WHY SIMPLIFY AHP?

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AHP and ANP are very well developed mathematical theories with many practitioners, so why should anyone research methods to simplify these processes? We believe there are many reasons to search for simplifications:

1. If we make the pairwise process simpler, we can get feedback from participants without needing to train them. In other words, a whole world of participants becomes available to us.
2. If we reduce the number of interactions needed to get viable data, we allow participants to give us better data throughout the process. (How many of us have said or heard, "didn't I already answer this question?")
3. If we simplify the process of creating viable AHP/ANP models, we could open the process to those with far less training in AHP/ANP theory.
4. If we simplify AHP, we can present it quickly to untrained individuals and allow them to begin using AHP without needing to understand all of the technical details (until they need those details, or until curiosity overtakes them).

These goals, by themselves, show us that researching methods to simplify and streamline AHP could yield great results. However, if we consider an analogy we can see even more reasons.

In all likelihood, everyone reading this missive has a cell phone. How many of you readers know exactly how cell signals are transferred from your phone to a cell tower (and from there to another phone)? How many understand the operating system running on your phone? Or how your phone takes your text messages and sends them to another person via SMS, SMTP, or Skype? Very few people understand the intricacies of such operations, and yet, many people benefit from the simplified user interfaces that others have developed so that we may **take advantage** of that technology. Some of us in the field of AHP should be considering a similar question, "*how can we simplify the process of building and participating in an AHP model, so that untrained users can take advantage of this technology, in the same way that I take advantage of my cell phone's technology?*".

For these reasons, and many more, we believe that the difficult research of simplifying and streamlining AHP should be undertaken. For instance, reason #4 stated above is why we developed the SimpleAHP webapp; so that we could give elementary aged children access to AHP, without needing to explain all of the subtleties involved.

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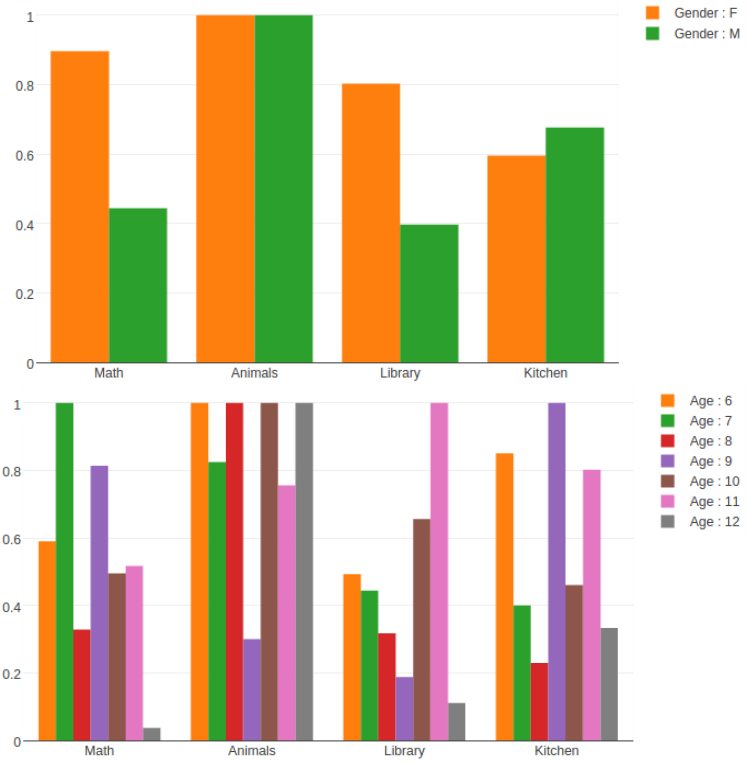
SimpleAHP is a webapp that is available at http://tiny.cc/SimpleAHP and whose source code is freely available as well (for interested parties to improve upon and add functionality). SimpleAHP simplifies the AHP process in 2 ways: first, by restricting to a single pairwise comparison set, and second, by allowing for a simplified pairwise process using a Likert scale. The simplified pairwise process for the comparison *A* versus *B* offers the following responses: *A* is better, *A* is much better, *B* is better, *B* is much better, or they are equal. Using this simplified scale, we do not need to explain the standard 1-9 scale to participants. Instead they are immediately able to understand the questions and submit their answers (children as young as the age of 6 were able to fill out questionnaires with no prior training or explanation).

Besides simplifying the process itself, we added ways to cluster and analyze the results more efficiently and effectively, giving more insight on the responders and their preferences, i.e. clustering by gender, age group etc.



At the ISAHP 2016 conference we had 5 youth participants aged 9-14 who used the SimpleAHP web app to find interesting things out about the preferences of their peers and parents. For instance, Will Adams aged 12, was able to hand out simplified paper questionnaires to classmates aged 6-12 and use that data and the SimpleAHP web app to understand their preferences, and the preferences of subgroups of classmates (e.g. what do boys versus girls think). Another participant, aged 12, was able to use an online questionnaire and SimpleAHP to discern ice cream flavor preferences based on age and gender.

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All of these youth participants had no prior exposure to AHP (aside from my son Will Adams), and yet they were able to use our simplified questionnaire process and the SimpleAHP to find answers to real questions they were interested in. There are many places we could look to simplify or streamline AHP to make it more efficient and effective both for new practitioners and those with years of experience.

The point is to find ways to make AHP simple and within reach of everybody without any need of specific knowledge. This can be done by converting AHP from a sophisticated mathematical decision making method to an everyday tool to make quick and informed decisions on almost any subject we can think of. The downside of this simplification will be loss of precision and accuracy, however we are not usually more precise when deciding without any method at all. That does not mean that for complex problems we will not use the full extent of the method, but that in everyday and relatively simple models we do not really need to go to the full method. For example, it is a bit like using a fighter jet to cross the street when all you need to do walk (sure it will work, but you will spend the next 6 months in training learning how to fly the thing).