University, St. Louis, pour travailler sur

l'interaction entre intuitions morales et concepts religieux. Nous préparons deux articles sur ce thème. Il a également engagé une collaboration avec Harvey Whitehouse et divers membres des départements d'anthropologie et de sciences cognitives à Oxford, qui lui permet de développer ses travaux sur la variation culturelle dans les intuitions morales.

Nicolas Baumard est maintenant connu dans le monde de la psychologie morale comme l'un des principaux tenants de l'approche cognitive expérimentale, et comme un chercheur au travail particulièrement rigoureux et précis. Ses hypothèses sur le caractère contractualiste des intuitions morales sont bien connues des spécialistes et sont l'oibject de vives discussions et d'expérimentation. Je suis sûr que Nicolas Baumard apportera de nombreuses autres contributions, également brillantes, à ce domaine de la psychologie et des sciences cognitives. C'est pourquoi je n'ai aucune hésitation à recommander son dossier à l'attention de votre commission.

Meilleurs sentiments

University of Oxford

School of Anthropology
AND MUSEUM ETHNOGRAPHY
51 Banbury Road, Oxford, OX2 6PE

17 November 2012

Dear Sir or Madam,

Letter of Recommendation of Dr Nicolas Baumard

Dr Baumard's research is of high scholarly importance. Explaining human cooperation and moral reasoning has become a major focus in games theory and the evolutionary sciences, with fields such as developmental psychology and cultural anthropology making important recent contributions as well. It is not only a 'hot' area but one in which original and high-impact contributions are still to be expected. Moreover, at a time when systems of economic and political regulation are failing, and traditional approaches to explaining this are being called into question, new research on human propensities and capacities for cooperation and fairness are needed with growing urgency. Most previous efforts to explain cooperation have approached the topic from a Darwinian, cognitive, or socio-cultural perspective. A rounded explanation of the phenomenon would combine these approaches and that is Dr Baumard's ambitious aim. Dr Baumard has already designed and carried out a series of highly original and methodologically sophisticated studies in the proposed area of research as part of my EU-funded project on which he was employed here in Oxford.

Dr Baumard's publication record to date is impressive for stage of career and augurs well for a prolific future. The wide range of co-authors reflects the international character of his research collaborations. During his graduate career, Dr Baumard established especially important international links through the Culture and Cognition Programs at the University of Michigan and the Central European University at Budapest. More recently his research networks were further expanded through his employment on the 'explaining religion' project, which provided fruitful opportunities to work under the guidance of Pascal Boyer at Washington University at St Louis, as well as his former doctoral supervisor, Dan Sperber (CNRS, Paris). Working as part of a team here in Oxford, Dr Baumard built on his knowledge of methods from experimental psychology and anthropology, acquiring also new skills in computational modelling.

The products of Dr Baumard's research here in Oxford have been impressive. He recently had articles published in *Behavioural and Brain Sciences* ("A mutualistic approach to morality"), *Journal of Theoretical Biology* (on the evolution of fairness) and *Developmental psychology* (on the development of merit among young children).

I have no hesitation in recommending Dr Baumard to you in the highest possible terms.

Yours faithfully,

Harvey Whitehouse
Chair of Social Anthropology,
Professorial Fellow of Magdalen College,
Director of the Institute of Cognitive and Evolutionary Anthropology,
University of Oxford

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Département d'études cognitives (DEC)
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Paris, 15/11/2012

To whom it may concern:

Dear colleagues,

Nicolas Baumard is an outstanding young researcher doing pioneering **interdisciplinary** work on the *evolutionary basis and the psychological mechanisms of human morality*. Dan Sperber is writing a letter in support of his application where he will describe his scientific research in great detail. I will here focus on the strong institutional reasons that we have, besides his scientific excellence, for supporting this application.

We know Nicolas Baumard well at the Institut d'Etude de la Cognition of Ecole normale supérieure (IEC). While he was working on his PhD with Dan Sperber at the UMR CNRS Institut Jean Nicod, he interacted with students and young researchers not only in Sperber's very dynamic research group, but also in other labs and more generally in the Ecole normale supérieure (where he had founded a student reading and discussion group, Alphapsy, on evolution cognition and culture, which put online a pioneering scientific blog). Nicolas Baumard was thus greatly appreciated not only for his research, not only for his intelligence and competence, but also for his sense of team work, for his personal dynamism, and for his interdisciplinary interests and enthusiasm. The qualities he demonstrated then have developed and matured in his five years abroad as a post-doc. He has produced outstanding publications and his work, in particular with the forthcoming publication of his article (with André and Sperber) "An evolutionary approach to morality" in *Behavioral and Brain Science* (with some twenty commentaries of major scholars in the field), is gaining international recognition.

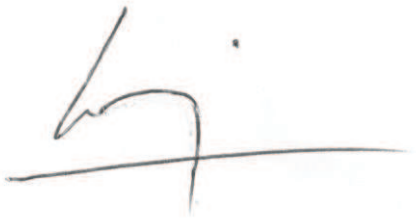
During the same period, new research themes have emerged at the IEC, to which Nicolas Baumard is in a position to make a major contribution both from a scientific and from an organisational point of view. More specifically, several of the labs at the IEC have invested in the study of *social cognition*, with *moral cognition* as a one of the main focus. This, incidentally, is a topic that attracts many of the best applicants for doctoral positions in the Institute. We want to further develop and integrate research in this fast-moving, cutting-edge domain. We need for this a fully involved scholar, with the kind of competencies and enthusiasm that Nicolas Baumard has demonstrated.

Nicolas Baumard's project is interdisciplinary not just within but also beyond the IEC. Beside cognitive psychology, it draws on and contributes to evolutionary biology and to behavioural economics. Nicolas Baumard is involved in close collaboration with the evolutionary biologist Jean-Baptiste André at the dept de Biologie (IBENS) at the ENS. He is initiating a common project with André and the economist Yannick Viossat from the **CEREMADE** at the University of Dauphine (a

component of PSL). He is proposing further interdisciplinary collaboration with other economists and social scientists at PSL.

For all those reasons, the IEC warmly supports Nicolas Baumard's application to this **Junior Chair** of *Paris Sciences & Lettres*. If successful, Nicolas Baumard will receive all possible support (i.e., technical, administrative, and financial support) from the IEC.

Yours sincerely,



Prof. Christian Lorenzi, head of IEC/ DEC
Ecole normale supérieure, Paris Sciences & Lettres, Paris