

Measuring Intergenerational Linkages on the ALP-HRS: A Pilot Study

Technical Report
 Pamela Giustinelli¹
 December 2014

Background and Motivation The [Health and Retirement Study](#) (HRS) is the premier survey of older Americans' work and health transitions. The HRS asks respondents about intra-family relationships, but since it only includes reports by one party in a two party relationship it presents limitations in studying aspects of intergenerational transmission, support-and-exchange, altruism, decision making within the family, and other topics (e.g., Bianchi et al. (2008)). Recent introduction of a Web HRS, however (e.g., Couper et Al. (2007)), presents an opportunity for surveying the children and parents of current respondents relatively inexpensively.

Our research team piloted this idea using the [American Life Panel](#) (ALP), an online panel of 6,000+ respondents from the adult US population. As about half of the ALP panelists completed the Web version of the 2012 HRS adapted to the ALP (henceforth, ALP-HRS), as of September of 2013, the HRS family roster provides a sampling frame of the children, parents, and current spouse/partner of those ALP respondents. Additionally, existing 'invitation-and-subscription' protocols from previous respondent-driven sampling experiments using ALP panelists as seeds (Schonlau et al., 2012) offer a customizable framework for the intergenerational application.

The aims of our pilot are:

1. To assess the feasibility of measuring family linkages for existing members of the ALP, by administering a family roster battery whose information is partly pre-loaded from respondents' previous answers to the ALP-HRS modules.
2. To build a sample of degree-1 relatives of current ALP respondents (i.e., their living parents, adult children, and current spouse/partner), by having a sample of ALP panelists ('primary respondents' or 'anchors' or 'inviters') invite their eligible relatives ('secondary respondents' or 'invitees') to join the ALP via referral, and by subsequently having the latter take surveys on the ALP about relevant topics in family economics, demography, etc.

Study Design The intergenerational pilot was fielded between November of 2013 and April of 2014, targeting 442 ALP respondents and their eligible relatives. The pilot comprises the following ALP modules, as also shown in the figure below.

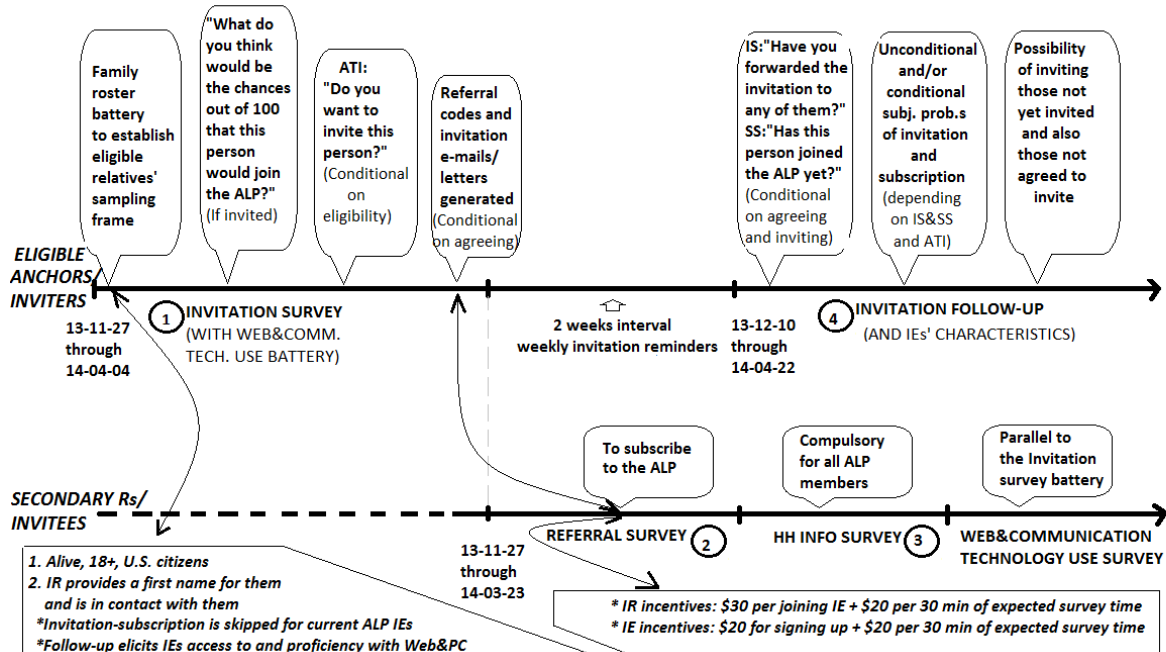
1. An *Invitation Survey* for inviters ([WB346](#)), including (i) a family roster battery, (ii) an invitation battery, and (iii) a Web and communication technology use battery. The main purpose of this module is to correct and/or complete the pre-loaded family roster information from the ALP-HRS (i); to ask participating respondents to invite their eligible relatives from the roster to join the study (ii); to learn about respondents' use of Web and communication technologies, in general and to communicate and keep in touch with their family (iii). This module also elicits the inviters' subjective probabilities that each eligible relative of theirs would join the ALP, if invited to do so. (See screenshots from the invitation survey in Appendix A.)

¹**Contact:** pgiusti@isr.umich.edu. This memo offers a brief overview of a research project by Pamela Giustinelli, Bart Orriens, Robert J. Willis, and Michael A. Zabek, dealing with the measurement of intergenerational linkages in the American Life Panel (ALP) and with the recruitment of family members of current ALP respondents into the study. The memo reports on the project's progress and preliminary findings. **Acknowledgements:** We are grateful to the National Institute of Aging for generous support (NIA 2-P01-AG026571 Program Project Grant 'Behavior on Surveys and in the Economy: HRS and Beyond,' R.J. Willis, PI). We thank Arie Kapteyn, Kathleen McGarry, and Bas Weerman for their substantive and methodological inputs during the pre-test phase; Tania Gutsche and Krishna Kumar for their invaluable assistance throughout the fielding process; and Adam Karabatakis and Sarah Koh for excellent research assistance. All remaining errors are ours.

2. A *Referral Survey* for invitees (Referral), enabling the latter to join the study. Its questions are mostly for administrative use and the data set is not downloadable from the ALP website. However, a subset of the information collected in the referral survey may be obtained upon an explicit request to the ALP and used for research purposes. The referral survey is immediately followed by the Household Information Survey each ALP member compulsorily takes upon joining and periodically thereafter.

3. An *Invitation Follow-Up Survey* for inviters (WB353). This module includes (i) questions eliciting the inviters' perception about the invitation and subscription statuses of their eligible relatives as of the time of the follow-up. (ii) It also includes questions eliciting the inviters' subjective probabilities of inviting each eligible invitee of theirs, and their subjective probabilities that each one of their eligible relatives will/would subscribe unconditional and/or conditional on being invited to do so. (The exact sequence depends on the invitation and subscription statuses as of the time of the follow-up.) If an invitee is reported to have joined already, the inviter is asked questions about whether the invitation and subscription decisions were made individually or jointly by the inviter and the invitee. Everybody is asked about whether those decisions had been discussed or not with each eligible relative, independently of the invitation and subscription statuses. (iii) The module continues with the invitation battery — analogous to that included in the invitation module — for those inviters who had refused to invite some or all of their eligible relatives in the invitation survey. (iv) Finally, the survey ends with a battery of questions eliciting additional background information about all eligible relatives. (See screenshots from the follow-up survey in Appendices B and C.)

4. A *Web and Communication Technology Use Survey* for invitees (WB355). This module includes a Web and communication technology use battery for joining invitees, analogous to that included in the invitation module.



Both participating inviters and joining invitees were paid as regular ALP panelists for taking the invitation survey and the referral survey, respectively. They also received an additional payment aiming to incentivize invitation and subscription. The pilot followed Schonlau et Al. (2012)'s most successful scheme

and gave: (i) Participating inviters \$30 dollars for each eligible relative of theirs who successfully joined the ALP; (ii) \$20 to each corresponding joining invitee.

One aspect of the ALP sample which did impact the design of the pilot requires clarification. Before the pilot, approximately 17% of ALP respondents had at least one relative who was an ALP panelist in turn, in the majority of cases a spouse or a partner. Sampling of the inviters for the pilot did maintain these proportions. The implication for the described protocol is that inviters were not asked to invite those eligible relatives of theirs who happened to be ALP members already, and the latter were not asked to take the referral survey or the household information survey. Instead, they were invited to take the Web and communication technology survey directly.

Finally, additional extensive information about the inviters can be obtained by linking the modules of the intergenerational pilot to the ALP-HRS ones. The ALP-HRS modules are WB300 (sections A-D of the 2012 HRS), WB301 (sections E-H of the 2012 HRS), WB325 (sections J-M of the 2012 HRS), WB334 (sections N-P of the 2012 HRS), and WB336 (sections Q-R of the 2012 HRS). All of the ALP-HRS and Intergenerational Pilot modules can be found at and downloaded from the ALP [Data page](#).

Technical Issues and Preliminary Figures During the fielding a number of technical issues occurred, some of which were likely triggered by respondents' behavior while interacting with the survey Web interface. For example, 'compulsive' use of previous-next buttons while answering the family roster questions, correction-and-resubmission of pre-loaded roster information, and similar, were handled by the program by incrementing the value of the counters looping over the relatives, and by creating additional entries where the resubmitted information was stored as if it did pertain to new (in fact non-existing) relatives. This led in turn to generation of 'duplicates' of a number of eligible relatives and to display of the latter on the screens of the invitation sequence following the family roster, albeit with different referral codes assigned. (The referral code is used as the basis for referral of any eligible invitee to the ALP by his/her inviter and as a unique identifier for the former.) Such issues did likely affect respondents' invitation behavior, as suggested also by respondents' feedback at the end of the invitation module. They additionally generated hard-to-track errors in the way values of specific variables were stored and subsequently pre-loaded and used for loops and skip logic in the follow-up survey (especially relatives' counters and IDs, and variables based on the latter). The following table quantifies the extent of the problem by main sources of error; it includes everybody, including inviters who turned out not to have any eligible relatives.

	Inviters		Invitees	
	Duplicate Error in Invitation	No Duplicate Error in Invitation	Duplicate Error In Invitation	No Duplicate Error in Invitation
Follow-up Error	13	21	137	140
No Follow-up Error	22	386	196	1825
Total		442		2298

The following tables show basic statistics summarizing the sampling frame of eligible relatives, invitation rates, and subscription rates. These rates are disaggregated by relationship type and, whenever relevant, by not-yet members vs. already members. The statistics were computed after dropping all inviters and corresponding invitees who were detected having experienced any technical problem of the type described above, during either the invitation survey (WB346) or the follow-up survey (WB353). (In other words, no imputation or selection correction was performed so far.)

Table 1

	(I) Sampling frame of eligible invitees (reported by inviter in WB346)		(II) Percent chance that invitee would join if invited (reported by inviter in WB346)		(III) Inviter agreed to invite at least 1 eligible invitee at any time (i.e., either in WB346 or in WB353)		(IV) Percent chance that invitee would join if invited (reported by inviter in WB346 and conditional on (III))		(V) Eligible invitees joining the ALP at any time (i.e., even after WB353. Here 'joining' requires taking WB355, not just the Referral)		(VI) Percent chance that invitee would join if invited (reported by inviter in WB346 and conditional on (V))	
	(I-NM) Not-Yet Members	(I-M) Already Members	(II-NM) Not-Yet Members		(III-NMa) Not-Yet Members	(III-NMb) Not-Yet Members	(IV-NM) Not-Yet Members		(V-NM) Not-Yet Members ⁷ (who have now joined)	(V-M) Already Members	(VI-NM) Not-Yet Members (who have now joined)	
			mean [std.dev.]	N	All ⁵	Agreed to invite ⁶	mean [std.dev.]	N			mean [std.dev.]	N
Inviters	369 ¹		357 ³		305 [82.65%] ⁴		277		167 [45.26%] ⁴	50 [13.55%] ⁴	167	
Invitees	999	93 ²	45.691 [37.889]	998 ³	902	698	68.384 [29.728]	588	248 [24.82%] ⁸	59 [63.44%] ⁹	77.540 [27.338]	248
Children	509	28	48.723 [35.772]	509	474	384	66.606 [28.509]	330	112 [22.00%] ⁸	15 [53.57%] ⁹	77.232 [24.686]	112
Parents	300	10	34.147 [37.794]	299 ³	255	158	67.886 [31.887]	123	44 [14.67%] ⁸	4 [40.00%] ⁹	77.955 [29.695]	44
Spouses	190	55	55.737 [39.296]	190	173	156	73.185 [30.313]	135	92 [48.42%] ⁸	40 [72.73%] ⁹	77.717 [29.468]	92

Note 1: This is conditional on inviters having at least 1 eligible relative (i.e., at least 1 adult child or 1 living parent or a spouse/partner), as reported by the inviter.

Note 2: Reported by the inviter. 70 of them were verified to be existing members based on ALP records.

Note 3: This is conditional on inviters having at least 1 eligible relative who is not yet a member of the ALP. The difference between columns (I-NM) and (II-NM) is due to 1 item non-response. Percent chance were elicited on a 0-100 scale, where 0 means 'no chance of the event occurring' and 100 means 'the event is absolutely sure to happen'.

Note 4: [%]s use (I) as denominator.

Note 5: All eligible relatives of those inviters who agreed to invite at least 1 eligible relative.

Note 6: Eligible relatives the inviter agreed to invite only.

Note 7: For not-yet members, people who joined and took WB355 are the same (i.e., no attrition between Referral and WB355). For already members, the difference between (I-M) and (III-M) is due to non-participation in WB355 (i.e., the Web and communication technology use survey for invitees).

Note 8: [%]s use (I-NM) as denominator, i.e., not-yet members only.

Note 9: [%]s use (I-M) as denominator, i.e., already members only.

Table 2

	(I) Sampling Frame of Eligible Relatives (reported by inviter in WB346)		(II) Eligible invitees invited to join the ALP as of WB353 (reported by inviter) ²	(III) Eligible invitees who joined the ALP as of WB353 (reported by inviter) ²	(IV) Invitees who joined the ALP as of WB353 (actual, from Referral) ²	(V) Eligible invitees joining the ALP at any time (i.e., even after WB353. Here 'joining' requires taking WB355, not just the Referral)	
Inviters	353 ¹		214 [60.62%] ³	104 [29.46%] ³	119 [33.71%] ³	166 [47.03%] ³	42 [11.90%] ³
	(I-NM) Not-Yet Members	(I-M) Already Members	(II-NM) Not-Yet Members	(III-NM) Not-Yet Members	(IV-NM) Not-Yet Members	(V-NM) Not-Yet Members	(V-M) Already Members
Invitees	990	77	409 [41.31%] ⁴	143 [14.44%] ⁴	168 [16.97%] ⁴	247 [24.95%] ⁴	49 [63.64%] ⁵
Children	509	22	228 [44.79%] ⁴	58 [11.39%] ⁴	78 [15.32%] ⁴	112 [22.00%] ⁴	12 [54.55%] ⁵
Parents	294	8	78 [26.53%] ⁴	25 [8.50%] ⁴	24 [8.16%] ⁴	44 [14.97%] ⁴	3 [37.50%] ⁵
Spouses	187	47	103 [55.08%] ⁴	60 [32.09%] ⁴	66 [35.29%] ⁴	91 [48.66%] ⁴	34 [72.34%] ⁵

Note 1: This is conditional on inviters having at least 1 eligible relative and taking WB353 (i.e., the follow-up survey). The second conditioning has been added here because the rates shown in columns (II) and (III) are based on the invitees' invitation and subscription statuses as reported by the inviter in the follow-up. Self-reported (by the inviter) invitation of the invitee is the only available measure of observed/realized invitation in the pilot, which permits separating lack of subscription due to lack of invitation by the inviter from lack of subscription by an invited relative. On the other hand, we have *ex ante* measures given by the inviter's subjective probabilities of invitation and/or of subscription (by the invitee) elicited in the follow-up, and a previous measure of the latter (i.e., the subscription probability) from the invitation survey, asked to all inviters about each eligible invitee.

Note 2: Different from figures in col. (V) and those shown in Table 1, these statistics refer to the specific time of the follow-up (i.e., they exclude invitees who were invited and/or joined after WB353), and are based on either the inviter's reports in the follow-up (col. (II) and (III)) or records from the Referral survey (col. (IV)). On the other hand, the subscription requirements are less stringent in columns (II) through (IV) than in col. (V), since joining invitees are not required to have taken WB355 (i.e., the Web and communication technology use survey for invitees).

Note 3: [%]s use (I) as denominator.

Note 4: [%]s use (I-NM) as denominator, i.e., non-members only.

Note 5: [%]s use (I-M) as denominator, i.e., members only.

Work in Progress We plan to analyze observed invitation and subscription behaviors as a function of the inviter's and invitee's characteristics, of the relationship between them, and of design features of the invitation-and-subscription protocol. Our analysis will connect two currently separate streams of literature in survey methodology: The first deals with modeling, analysis, and correction of unit non-response to web surveys (e.g., Couper (2000), Schonlau et al. (2002), Schonlau et al. (2009), Fan and Yan (2009), Goritz (2006), and LozarManfreda et Al. (2011), among others). The second and narrower literature deals with unit non-response by secondary respondents in multi-actors surveys (e.g., Kalmijn and Liefbroer (2011) and Schroder et Al. (2013)).²

To successfully recruit a parent, child, or spouse we need two things to happen: First, the current member of the survey panel must agree to invite the secondary respondent. Then the secondary respondent must agree to participate in, or subscribe to, the survey upon receiving the information. Recruitment may also depend on perceptions of the primary respondent about the secondary respondent's willingness to join.

To examine invitation and subscription behavior we ask an extensive battery of questions at several points in time. One innovative feature is that in the initial survey we ask primary respondents to report their subjective probability that their relative would participate if the primary respondent invited them to do so. We plan to use this information, along with other information that we collect about the primary respondent and the secondary respondent,³ to model the probability that the secondary respondent will join if they are actually invited by the primary respondent. We will also use it to model the probability that the primary respondent will invite the secondary respondent given their expectations about the secondary respondent's likelihood of participating.

We measure whether the primary respondent invited the secondary respondent by asking the primary respondent in a follow up survey approximately two weeks after the initial survey. Not all invitation and subscription decisions will necessarily be completed within two weeks, so this limits our measurement of invitation behavior. However, we collect inviters' subjective probabilistic expectations that any secondary respondent who has not yet subscribed will do so (unconditionally and/or conditionally on being invited) and that the primary respondent will invite those relatives of theirs they have not yet invited at the time of the follow-up.⁴ This additional information, which incorporates information the primary respondent may acquire from talking to the secondary respondent, will improve our understanding of the decision processes leading to invitation by primary respondents. (We expand on this point below.)

Our use of subjective probability questions connects us to a growing literature in economics using data on subjective probabilistic expectations to analyze individual or family decisions in various domains (e.g., Delavande (2008), Zafar (2013), Blass et Al. (2010), Kedzi and Willis (2011), Stinebrickner and Stinebrickner (Forthcoming), Giustinelli (2011), Li and Lee (2009), Manski and Neri (2013), among

²“Obtaining reports about family relationships from more than one family member raises issues beyond the costs of survey time and money, particularly the difficulty involved with dealing with conflicting reports. (...) A more serious concern for studying intergenerational processes is that studies that attempt to interview multiple respondents in the same family have much greater success interviewing additional family members with whom the original respondent has a good relationship than when the original respondent reports a poor relationship with the other person. Response rates for additional family respondents also are higher when they live with the original respondent than for those who live in separate households (Dykstra et al. 2004). Methodological work to learn more about the reasons for other family members non-participation—the original respondent's refusal to provide contact information, inadequate contact information for the second family member, or that person's refusal to participate—will help investigators develop ways to reduce this type of bias.” (Bianchi et Al., 2008)

³ All information about secondary respondents is reported by the primary respondent in cases where the secondary respondent does not participate.

⁴ In fact, they constitute direct measures of inviters' propensity to invite and invitees' propensity to subscribe, unconditionally and/or conditional on being invited. See Schonlau et Al. (2009) and Kalmijn and Liefbroer (2011) on use of propensity score to test and correct for bias due non-response by main and secondary respondents, respectively.

others).⁵To our knowledge, we are the first to use subjective expectations to analyze any type of survey participation decision.

In addition to questions about subjective probabilities, we ask many other questions that relate to invitation and subscription behavior:

- (i) Primary respondents' characteristics (e.g., age, ethnicity, education, working status, occupation, household and family structure and basic characteristics).
- (ii) Primary respondents' use of web and communication technologies, both in general and to communicate with their family, from the initial invitation survey.
- (iii) Reports about all secondary respondents' characteristics made by primary respondents and secondary respondents' self-reported characteristics if they join.
- (iv) Reports about all secondary respondents' use of web and communication technologies and more detailed self-reported information about computer use for all secondary respondents who participate.
- (v) Aspects of the inviter-invitee relationship, as captured by frequency of contact, physical distance, and additional questions as reported by the primary respondent.

The approach outlined so far to analyze survey participation has focused on two distinct actions: a primary respondent's decision to invite a secondary respondent and that secondary respondent's decision to subscribe follows. This approach follows naturally from the protocol of most multi-actor surveys where these two or similar events must happen and often can be measured independently. Primary and secondary respondents are left free in terms of how the choices are made in practice.⁶ Some families or even different members of the same family may approach the invitation procedure differently: in practice it may be a single decision to be discussed and made jointly.⁷

Additional information we collect in the follow-up survey about whether inviter and invitee have discussed whether the latter should join the panel, and about whether they made their decision(s) individually or jointly, will enable us to explore how discussions between different actors influence the decisions they make. In examining the interplay of different actors in the decision making process we connect to a growing literature in family economics.⁸(See Giustinelli(2011) for an example focusing on child-parent decision making, and references therein more generally.)

Proposed Use of Dyads Sample by Project 3 We have a total sample of 414 dyads, coming from 197 families. 272 dyads are made of a child-parent pairs. Such pairs can be used to ask both members of the dyad about the probability of some specific event, e.g., nursing home use by a parent in the future. That is, eliciting the subjective probability from the parent and separately from the child one will obtain a measure of concordance of expectations between the child and the parent. In a similar way, one can find the concordance of expectations about the provision of informal care.

⁵They variously feature unresolvable and/or resolvable uncertainty, hypothetical scenarios, time dynamics, non-strategic or strategic interactions among decision makers, etc. See also Manski (2004), Hurd (2009), and van der Klaauw (2012) for excellent reviews of measurements and uses of subjective probabilistic expectations data.

⁶ In fact, in existing studies where secondary respondents are recruited through pre-existing primary respondents, such as the *pairfam* or the NKPS, the latter are generally asked to provide contact information of the former, who are then contacted by the study's staff inviting them to participate.

⁷And where invitation and subscription merely constitute implementation steps, after the decision has been made.

⁸ Notice that this is especially relevant for the protocol we pursue here, as recruitment of secondary respondents is achieved via invitation of the latter by primary respondents and such that we do not collect contact information of secondary respondents unless they decide to join the ALP.

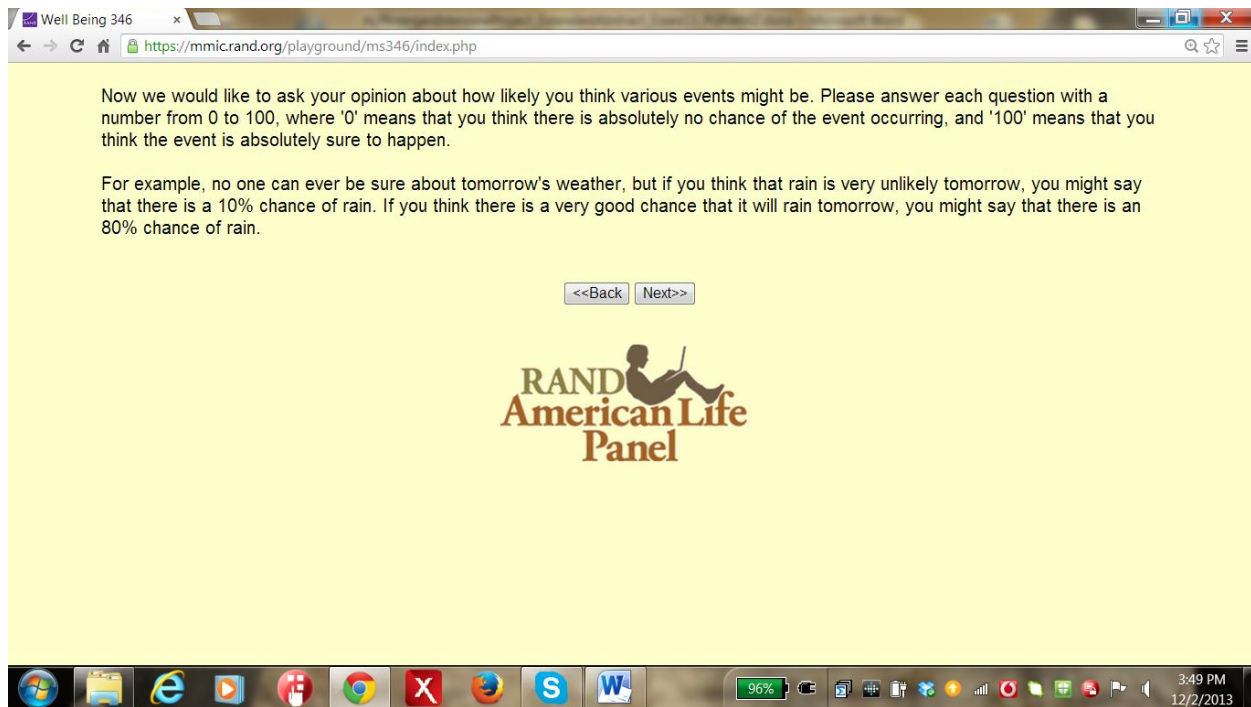
References

- [1] Bianchi, M.S. and V.J. Hotz and K. McGarry and J.A. Seltzer (2008), 'Intergenerational Ties: Alternative Theories, Empirical Findings and Trends, and Remaining Challenges,' in *Caring and Exchange Within and Across Generations*, ed. A. Booth, A.C. Crouter, S.M. Bianchi, and J.A. Seltzer. Washington, DC: Urban Institute
- [2] Blass, A.A. and S. Lach and C.F. Manski (2010), 'Using Elicited Choice Probabilities to Estimate Random Utility Models: Preference For Electricity Reliability,' *International Economic Review*, vol. 51, n. 2, pp. 421-440
- [3] Couper, M.P. (2000), 'Web Surveys: A Review of Issues and Approaches,' *Public Opinion Quarterly*, vol. 64, n. 4, pp. 464-494
- [4] Couper, M.P. and A. Kapteyn and M. Schonlau and J. Winter (2007), 'Noncoverage and Nonresponse in an Internet Survey,' *Social Science Research*, vol. 36, pp. 131-148
- [5] Delavande, A. (2008), 'Pill, Patch or Shot? Subjective Expectations and Birth Control Choice,' *International Economic Review*, vol. 49, n. 3, pp. 999-1042
- [6] Dykstra, P.A., and M. Kalmijn and T.C.M. Knijn and A.E. Komter and A.C. Liefbroer and C.H. Mulder (2004), *Codebook of the Netherlands Kinship Panel Study, a Multi-Actor, Multi-Method Panel Study on Solidarity in Family Relationships, Wave 1*, NKPS Working Paper No. 1, The Hague: Netherlands Interdisciplinary Demographic Institute (<http://www.nkps.nl/NKPSEN/nkps.htm>, Codebook version July 2004, Version 0)
- [7] Dykstra, P.A., and A.C. Liefbroer and M. Kalmijn and T.C.M. Knijn and A.E. Komter and C.H. Mulder (2006), *Family Relationships: The Ties that Bind. A Sociological and Demographic Research Programme 2000-2006*, Netherlands Interdisciplinary Demographic Institute, NKPS Working Paper
- [8] Fan, W. and Z. Yan (2010), 'Factors Affecting Response Rates of the Web Survey: A Systematic Review,' *Computers in Human Behavior*, vol. 26, n. 2, pp. 132-139
- [9] Giustinelli, P. (2011), *Group Decision Making with Uncertain Outcomes: Unpacking Child-Parent Choice of the High School Track*, HCEO Working Paper, 30
- [10] Goritz, A.S. (2006), 'Incentives in Web Studies: Methodological Issues and a Review,' *International Journal of Internet Science*, vol. 1, n. 1, pp. 58-70
- [11] Huinink, J. and J. Bruderl and B. Nauck and S. Walper and L. Castiglioni and M. Feldhaus (2011), 'Panel Analysis of Intimate Relationships and Dynamics (*pairfam*): Conceptual Framework and Design,' *Journal of Family Research*, vol. 23, pp. 77-100
- [12] Hurd, M.D. (2009), 'Subjective Probabilities in Household Surveys,' *Annual Review of Economics*, vol. 1, pp. 543-562

- [13] Kalmijn, M. and A.C. Liefbroer (2011), 'Nonresponse of Secondary Respondents in Multi-Actor Surveys: Determinants, Consequences, and Possible Remedies,' *Journal of Family Issues*, vol. 32, n. 6, pp. 735-766
- [14] Kezdi, G. and R.J. Willis (2011), *Household Stock Market Beliefs and Learning*, NBER Working Paper, n. 17614
- [15] Li, J. and L.-F. Lee (2009), 'Binary Choice Under Social Interactions: An Empirical Study With and Without Subjective Data on Expectations,' *Journal of Applied Econometrics*, vol. 24, pp. 257-281
- [16] LozarManfreda, K. and N. Berzelak and V. Vehovar (2011), 'Nonresponse in Web Surveys,' *International Encyclopedia of Statistical Science*, part 14, pp. 984-987
- [17] Manski, C.F. (2004), 'Measuring Expectations,' *Econometrica*, vol. 72, n. 5, pp. 1329-1376
- [18] Manski, C.F. and C. Neri (2013), 'First- and Second-Order Subjective Expectations in Strategic Decision-Making: Experimental Evidence,' *Games and Economic Behavior*, vol. 81, pp. 232-254
- [19] Schonlau, M., and R. Fricker and M. Elliott, 'Conducting Research Surveys via E-Mail and the Web,' RAND, Santa Monica, CA. 2002, pp. xxiv+118
- [20] Schonlau, M. and A. van Soest and A. Kapteyn and M.P. Couper (2009), 'Selection Bias in Web Surveys and the Use of Propensity Scores,' *Sociological Methods Research*, vol. 37, n. 3, pp. 291-318
- [21] Schonlau, M. and B. Weidmer and A. Kapteyn (2012), *Recruiting in an Internet Panel Using Respondent Driven Sampling*, Working Paper, University of Waterloo and RAND
- [22] Schroder, J. and L. Castiglioni and J. Bruderl and U. Krieger (2013), 'The Influence of Relationship Quality on the Participation of Secondary Respondents: Results from the German Family Panel,' *Comparative Population Studies*, vol. 37, n. 3-4, pp. 591-614
- [23] Stinebrickner, R. and T. Stinebrickner (Forthcoming), 'A Major in Science? Initial Beliefs and Final Outcomes for College Major and Dropout,' *Review of Economic Studies*
- [24] van der Klaauw, W. (2012), "On the Use of Expectations Data in Estimating Structural Dynamic Choice Models," *Journal of Labor Economics*, Vol. 30, n. 3, pp. 521-554
- [25] Zafar, B. (2013), 'College Major Choice and the Gender Gap,' *Journal of Human Resources*, vol. 48, n. 3, pp. 545-595

Appendix A: Questions sequence from the initial Invitation Survey (WB346), eliciting (i) Inviters' subjective probabilistic expectations about subscription behavior of their eligible invitees (conditional on receiving an invitation); (ii) Inviters' willingness to invite their eligible invitees and mode of invitation

*** Warm-up questions ***



Well Being 346 x

https://mmic.rand.org/playground/ms346/index.php

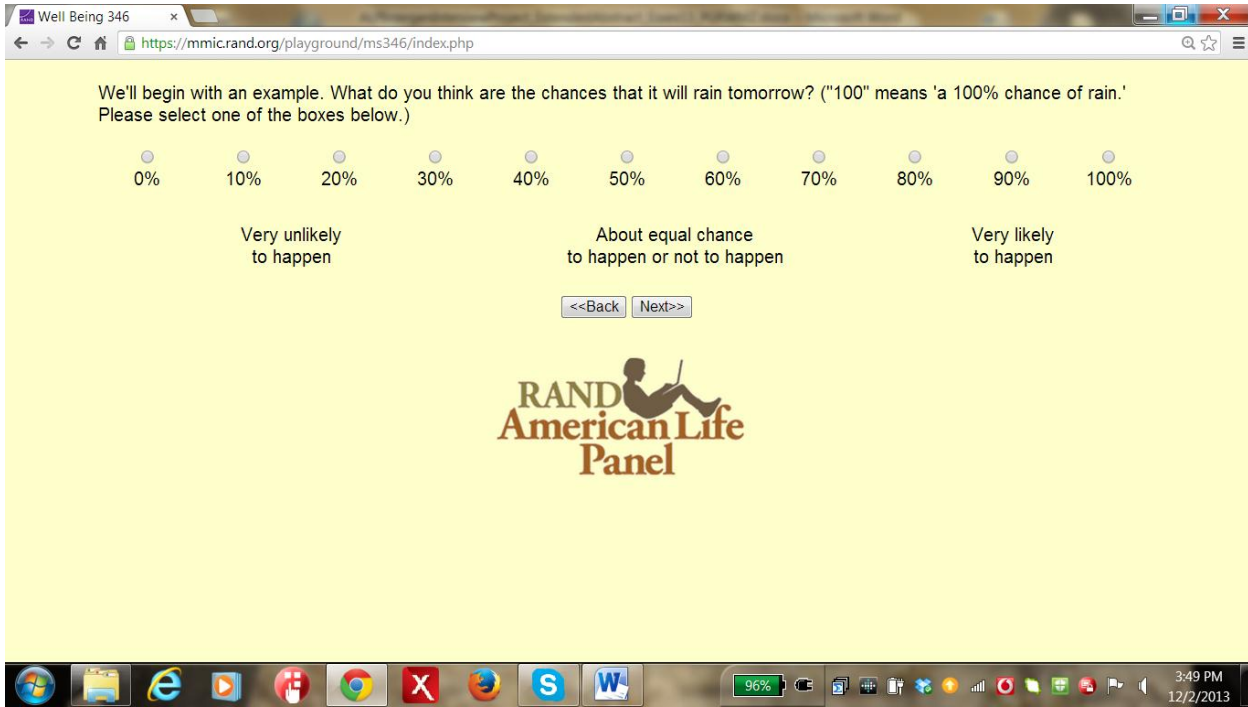
Now we would like to ask your opinion about how likely you think various events might be. Please answer each question with a number from 0 to 100, where '0' means that you think there is absolutely no chance of the event occurring, and '100' means that you think the event is absolutely sure to happen.

For example, no one can ever be sure about tomorrow's weather, but if you think that rain is very unlikely tomorrow, you might say that there is a 10% chance of rain. If you think there is a very good chance that it will rain tomorrow, you might say that there is an 80% chance of rain.

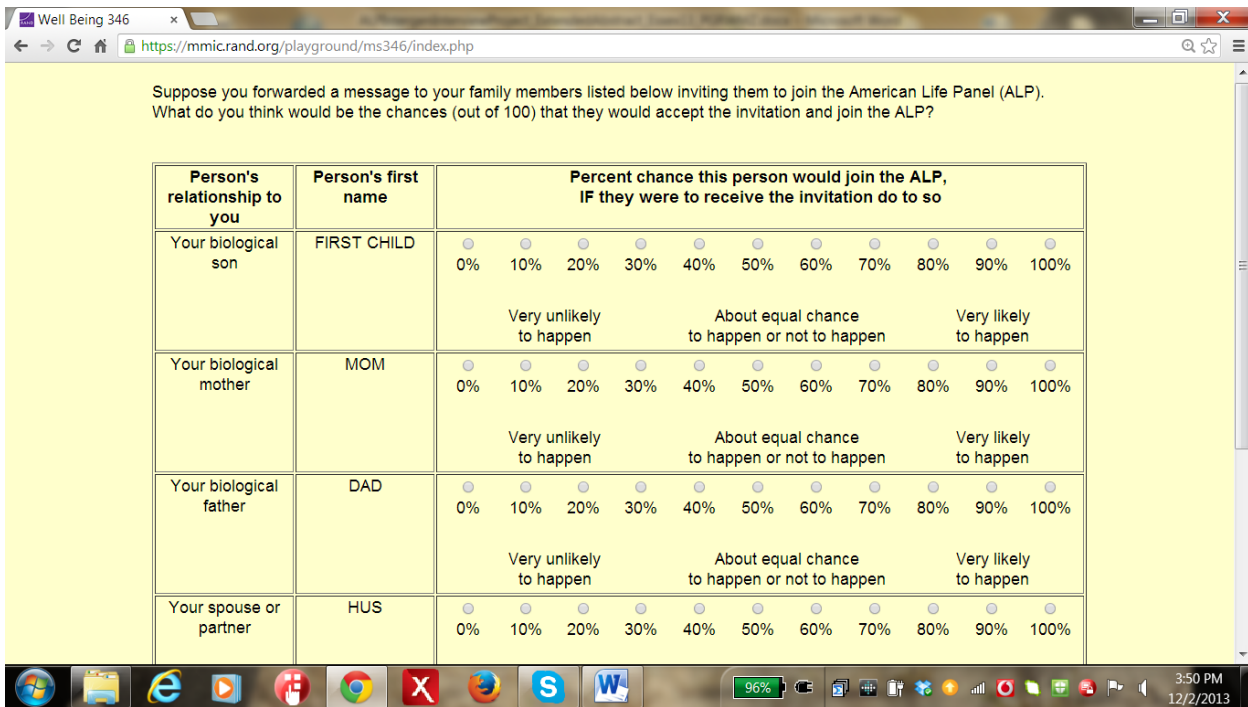
<<Back Next>>

RAND
American Life
Panel

96% 3:49 PM 12/2/2013



*** Inviter's probabilistic beliefs about invitees' subscription (conditional on the former forwarding an invitation to the latter) ***



*** Inviter's willingness to invite ***

Well Being 346 x

https://mmic.rand.org/playground/ms346/index.php

We want to invite the following people to join the ALP. To protect their privacy we will ask you to invite them by forwarding an invitation from us. For each relative who joins and completes their first survey, we will give \$30 to you and \$20 to them. Our offer is in addition to the usual payments that you both receive for completing surveys.

Your relatives are free to decline our invitation; even if they decide to take the introductory survey, they are still free to choose whether to take any additional surveys for the ALP.

Please select 'Yes' for each relative you would like to invite and then click 'Next'.

Person's relationship to you	Person's first name	Do you want to invite this person?	
		Yes	No
Your biological son	FIRST CHILD	<input type="radio"/>	<input type="radio"/>
Your biological mother	MOM	<input type="radio"/>	<input type="radio"/>
Your biological father	DAD	<input type="radio"/>	<input type="radio"/>
Your spouse or partner	HUS	<input type="radio"/>	<input type="radio"/>

<<Back Next>>

96% 3:51 PM 12/2/2013

*** Mode of invitation ***

Well Being 346 x

https://mmic.rand.org/playground/ms346/index.php

Thank you for agreeing to invite some of your relatives! To make the process easier for you, we will send you an e-mail or letter to forward to your relatives. The e-mail or letter includes all of the information that your relatives need to join. Would you prefer to receive e-mails, a letters, or both?

- Emails
- Letters
- Both

<<Back Next>>

RAND
American Life
Panel

96% 3:55 PM 12/2/2013

Appendix B: Questions sequence from the Invitation Follow-up Survey (WB353), eliciting (i) Inviters' subjective probabilistic expectations about invitees' subscription behavior (unconditional and conditional on receiving an invitation); (ii) Inviters' invitation expectations

*** Questions sequence covering inviters' eligible relatives inviters did agree to invite in the initial invitation survey ***

Well Being 353 x
 https://mmic.rand.org/research/rand/ms353/index.php

In a recent survey you agreed to forward an invitation to one or more of your family members, listed below, to have them join the ALP. Have you discussed the ALP with any of them? Have you forwarded the invitation to any of them?

Person's relationship to you	Person's first name	Have you discussed the ALP with this person?	Have you forwarded the invitation to this person?
Your legally adopted son	CHILD ONE	Click here ▾	Click here ▾
Your former stepson	CHILD TWO	Click here ▾	Click here ▾ Click here Yes No

<<Back Next>>

RAND
American Life

96% 4:03 PM 12/2/2013

You told us that you forwarded the invitation to join the ALP to one or more of your family members, listed below. Do you know whether they have joined the ALP? Have they discussed their decision of whether to join with you?

Person's relationship to you	Person's first name	Has this person joined the ALP yet?	Has this person discussed their decision with you so far?
Your legally adopted son	CHILD ONE	<input type="button" value="Click here"/> <ul style="list-style-type: none"> <input type="button" value="Click here"/> <input type="button" value="Yes"/> <input type="button" value="No"/> <input type="button" value="Don't know"/> 	<input type="button" value="Click here"/>

In a recent survey, you agreed to forward an invitation to join the ALP to the following relative(s) of yours. What do you think are the chances (out of 100) that they will join the ALP? (Please take into account all information you have about your relatives and the invitation we asked you to forward.)

Person's relationship to you	Person's first name	Percent chance this person will join the ALP
Your legally adopted son	CHILD ONE	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <input type="radio"/> 0% </div> <div style="text-align: center;"> <input type="radio"/> 10% </div> <div style="text-align: center;"> <input type="radio"/> 20% </div> <div style="text-align: center;"> <input type="radio"/> 30% </div> <div style="text-align: center;"> <input type="radio"/> 40% </div> <div style="text-align: center;"> <input type="radio"/> 50% </div> <div style="text-align: center;"> <input type="radio"/> 60% </div> <div style="text-align: center;"> <input type="radio"/> 70% </div> <div style="text-align: center;"> <input type="radio"/> 80% </div> <div style="text-align: center;"> <input type="radio"/> 90% </div> <div style="text-align: center;"> <input type="radio"/> 100% </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;">Very unlikely to happen</div> <div style="text-align: center;">About equal chance to happen or not to happen</div> <div style="text-align: center;">Very likely to happen</div> </div>
Your former stepson	CHILD TWO	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <input type="radio"/> 0% </div> <div style="text-align: center;"> <input type="radio"/> 10% </div> <div style="text-align: center;"> <input type="radio"/> 20% </div> <div style="text-align: center;"> <input type="radio"/> 30% </div> <div style="text-align: center;"> <input type="radio"/> 40% </div> <div style="text-align: center;"> <input type="radio"/> 50% </div> <div style="text-align: center;"> <input type="radio"/> 60% </div> <div style="text-align: center;"> <input type="radio"/> 70% </div> <div style="text-align: center;"> <input type="radio"/> 80% </div> <div style="text-align: center;"> <input type="radio"/> 90% </div> <div style="text-align: center;"> <input type="radio"/> 100% </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;">Very unlikely to happen</div> <div style="text-align: center;">About equal chance to happen or not to happen</div> <div style="text-align: center;">Very likely to happen</div> </div>

Well Being 353 x

← → ↻ 🏠 <https://mmic.rand.org/research/rand/ms353/index.php> 🔍 ☆ ☰

You told us that you have not yet forwarded the invitation to join the ALP to one or more of your family members you agreed to invite. What do you think are the chances (out of 100) that you will forward the invitation to them?

Person's relationship to you	Person's first name	Percent chance you will forward the invitation to this person
Your former stepson	CHILD TWO	<p>0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%</p> <p>Very unlikely to happen About equal chance to happen or not to happen Very likely to happen</p>

Windows taskbar: 96% battery, 4:05 PM 12/2/2013

Well Being 353 x

← → ↻ 🏠 <https://mmic.rand.org/research/rand/ms353/index.php> 🔍 ☆ ☰

Now assume you were to forward the invitation to join the ALP to the following family members of yours. What do you think would be the chances (out of 100) that they would join the ALP in this case?

Person's relationship to you	Person's first name	Percent chance this person would join the ALP, IF they were to receive the invitation do to so
Your former stepson	CHILD TWO	<p>0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%</p> <p>Very unlikely to happen About equal chance to happen or not to happen Very likely to happen</p>

Windows taskbar: 96% battery, 4:06 PM 12/2/2013

*** Questions sequence covering inviters' eligible relatives
 inviters did not agree to invite in the initial invitation survey ***

Assume you were now given the opportunity to invite the following relative(s) of yours to join the ALP, **and that you were to do so**. What do you think would be the chances (out of 100) that they would join the ALP?

Person's relationship to you	Person's first name	Percent chance this person would join the ALP, IF they were to receive the invitation do to so
Your legally adopted daughter	CHILD THREE	<p>0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%</p> <p>Very unlikely to happen About equal chance to happen or not to happen Very likely to happen</p>

Well Being 353 x
 https://mmic.rand.org/research/rand/ms353/index.php

What do you think would be the chances (out of 100) that you would forward a letter or e-mail inviting the following relative(s) of yours to join the ALP, if now given the opportunity to do so?

Person's relationship to you	Person's first name	Percent chance that you would forward the invitation to this person, if given the opportunity
Your legally adopted daughter	CHILD THREE	<p>0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%</p> <p>Very unlikely to happen About equal chance to happen or not to happen Very likely to happen</p>

<<Back Next>>

Windows taskbar: 96% battery, 4:07 PM 12/2/2013

Appendix C: Inviter-invitee decision making about invitation and subscription

*** Asked about eligible relatives who, according to their inviters, had both been invited and joined at time of the follow-up ***

Well Being 353 x
 https://mmic.rand.org/research/rand/ms353/index.php

In a recent survey you agreed to forward an invitation to one or more of your family members, listed below, to have them join the ALP. Have you discussed the ALP with any of them? Have you forwarded the invitation to any of them?

Person's relationship to you	Person's first name	Have you discussed the ALP with this person?	Have you forwarded the invitation to this person?
Your legally adopted son	CHILD ONE	Click here ▾	Click here ▾
Your former stepson	CHILD TWO	Click here ▾ Click here Yes No	Click here ▾

<<Back Next>>



RAND American Life logo

Windows taskbar: 96% battery, 4:10 PM 12/2/2013

Well Being 353 x
 https://mmic.rand.org/research/rand/ms353/index.php

You told us that you forwarded the invitation to join the ALP to one or more of your family members, listed below. Do you know whether they have joined the ALP? Have they discussed their decision of whether to join with you?

Person's relationship to you	Person's first name	Has this person joined the ALP yet?	Has this person discussed their decision with you so far?
Your legally adopted son	CHILD ONE	Click here ▾	Click here ▾
Your former stepson	CHILD TWO	Click here ▾	Click here ▾ Click here Yes No






4:12 PM
12/2/2013

Well Being 353 x
 https://mmic.rand.org/research/rand/ms353/index.php

When it comes down to the decision of having them join the ALP, which one of the following best describe how that decision was made for each of the following people? Please select only one answer.

Person's relationship to you	Person's first name	How was the decision about whether this person would join the ALP made?
Your legally adopted son	CHILD ONE	Click here ▾
Your former stepson	CHILD TWO	Click here ▾ Click here I decided to invite CHILD TWO. And then CHILD TWO decided to subscribe. We made the decision together.

4:12 PM
12/2/2013

