



Evaluation Report

Coalitions and Alliances Working Group

April 16-18, 2009

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Executive Summary

Brief Synopsis of Event

This report is an evaluation of a NIMBioS Working Group entitled “Coalitions and Alliances,” which held its first meeting at NIMBioS April 16-18, 2009. NIMBioS Working Groups are chosen to focus on major scientific questions at the interface between biology and mathematics. NIMBioS is particularly interested in questions that integrate diverse fields, require synthesis at multiple scales, and/or make use of or require development of new mathematical/computational approaches. NIMBioS Working Groups are relatively small (10-15 participants), focus on a well-defined topic, and have well-defined goals and metrics of success. Working Groups will typically meet 2-3 times over a two-year period, with each meeting lasting 3-5 days; however, the number of participants, number of meetings, and duration of each meeting is flexible, depending on the needs and goals of the group.

The Coalitions and Alliances group comprised 10 participants, including co-organizers NIMBioS Associate Director Sergey Gavrilets and Frans de Waal from Emory University (See Appendix C for a full listing of participants). All participants were university faculty involved in both teaching and research at four-year universities. Participants came from several different areas of research, including primate behavioral ecology and mathematical modeling of biological and social phenomena (See Appendix B for a detailed listing).

The main goal of the Coalitions and Alliances Working Group was to bring together empiricists and theorists to work toward identifying the most promising ways for building a testable quantitative theory of coalition formation. The focal questions to be answered by the Working Group were:

- What data are available?
- What modeling techniques are available?
- What are the empirical patterns that cannot be explained by existing theories/data?
- How can existing models be adapted to fully use available data?
- What kinds of data are needed to better inform the models?
- What new modeling techniques and methods need to be developed?

Evaluation Design

An electronic survey aligned to the following evaluation questions was designed by the Evaluation Coordinator with input from the NIMBioS Director and Deputy Director:

1. Were participants satisfied with the Working Group overall?
2. Did the meeting meet participant expectations?
3. Do participants feel the Working Group made adequate progress toward its stated goals?
4. Do participants feel they gained knowledge about the main issues related to the research problem?
5. Do participants feel they gained a better understanding of the research across disciplines related to the Working Group's research problem?
6. What impact do participants feel the Working Group will have on their future research?
7. Were participants satisfied with the accommodations offered by NIMBioS?
8. What changes in accommodations, group format, and/or content would participants like to see at future meetings?

The final instrument was hosted online via UT's secure online survey host mrInterview. Links to the survey were sent to the eight Working Group participants (the two organizers were not expected to respond to the survey) on April 20, 2009. Reminder emails were sent to non-responding participants on April 23 and April 27, 2009. By May 4, 2009, eight participants had given their feedback, for a response rate of 100%.

Highlights of Results

- Overall satisfaction with the Working Group was high among evaluation survey respondents, all of whom indicated they either agreed or strongly agreed that the Working Group was productive and met their expectations.
- 100% of respondents indicated they either agreed or strongly agreed that they would recommend participating in NIMBioS Working Groups to their colleagues.
- Overall, respondents reported being very satisfied with the travel, housing, and other amenities provided by NIMBioS during the Working Group.
- Overall, respondents reported high levels of learning, with 75%-100% either agreeing or strongly agreeing that they have a better understanding of the main issues related to the group's research problem as a result of participating in the Working Group
- 100% of participants indicated having a better understanding of the modeling techniques available for research on coalition formation as a result of attending the Working Group.
- 88% of participants said gaining an understanding of the research going on in other disciplines was the most useful aspect of the Working Group.
- All respondents agreed that the format of the Working Group was very effective for achieving its goals, and that the Working Group made adequate progress toward its primary goal for the first meeting: finding a common language across disciplines for coalition formation research.
- All respondents indicated they felt that the exchange of ideas that took place during the Working Group would initiate or influence their future research.
- Two-thirds of respondents said that, while they don't have a solid plan in place yet, they do plan on developing collaborations with other Working Group participants.

Conclusions and Recommendations

Overall, the Working Group was very successful in accomplishing its goals. Working Group participants were satisfied with the meeting, indicating that it was a productive experience that met their expectations. Participants were also highly satisfied with the travel, housing, and other amenities offered by NIMBioS. All participants also indicated high levels of learning about the issues surrounding the research problem of the Working Group, as well as gaining a better understanding of the research going on in disciplines other than their own. Participants felt that adequate progress was made toward the goals of the Working Group, but that it would take several more meetings before the goals could be fully realized.

Several participants indicating they planned to take the knowledge they gained during the Working Group and apply it to their own research. Participants also reported that plans for collaborative research with other Working Group participants were in the making, although no one had a solid plan in place yet.

While most participants could not think of ways to improve future meetings, several suggestions were offered, including better clarification and communication of the group's goals, finding a way to involve invited participants who were not able to attend, and more formal planning of group activities and meals in the evenings.

Based on analysis of participant response data, the recommendations are as follows:

- Continue with the current format of the Working Group, but consider ways to more clearly articulate the Working Group's goals to all participants before and during the meeting to ensure everyone is clear on the direction in which the group is heading and how individual participants can contribute to it.
- Although the format of the Working Group does not lend itself to video conferencing the full time, consider the possibility of video conferencing relevant parts of the meeting with participants who are unable to attend.
- Consider making advance plans for group meals in the evening and/or other social events outside of NIMBioS.

Coalitions and Alliances Working Group Evaluation Report

Background

Introduction

A Working Group entitled “Coalitions and Alliances” met at NIMBioS April 16-18, 2009. The group was comprised 10 participants, including co-organizers NIMBioS Associate Director for Scientific Activities, Sergey Gavrilets and Frans de Waal from Emory University (See Appendix C for a full listing of participants).

NIMBioS Working Groups are chosen to focus on major scientific questions at the interface between biology and mathematics. NIMBioS is particularly interested in questions that integrate diverse fields, require synthesis at multiple scales, and/or make use of or require development of new mathematical/computational approaches. NIMBioS Working Groups are relatively small (10-15 participants), focus on a well-defined topic, and have well-defined goals and metrics of success. Working Groups will typically meet 2-3 times over a two-year period, with each meeting lasting 3-5 days; however, the number of participants, number of meetings, and duration of each meeting is flexible, depending on the needs and goals of the group.

The main goal of the Coalitions and Alliances Working Group was to bring together empiricists and theorists to work toward identifying the most promising ways for building a testable quantitative theory of coalition formation. The focal questions to be answered by the Working Group were:

- What data are available?
- What modeling techniques are available?
- What are the empirical patterns that cannot be explained by existing theories/data?
- How can existing models be adapted to fully use available data?
- What kinds of data are needed to better inform the models?
- What new modeling techniques and methods need to be developed?

Working Group Background

Coalition formation is known from a number of mammals including hyenas, wolves, lions, cheetahs, coatis, meerkats, and dolphins. In primates, both kin and non-kin and both within-group and group-level coalitions are a powerful means of increasing reproductive success, either through direct competition over food or mates or via achieving high dominance status by means of coalitions. This is what makes

primate rank-orders so complex and explains why scientists speak of "politics." In humans, coalitions occur at many different levels (ranging from within-family to between-nation states) and represent probably the most dominant factor in social organization throughout human history. In spite of their importance for biological, social and cultural evolution, our understanding of how coalitions and alliances are formed, maintained, and break down is limited.

Existing theoretical approaches for studying coalitions in animals are often rooted in cooperative game theory, economics, and operations research. These approaches are usually limited by consideration of coalitions of two individuals against one, focus on conditions under which certain coalitions are successful and/or profitable, and the assumption that individuals are able to evaluate these conditions and freely join coalitions that maximize their success. As such, models typically do not capture the dynamic nature of coalitions and/or are not directly applicable to individuals lacking the abilities to enter into binding agreements and to obtain, process, and use complex information on future costs, benefits, and consequences of different actions involving multiple parties. These approaches do not account for the effects of friendship and bonding and the memory of past events.

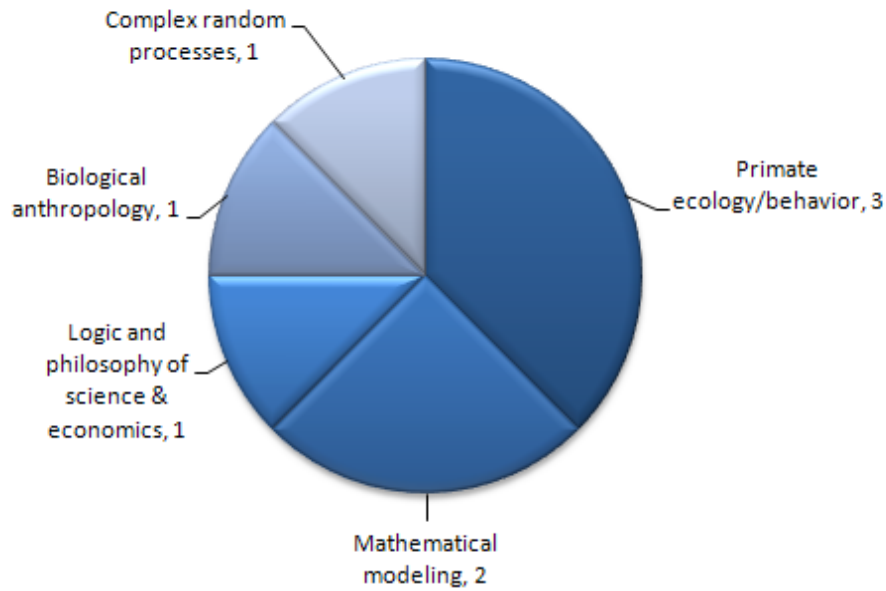
Within primatology these issues are often debated in terms of the cognitive complexity needed for reciprocal altruism, with some assuming high levels and others distinguishing among proximate mechanisms, not all of which are necessarily complex. Another complexity introduced in primate studies is that of the fission-fusion nature of many societies, which dramatically reduces the ability to predict which allies will be present on which occasions.

Participant Demographics

An electronic survey, which included optional demographic questions, was sent to all eight participants (Working Group organizers were not sent the survey) to gather information about their perception of the webinar. Of the six males and two females responding to these questions, four self-identified as white, and one as Asian. Three respondents did not indicate a racial identification. One respondent indicated being of Hispanic/Latino ethnicity.

All respondents were university faculty involved in both teaching and research at four-year universities, none of which were classified as minority serving or women's only institutions. Respondents were involved in several areas of business/education/research (See Appendix B for a detailed listing), including primate behavioral ecology and mathematical modeling of biological and social phenomena (Figure 1).

Figure 1. Survey respondents' self-described main area of business/education/research



Half of the respondents indicated their work was sponsored by a National Science Foundation (NSF) grant (Table1).

Table 1. NSF grants supporting participant research

Name of grant	Institution at which grant is held
Adolescence in wild <i>Cebus capucinus</i> : Personality, demography and life history	University of California, Los Angeles
Social Modification of Primate Behavior	Emory University
Probabilistic Aspect of Growth Processes	University of California, Davis
LTREB: Long-term fitness consequences of wild chimpanzee behavior	University of Michigan

Evaluation Design

Evaluation Questions

The evaluation of the Working Group was both formative and summative in nature, in that the data collected from participants was intended to both gain feedback from participants about the quality of the current Working Group and also to inform future meetings. The evaluation framework was guided

by Kirkpatrick's Four Levels of Evaluation model for training and learning programs (Kirkpatrick, 1994¹). The evaluation questions were developed according to level one of the model, participants' reactions, in order to gather information about how participants felt about the content and format of the Working Group, as well as the accommodations provided by NIMBioS. Several questions constituted the foundation for the evaluation:

9. Were participants satisfied with the Working Group overall?
10. Did the meeting meet participant expectations?
11. Do participants feel the Working Group made adequate progress toward its stated goals?
12. Do participants feel they gained knowledge about the main issues related to the research problem?
13. Do participants feel they gained a better understanding of the research across disciplines related to the Working Group's research problem?
14. What impact do participants feel the Working Group will have on their future research?
15. Were participants satisfied with the accommodations offered by NIMBioS?
16. What changes in accommodations, group format, and/or content would participants like to see at future meetings?

Evaluation Procedures

An electronic survey aligned to the evaluation questions was designed by the Evaluation Coordinator with input from the NIMBioS Director and Deputy Director. The final instrument was hosted online via UT's secure online survey host mrlInterview. Links to the survey were sent to the eight Working Group participants (the two organizers were not expected to respond to the survey) on April 20, 2009. Reminder emails were sent to non-responding participants on April 23 and April 27, 2009. By May 4, 2009, eight participants had given their feedback, for a response rate of 100%.

Data Analysis

Data from the electronic survey included both forced-response and supply-item questions. All data were downloaded from the online survey host into the statistical software package SPSS for analysis. Quantitative data were analyzed using SPSS, while qualitative data were analyzed in SPSS Text Analysis for Surveys. Qualitative responses were categorized by question and analyzed for trends.

Findings

Participant Satisfaction

Overall Satisfaction

Overall satisfaction with the Working Group was high among respondents, all of whom indicated they either agreed or strongly agreed that the Working Group was productive and met their expectations. Some general participant comments:

¹ From Kirkpatrick, D.L. (1994). *Evaluating Training Programs: The Four Levels*. San Francisco, CA: Berrett-Koehler.

“Overall, this was a very interesting gathering of a diverse group of researchers. I will look forward to seeing how things evolve.”

“I enjoyed it very much!”

“Way to go!”

All respondents thought the presentations were useful as well and that the presenters were very knowledgeable about their presentation topics. Additionally, 100% of respondents indicated they either agreed or strongly agreed that they would recommend participating in NIMBioS Working Groups to their colleagues (Table 2).

Table 2. Participant satisfaction with various aspects of the Working Group, by level of agreement

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I feel the Working Group was very productive.	63%*	38%	0%	0%	0%
The Working Group met my expectations.	75%	25%	0%	0%	0%
The presenters were very knowledgeable about their topics.	88%	13%	0%	0%	0%
The presentations were useful.	75%	25%	0%	0%	0%
I would recommend participating in NIMBioS Working Groups to my colleagues.	75%	25%	0%	0%	0%

* Note: Percentages in tables may not add to 100% due to rounding

Satisfaction with Accommodations

Overall, respondents reported being very satisfied with the travel, housing, and facilities provided by NIMBioS during the Working Group. Some overall comments about the accommodations:

“NIMBioS organization was flawless.”

“No complaints. It was quite pleasant.”

NIMBioS arranged housing for all eight respondents, all of whom reported being either satisfied or very satisfied with their accommodations. Respondents indicated the hotel was pleasant and convenient:

“Nice hotel, very conveniently located.”

“Nice and very convenient to the NIMBioS Building as well as the rest of the University and downtown for extra-curricular affairs.”

Additionally, the six participants for whom NIMBioS arranged transportation all indicated high satisfaction levels with their travel arrangements:

“Toby did a fantastic job. My travel was entirely stress-free as a result.”

“A good, pleasant, and efficient staff arranged things expertly.”

The majority of participants also reported high levels of satisfaction with the comfort and resources of the NIMBioS facility, as well as the quality of meals provided (Table 3).

Table 3. *Participant levels of satisfaction with Working Group accommodations*

Please indicate your level of satisfaction with the Working Group accommodations:	Very satisfied	Satisfied	Neutral	Dissatisfied	Strongly dissatisfied
Comfort of the facility in which the Working Group took place	75%	25%	0%	0%	0%
Resources of the facility in which the Working Group took place	63%	38%	0%	0%	0%
Quality of meals	38%	50%	13%	0%	0%
Quality of drinks and snacks provided	38%	50%	13%	0%	0%

Working Group Format and Content

Participant Learning

Respondents were asked several questions to gauge their level of learning about the main issues related to the research problem, including available research data and modeling techniques, how to adapt existing models to available data, and the types of data needed to better inform existing models. Overall, respondents reported high levels of learning, with 75%-100% either agreeing or strongly agreeing that they have a better understanding of each these issues as a result of participating in the Working Group. While several participants indicated feeling “neutral” about the amount of understanding they gained in several areas, 100% of participants indicated having a better understanding of the modeling techniques available for research on coalition formation as a result of attending the Working Group (Table 3).

Table 3. Participant self-reports of learning about issues related to the Working Group’s research problem

As a result of participating in this Working Group, I have a better understanding of:	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
the research data available on coalition formation.	50%	25%	25%	0%	0%
the modeling techniques available for research on coalition formation.	75%	25%	0%	0%	0%
how to adapt existing models to fully use available data.	50%	25%	25%	0%	0%
the types of data needed to better inform existing models.	75%	13%	13%	0%	0%

Analysis of open-ended responses revealed that almost all respondents (88%) said gaining an understanding of the research going on in other disciplines was the most useful aspect of the Working Group. Respondents indicated that too few opportunities usually exist for discussion of coalition formation research between theoreticians and empiricists:

“Although it is always fun to talk to fellow field primatologists, the most useful part was talking to modelers, because they have skills that I lack. I do not normally encounter such people at my usual conferences, so this was a great opportunity to try to establish interdisciplinary collaborations. I’m guessing that it is useful to them, as well, to hear what really happens in the real world in these diverse societies and to hear about some of the other variables they need to be incorporating into their models.”

“Again, as some one who deals with real life data, it was good to get together with modelers/theoreticians to see how they operate and think about matters. I don’t think that there’s enough cross-talk between theoreticians and empiricists. In this sense, this was a terrific opportunity and meeting.”

“Having the chance to ask very stupid questions about theoretical models and actually begin to understand exactly how they work. I am not the most mathematically gifted person, so it was very useful to have people talk us through their models in a way that I could grasp, and I came to see the kinds of thought processes needed to generate general, testable models.”

Some respondents also indicated that getting to know the other participants was a highlight of the meeting:

“Getting to know each other and getting an understanding of how the two groups can work together.”

“For me personally, unquestionably the opportunity to get to know the other participants. They were mostly people I knew of, but I hadn't met any of them before.”

Progress Toward Goals

All respondents agreed that the format of the Working Group was very effective for achieving its goals and that the Working Group made adequate progress toward its goal of finding a common language across disciplines for coalition formation research; however, some felt it would take several more meetings to fully accomplish this goal. Analysis of participant comments regarding this goal revealed that participants felt both empiricists and modelers learned how to speak one another's research language:

“... I do think that, as one of the empirical researchers, I now have a grasp of how theoreticians approach problems and how they think about them. I believe I will now be able to begin to formulate research questions in the general terms that theoreticians need, and not confuse the general with the specific. I would also say that the theoreticians in our group asked very penetrating and interesting questions about field data and the natural history of the various primates (much better questions than we empirical people could ask of them...)”

“The initial goal of trying to find a common language and getting a feel for the two distinct viewpoints (empiricists and modelers) was achieved. No concrete decisions or approaches were developed but all of this will take time, and I feel as a first step the meeting was very productive.”

“...I think the modelers learned a bit more about the kinds of data empiricists possess. As an empiricist, I found that the modelers presented their models in a way that made things more transparent than in their published work.”

One participant indicated he/she felt some tension between the empiricists and modelers in the group, but that the two sides began to better understand one another by the third day of the Working Group:

“...I think there is still some tension, with empiricists wanting to be more realistic and modelers wanting to keep things as simple as possible. I suppose that is always the case with such collaborations though, at least in the early stages. By the third day I thought we were really beginning to accomplish things, and if we do not lose too much momentum, I think that the next meeting of the group will be truly productive.”

Most respondents (86%) also felt that the Working Group made adequate progress toward its goal of building a testable quantitative theory for coalition formation, although most agreed that additional meetings are needed before significant progress is made:

“I think we made as much progress as would be expected for a 3-day workshop. I do think that additional meetings would be necessary to make really significant progress.”

One participant wrote that he/she felt the first meeting was not to make literal progress on the task at hand, but to put all participants in a better “cognitive space” for making real progress together:

“Yes, I feel we explored the scope of the issue, and the challenge facing us, was made apparent, and that the use of a nested approach would be valuable. I think that this meeting should be considered as laying out the issues, rather than actually beginning to build a theory. David Kirsh, a cognitive scientist, makes the distinction between 'epistemic acts' and 'pragmatic acts'. Epistemic acts are things that don't allow people to make literal progress in a task, but put them in a better 'cognitive space' which makes the task easier. I think this is what the current workshop achieved. We're now in a more 'cognitively congenial' environment to begin making real progress.”

One participant who felt the group did not make adequate progress toward the goal of building a testable quantitative theory for coalition formation thought that the group discussions needed to stay more focused on the key issues:

“...I was particularly disappointed that there wasn't more focused discussion on two major questions/points that were on the table the last day, i.e. what general empirical patterns exist and what theoretical questions do these patterns generate? It might help if Sergey provides more guidance and stricter oversight during discussions to make sure everyone keeps their eyes on the ball and key issues at hand.”

Impact on Future Research Plans

All respondents indicated they felt that the exchange of ideas that took place during the Working Group would initiate or influence their future research. Analysis of responses revealed a common theme among empiricists of being more interested in modeling their data:

“...Most of us empiricists spend so much time in the field that we do not have the time to learn all of the math and computing skills we need to take full advantage of our data sets. So having collaboration with people who already possess these skills is a really terrific opportunity. I certainly have plenty of data on this topic, as well as the potential to collect more data if needed on more specific aspects of coalition formation. Coalition formation has been a longstanding interest of mine, but the computational difficulties involved in analyzing triadic interactions make the analysis process very slow, and so I have pulled away from that topic lately. I'd be glad to go back to it if I had collaborators who could help by doing the programming.”

“...My conclusion from this exercise was that we know remarkably little about the frequency and form of coalitions. Empiricists have the data. We simply haven't published them yet. I had intended to work on getting some of my own data out and submitted for publication before this meeting. I will continue to try to do that, preferably before the next meeting.”

“... I am already planning my field season data collection along new lines, with the aim of providing data that can be used to test a theory of coalition formation. I also think that I can analyze my existing data in new ways as a result of a better understanding of the theoretical models presented.”

Other participants reported gaining more generalized ideas for future research:

"...many ideas did nucleate among the participants, and I do expect that some of them will come to fruition in the near future. Likely more meetings of this kind will be needed, but I do feel very optimistic regarding the path of this project"

"I got a lot of new ideas from this meeting."

"...I did not know any of the other attendees personally before the meeting. Now I have many more potential collaborators for the problems I was already planning to work on, as well as several ideas for fresh collaborations. The balance among disciplines was perfect, and the setting was highly conducive to constructive interaction."

In addition to new ideas for research, two-thirds of respondents said that, while they don't have a solid plan in place yet, they do plan on developing future collaborations with other Working Group participants:

"I can't honestly say that I have made such plans yet. But I am confident that I will, and I am already working on it. Perhaps this question is better asked after the group's second meeting?"

"Tentative ones -- nothing solid yet. I hope that we can continue to carve out some more tangible plans via the Wiggio site."

"Not yet, but I have some ideas."

Suggestions for Future Working Group Meetings

Respondents were asked several questions soliciting suggestions for future Working Group meetings. While most respondents said they could not think of anything to change, several did offer ideas. One theme that emerged from analysis of participant comments was the need for better clarification and communication of Working Group goals:

"Not enough in the way of clear aims and goals. A bit more planning in advance, with Sergey and others articulating where they want to go with this and laying out a clear game plan would be useful."

"Some talks were easier to connect to the primary goals of the workshop than others. The best were the ones that had explicit problems they needed help solving, because those fostered more discussion."

However, one participant felt the lack of direction at times was useful:

"Perhaps we were at cross-purposes with respect to some issues, and we might have wasted a bit of time talking past each other at some points. On the other hand, that in itself was quite a useful process to go through, as it made clear where misunderstandings lay, and why."

Another theme that emerged was regret that not all invited participants were able to attend, and one respondent suggested video conferencing parts of the meeting to include those with conflicts, but whose presence would benefit the group:

“It is a shame that not everyone could attend, and I'm sure that, given our busy schedules, we will be unable to get all participants in the same place at the same time for future meetings. It would be nice if there could be arrangements to have video conferencing with people who cannot be there, but who could participate for part of the conference long distance.”

“I have a very positive impression of the event. Perhaps the fact that the meeting was very short in duration discouraged some of the expected participants to come once they encountered some (of the many) problems related to internal flights within the USA. As a result, not everyone expected managed to attend the meeting, which was a pity.”

Other respondents indicated they would like to have more formal planning of group activities and meals in the evenings:

“A couple of us had to stay in town a night longer than everyone else, and Lou invited us to a local concert, which was wonderful. Perhaps some kind of more organized event like that for everyone would be nice, as it also gave us the chance to meet people from outside the university.”

“Perhaps a bit more planning of dinner arrangements, as we all ended up wanting to eat together and accommodating large groups at restaurants at the last minute is always tricky. So that was a bit hit and miss, but we did fairly well.”

Conclusions and Recommendations

Overall, the Working Group was very successful in accomplishing its goals. Working Group participants were satisfied with the meeting, indicating that it was a productive experience that met their expectations. Participants were also highly satisfied with the travel, housing, and other amenities offered by NIMBioS. All participants also indicated high levels of learning about the issues surrounding the research problem of the Working Group, as well as gaining a better understanding of the research going on in disciplines other than their own. Participants felt that adequate progress was made toward the goals of the Working Group, but that it would take several more meetings before the goals could be fully realized.

Several participants indicating they planned to take the knowledge they gained during the Working Group and apply it to their own research. Participants also reported that plans for collaborative research with other Working Group participants were in the making, although no one had a solid plan in place yet.

While most participants could not think of ways to improve future meetings, several suggestions were offered, including better clarification and communication of the group's goals, finding a way to involve invited participants who were not able to attend, and more formal planning of group activities and meals in the evenings.

Based on analysis of participant response data, the recommendations are as follows:

- Continue with the current format of the Working Group, but consider ways to more clearly articulate the Working Group's goals to all participants before and during the meeting to ensure everyone is clear on the direction in which the group is heading and how individual participants can contribute to it.
- Although the format of the Working Group does not lend itself to video conferencing the full time, consider the possibility of video conferencing relevant parts of the meeting with participants who are unable to attend.
- Consider making advance plans for group meals in the evening and/or other social events outside of NIMBioS.

Appendix A

Coalitions and Alliances Working Group Survey

Coalitions and Alliances Working Group Survey

Thank you for taking a moment to complete this survey. Your responses will be used to improve the Working Groups hosted by the National Institute for Mathematical and Biological Synthesis. Information supplied on the survey will be confidential, and results will be reported only in the aggregate.

NIMBioS will send two reminder emails to Working Group participants who have not responded to this survey. If you would like to be excluded from these reminder emails, please enter your name below. Your survey results will still remain confidential and your name will not be associated with any of your responses in reporting of survey results.

Name:

Please check the appropriate box to indicate your level of agreement with the following statements about this Working Group: (Very satisfied, Satisfied, Neutral, Dissatisfied, Very dissatisfied)

I feel the Working Group was very productive.

The Working Group met my expectations.

The presenters were very knowledgeable about their topics.

The presentations were useful.

I would recommend participating in NIMBioS Working Groups to my colleagues.

Please check the appropriate box to indicate your level of agreement with the following statements.

As a result of participating in this Working Group, I have a better understanding of:

(Strongly agree, Agree, Neutral, Disagree, Strongly disagree)

the research data available on coalition formation.

the modeling techniques available for research on coalition formation.

how to adapt existing models to fully use available data.

the types of data needed to better inform existing models.

new methods and modeling techniques that need to be developed.

Do you feel the Working Group achieved its goal of finding a common language across disciplines for coalition formation research?

Yes

No

Comments:

Do you feel the Working Group made adequate progress toward building a testable quantitative theory for coalition formation?

Yes

No

Comments:

Do you feel that the exchange of ideas that took place during the Working Group will initiate or influence your future research? Please explain:

Did you develop unanticipated plans for collaborative research with other Working Group participants? Please explain:

What do you feel was the most useful aspect of the Working Group?

What do you feel was the least useful aspect of the Working Group?

How do you feel about the format of the Working Group?

This was a very effective format for achieving our goals

This was not a very effective format for achieving our goals ->

The Working Group format would have been more effective if:

Is your work currently supported by an NSF grant?

Yes

No

Name of NSF grant:

Institution at which NSF grant is held:

Was your housing during the Working Group arranged by NIMBioS?

Yes ->

No

Overall, how satisfied were you with your housing arrangements?

Very satisfied

Satisfied

Neutral

Dissatisfied

Very dissatisfied

Comments about housing arrangements:

What could NIMBioS have done to make your stay in Knoxville more enjoyable (e.g. better information about nearby attractions, public transportation, etc.)?

Was your transportation to Knoxville arranged by NIMBioS?

Yes ->

No

Overall, how satisfied were you with your travel arrangements?

Very satisfied

Satisfied

Neutral

Dissatisfied

Very dissatisfied

Comments about travel arrangements:

Please indicate your level of satisfaction with the Working Group accommodations:

(Very satisfied, Satisfied, Neutral, Dissatisfied, Very dissatisfied)

Comfort of the facility in which the Working Group took place

Resources of the facility in which the Working Group took place

Quality of meals

Quality of drinks and snacks provided

Please indicate any changes NIMBioS can make to improve the resources and/or accommodations available to Working Group participants:

Additional comments about Working Group accommodations:

Please provide any additional comments about your overall experience with the Working Group:

Demographics

Your participation in answering the following questions is completely voluntary and will be used for aggregated reporting only. Answer only those questions with which you feel comfortable.

I am a(n):

Undergraduate student

Graduate student

Postdoctoral researcher

University faculty—teaching/research

University faculty—teaching only

University faculty—research only

University staff

Business/industry employee

Non-profit organization employee

Other:

If you are affiliated with a college/university, please describe your institution: (check all that apply)

2-year institution

4-year institution

Minority serving institution

Women's only institution

Not applicable

Please give a 2-5 word description of your main area of business/education/research (e.g. mathematical immunology, high school science teacher, etc.)

Gender:

Male

Female

Are you Hispanic or Latino?

Yes

No

What is your racial background? (check all that apply)

American Indian or Alaska Native

Native Hawaiian or other Pacific Islander

Asian

Black or African American

White

Appendix B

Open-ended Responses

Open-ended responses, by question and response category

Do you feel the Working Group achieved its goal of finding a common language across disciplines for coalition formation research? Comments: (n=7)

Not yet, but getting there (4)

The main goal implied in the question above cannot be met in a short meeting such as this one. , However, many ideas did nucleate among the participants, and I do expect that some of them will come to fruition in the near future. Likely more meetings of this kind will be needed, but I do feel very optimistic regarding the path of this project.

Partially. You can't expect miracles from one meeting.

Partially -- though I think there is still some tension, with empiricists wanting to be more realistic and modelers wanting to keep things as simple as possible. I suppose that is always the case with such collaborations though, at least in the early stages. By the third day I thought we were really beginning to accomplish things, and if we do not lose too much momentum, I think that the next meeting of the group will be truly productive.

I'm saying yes, because no is too strongly negative, but I don't think we're quite there yet. I do think that, as one of the empirical researchers, I now have a grasp of how theoreticians approach problems and how they think about them. I believe I will now be able to begin to formulate research questions in the general terms that theoreticians need, and not confuse the general with the specific. I would also say that the theoreticians in our group asked very penetrating and interesting questions about field data and the natural history of the various primates (much better questions than we empirical people could ask of them...)

Yes (2)

The initial goal of trying to find a common language and getting a feel for the two distinct viewpoints (empiricists and modelers) was achieved. No concrete decisions or approaches were developed but all of this will take time, and I feel as a first step the meeting was very productive.

My response to this is yes for the most part. I think the modelers learned a bit more about the kinds of data empiricists possess. As an empiricist, I found that the modelers presented their models in a way that made things more transparent than in their published work.

Miscellaneous (1)

Great experience!

Do you feel the Working Group made adequate progress toward building a testable quantitative theory for coalition formation? (n=5)

Yes (1)

Yes, I feel we explored the scope of the issue, and the challenge facing us, was made apparent, and that the use of a nested approach would be valuable. I think that this meeting should be considered as laying out the issues, rather than actually beginning to build a theory. David Kirsh, a cognitive scientist,

makes the distinction between 'epistemic acts' and 'pragmatic acts'. Epistemic acts are things that don't allow people to make literal progress in a task, but put them in a better 'cognitive space' which makes the task easier. I think this is what the current workshop achieved. We're now in a more 'cognitively congenial' environment to begin making real progress.

Miscellaneous (2)

see previous comment

partially, again.

Not yet (2)

I think we made as much progress as would be expected for a 3-day workshop. I do think that additional meetings would be necessary to make really significant progress.

Not yet. I was particularly disappointed that there wasn't more focused discussion on two major questions/points that were on the table the last day, i.e. what general empirical patterns exist and what theoretical questions do these patterns generate? It might help if Sergey provides more guidance and stricter oversight during discussions to make sure everyone keeps their eyes on the ball and key issues at hand.

Do you feel that the exchange of ideas that took place during the Working Group will initiate or influence your future research? Please explain: (n=8)

Yes (4)

definitely !

Yes.

I got a lot of new ideas from this meeting.

Both. I did not know any of the other attendees personally before the meeting. Now I have many more potential collaborators for the problems I was already planning to work on, as well as several ideas for fresh collaborations. The balance among disciplines was perfect, and the setting was highly conducive to constructive interaction.

Empiricists more interested in modeling their data (4)

I hope so -- there is certainly potential there. Most of us empiricists spend so much time in the field that we do not have the time to learn all of the math and computing skills we need to take full advantage of our data sets. So having a collaboration with people who already possess these skills is a really terrific opportunity. I certainly have plenty of data on this topic, as well as the potential to collect more data if needed on more specific aspects of coalition formation. Coalition formation has been a longstanding interest of mine, but the computational difficulties involved in analyzing triadic interactions make the analysis process very slow, and so I have pulled away from that topic lately. I'd

be glad to go back to it if I had collaborators who could help by doing the programming.

Invitation to participate made me think about what we know and don't know about coalition formation in animals. My conclusion from this exercise was that we know remarkably little about the frequency and form of coalitions. Empiricists have the data. We simply haven't published them yet. I had intended to work on getting some of my own data out and submitted for publication before this meeting. I will continue to try to do that, preferably before the next meeting.

It may help us, empiricists, organize our data in ways that are useful for modelers.

yes, I am already planning my field season data collection along new lines, with the aim of providing data that can be used to test a theory of coalition formation. I also think that I can analyse my existing data in new ways as a result of a better understanding of the theoretical models presented.

Did you develop unanticipated plans for collaborative research with other Working Group participants? Please explain: (n=8)

No (2)

No

Not as such, in the sense that it depends on how some current analyses go, but once these are underway it is possible that the data could be used to test some of the existing models that one of the participants is using by applying them to a slightly different context.

Not yet, but planning on future collaborations (5)

Tentative ones -- nothing solid yet. I hope that we can continue to carve out some more tangible plans via the Wiggio site.

Not yet, but I have some ideas.

A lot of people already have data which will be very useful.

I can't honestly say that I have made such plans yet. But I am confident that I will, and I am already working on it. Perhaps this question is better asked after the group's second meeting?

Yes (1)

Yes. Some of the data which will be made available through this project maybe of interest to other problems which transcend coalition formation. In this sense it is likely that some work not strictly related to coalition formation will also emerge from this meeting.

What do you feel was the most useful aspect of the Working Group? (n=8)

Gaining an understanding of the research going on in other disciplines (7)

Having the chance to ask very stupid questions about theoretical models and actually begin to

understand exactly how they work. I am not the most mathematically gifted person, so it was very useful to have people talk us through their models in a way that I could grasp, and I came to see the kinds of thought processes needed to generate general, testable models.

the combination of theoretical and experimental work on coalition formation, together with the quality of the participants.

learning about the empirical data, and hearing about some new models

Although it is always fun to talk to fellow field primatologists, the most useful part was talking to modelers, because they have skills that I lack. I do not normally encounter such people at my usual conferences, so this was a great opportunity to try to establish interdisciplinary collaborations. I'm guessing that it is useful to them, as well, to hear what really happens in the real world in these diverse societies and to hear about some of the other variables they need to be incorporating into their models.

Again, as some one who deals with real life data, it was good to get together with modelers/theoreticians to see how they operate and think about matters. I don't think that there's enough cross-talk between theoreticians and empiricists. In this sense, this was a terrific opportunity and meeting.

Getting to know each other and getting an understanding of how the two groups can work together.

For me personally, unquestionably the opportunity to get to know the other participants. They were mostly people I knew of, but I hadn't met any of them before.

Miscellaneous (1)

Not a good question! This was a great meeting over all, I cannot (and should , not) isolate one aspect.

What do you feel was the least useful aspect of the Working Group? (8)

Need better clarification of goals (3)

Perhaps we were at cross-purposes with respect to some issues, and we might have wasted a bit of time talking past each other at some points. On the other hand, that in itself was quite a useful process to go through, as it made clear where misunderstandings lay, and why.

Some talks were easier to connect to the primary goals of the workshop than others. The best were the ones that had explicit problems they needed help solving, because those fostered more discussion.

Not enough in the way of clear aims and goals. A bit more planning in advance, with Sergey and others articulating where they want to go with this and laying out a clear game plan would be useful.

Miscellaneous (3)

I have a very positive impression of the event. Perhaps the fact that the meeting was very short in duration discouraged some of the expected participants to come once they encountered some (of the many) problems related to internal flights within the USA. As a result, not everyone expected

managed to attend the meeting, which was a pity.

Noisy First Dinner

This question.

Nothing (2)

None

That's a tough one ... and since I had a very positive experience, if you don't mind, I think I'll pass!

Name of NSF grant: (n=4)

“Adolescence in wild Cebus capucinus: Personality, demography and life history” (grant No. 0613226)

Social Modification of Primate Behavior

Probabilistic Aspect of Growth Processes

LTREB: Long-term fitness consequences of wild chimpanzee behavior

Institution at which NSF grant is held: (n=4)

University of California, Los Angeles

University of Michigan

University of California, Davis

University of Michigan

Comments about housing arrangements: (n=5)

Convenient location (3)

Nice hotel, very conveniently located.

Nice and very convenient to the NIMBioS Building as well as the rest of the University and downtown for extra-curricular affairs.

It was extremely convenient. I have no complaints.

Everything was fine (2)

Everything OK.

All great - except for some very noisy guests on the night of the football game, but that's nothing to do with the housing arrangements per se, or NIMBioS.

What could NIMBioS have done to make your stay in Knoxville more enjoyable (e.g. better information about nearby attractions, public transportation, etc.)? (n=6)

Nothing--everything was great (5)

NIMBioS organization was flawless.

No complaints. It was quite pleasant.

nothing

Everything was fine.

Probably nothing, I had a great time.

Organized social event for participants (1)

A couple of us had to stay in town a night longer than everyone else, and Lou invited us to a local concert, which was wonderful. Perhaps some kind of more organised event like that for everyone would be nice, as it also gave us the chance to meet people from outside the university.

Comments about travel arrangements: (n=5)

No problems (5)

Toby did a fantastic job. My travel was entirely stress-free as a result.

fine !

No complaints.

A good, pleasant, and efficient staff arranged things expertly.

Everything was fine. Thanks to Toby Koonan!

Please indicate any changes NIMBioS can make to improve the resources and/or accommodations available to Working Group participants: (n=4)

Miscellaneous (4)

Perhaps a bit more planning of dinner arrangements, as we all ended up wanting to eat together and accommodating large groups at restaurants at the last minute is always tricky. So that was a bit hit and miss, but we did fairly well.

organization is fine.

It is a shame that not everyone could attend, and I'm sure that, given our busy schedules, we will be unable to get all participants in the same place at the same time for future meetings. It would be nice

if there could be arrangements to have video conferencing with people who cannot be there, but who could participate for part of the conference long distance.

It was a bit cold in the building.

Additional comments about Working Group accommodations: (n=1)

fine accommodations, close to NIMBioS, no more is expected.

Please provide any additional comments about your overall experience with the Working Group: (n=4)

Great meeting (4)

I enjoyed it very much !

Overall, this was a very interesting gathering of a diverse group of researchers. I will look forward to seeing how things evolve.

Again, great meeting!

Way to go!

Please give a 2-5 word description of your main area of business/education/research (e.g. mathematical immunology, high school science teacher, etc.) (n=8)

Primate ecology/behavior (3)

professor of psychology, studying the evolution of sociality and cognition in the primates.

primate behavioral ecology

Primate behavior and cognition

Miscellaneous (3)

Logic and Philosophy of Science & Economics

biological anthropology

complex random processes

Mathematical modeling (2)

mathematical modeling of biological and social phenomena

mathematical modeller

Appendix C

List of Participants

Participants

Last name	First name	Institution
Barrett	Louise	Lethbridge
Boehm	Chris	University of Southern California
*de Waal	Frans	Emory University
*Gavrilets	Sergey	University of Tennessee
Gravner	Janko	University of California, Davis
Mesterton-Gibbons	Mike	Florida State University
Mitani	John	University of Michigan
Pacheco	Jorge	Lisbon University
Patton	John	California State University, Fullerton
Perry	Susan	University of California, Los Angeles
Skyrms	Brian	University of California, Irvine

* **Organizer of Working Group**