Consequences of Marital Conflict and Divorce for Child Development in South Korea

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Abstract

Literature on effects of marital conflict and divorce on child development has long wondered 1) whether divorce followed by parents' marital conflict exerts distinguishable impacts on children and 2) whether marital conflict is more detrimental to involved children than divorce per se. We address these questions using the Korea Youth Panel Study-Elementary School Students that traced students from 4th grade in 2003 to 8th grade in 2007. Our results indicate 1) that children suffered from parental divorce as well as marital conflict, 2) that the adverse effect seems larger for parental divorce than marital conflict, 3) that there was domain specificity for differential effect of parental divorce by preceding marital conflict, and 4) that children who were under parents' marital conflict were further disadvantaged if their parents decided to end their marriage.

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Numerous studies have repeatedly reported that parental divorce is detrimental for life chances of those children involved in the process (Amato & Keith, 1991; Hetherington, 1979). Children of divorce, for instance, were found to be more likely to lag in cognitive skills indexed by math and reading test scores than children of intact families from the in-divorce stage onward (Kim, 2011; Sun and Li, 2001). Parental divorce also tended to enhance the risk of high school dropout and lower the likelihood of progress to college (Aston & McLanahan, 1994). Children of divorce appeared to go through a spell of emotional disruption more frequently than their counterparts as well. Using the National Child Development Study, for instance, Cherlin, Chase-Landsdale, and McRae (1998) showed that children of divorce were in a worse mental health compared to children of intact families even after taking various selection factors into account.

This quite consistent finding of adverse effect of parental divorce is not restricted geographically to the United States and European Hemisphere. Strong body of literature in South Korea (hereafter, Korea) has established theoretical mechanisms as well as empirical evidence associating observable setbacks in child development with parental divorce (for instance, Jeong, 2011; Ji & Lee, 2012). However, a dominant portion of studies in Korea as well as in Western countries suffer from methodological problems especially because they used cross-sectional data obtained from convenient samples (see, for instance, Cherlin et al., 1991; Kim, 2011 for a few notable exceptions).

More importantly, a couple of theoretical points are not well understood yet regarding distinct impacts of marital conflict and parental divorce. First, we would like to know whether there is a difference in negative impacts of parental divorce depending on whether children go

through preceding marital conflict between their parents or not . An answer from this question would illuminate whether preceding marital conflict is a moderator of the divorce effect. More specifically, we are interested in finding distinguishable effect of parental divorce on children who undergo preceding marital conflict. On the other hand, many scholars have wondered a relative strength of marital conflict and divorce per se. For instance, Mechanic and Hansell (1989) found that marital conflict was likely to enhance adolescents' depressed mood, anxiety, and physical symptoms while divorce per se was not related to changes in health outcomes.

In an attempt to close these gaps in the literature, we first tackle the problem of whether there is noticeable effect of parental divorce on diverse dimensions of child development such as cognitive skills and non-cognitive traits in Korea. Next we attempt to unveil whether effect of parental divorce would be heterogeneous by parents' marital discord that children observed before marital dissolution. If we are to find a similar effect size between two groups of conflict-ridden marriage and decent marriage, we may infer that marital conflict is not the only one mediator connecting divorce to adverse consequences and there is something unique in the divorce process that gives parental divorce its negative power. Otherwise, we may conclude that a large part of the divorce effect would flow through marital conflict.

However, these analytical plan does not illuminate if marital conflict between two parents, whether it leads to divorce or not, inflict negative impacts on child development. This is just because children of intact families include children who suffer from marital conflict. Based on this recognition, we attempt to evaluate effects of parental marital conflict on child development using marital conflict measures between two adjacent survey waves. Namely, we make a variable with four categories depending on existence of marital conflict at time 1 and time 2: 1) no conflict-no conflict, 2) no conflict-in conflict, 3) in conflict - no conflict, 4) in conflict - in

conflict. By comparing children in the other three categories with those in the first category, we can appraise impacts of marital conflict on child development.

Notice, though, that divorce occurred between time 1 and time 2 can be included any category in the variable such that we are not allowed to examine impacts of parental divorce in this study design. To figure out complex dimensions of effects of parental divorce and marital conflict, in the third study, we propose a study design in which we classify children into six mutually exclusive and exhaustive categories according to existence of marital conflict at time 1 and marital outcome at time 2: 1) no conflict-no conflict, 2) no conflict- in conflict, 3) in conflict-no conflict, 4) in conflict-in conflict, 5) no conflict-divorce, 6) in conflict-divorce. By comparing children in the other five categories with those in the first categories, we are in a better position to assess a specific effect of parental divorce and marital conflict on child development.

To implement abovementioned study designs, we will analyze the Korea Youth Panel Survey- Elementary School Students (KYPS). The panel study has traced students from 4th grade in elementary school in 2004 until 8th grade in 2008. But we investigate data from the first five waves due to data disclosure policy from the data collectors. From a methodological point of view, we employ the framework of the traditional ordinary least squares complemented by the counterfactual framework utilizing a matching estimator in R (Sekhon, 2011).

Data and Measurement

Data

To explore effects of parental divorce and marital conflict on child development, we analyze the Korea Youth Panel Survey-Elementary School Students (KYPS). KYPS is a panel study which started collecting information on students and their parents in 4th grade in 2004 and continued until 8th grade in 2008 for the purpose of unveiling everyday lives of students to inform educational policies (National Youth Policy Institute, 2012). In 2004, data collectors chose nationally representative schools except for Jeju Island followed by random choice of a class from which all students were drawn. Even though they did not gather information from teachers and did not give any direct cognitive tests, we believe KYPS is the best source available to examine our research interest.

Measurement

Divorce. We take the parental divorce variable from four questions directed to children about parental divorce and separation such that our divorce variable includes parental separation, which is a common practice in the literature. In the survey of the 8th grade, one question asked "have you ever experienced parental divorce?" that was followed by another question "when did that happen?" The same types of questions were queried regarding parental separation. We assign the value zero to the divorce variable if a child had not gone through either parental divorce or separation ever. The value of the variable turns to unity if the child endured either parental divorce or separation in the period spanning from 4th grade to 8th grade. We restrict the period of risk exposure to divorce to 4th grade and over exactly because we would like to include outcome variables measured at 4th grade to the set of control variables, which allows us to examine differential changes in outcome variables attributable to parental divorce.

Mainly two considerations were involved in our decision to use children's response rather than parents' response. There were no questions in the parents' surveys throughout the study period that asked directly about divorce or separation. Of course, there were questions on family composition living together in a household but it is highly error prone to use them because many children lived alone or with only one parent for many other reasons such as bereavement or educational causes than divorce or separation. We also thought that de facto divorce effect would be more measureable than de jure divorce effect. Parental divorce not perceived as it was by children would not inflict much more harm to those children than parental divorce perceived as such, particularly when it comes to children's psychological health.

Parents' marital conflict. Children received two questions on parents' marital conflicts at both survey points: 1) I have found my parents badmouth each other several times and 2) I have found my parents in a physical fight several times. These questions had five response alternatives from "strongly disagree (=0)" to "strongly agree (=4)". Marital conflict is a dichotomous variable which has the value zero if a child marked the first or second choice in at least one of those two questions and unity otherwise. Therefore, the value one in the variable implies parents were in marital discord.

Outcome variables. Differential growth traceable to parental divorce will be assessed in six outcome variables: Korean, English, and math grades, self-reported health, externalizing and internalizing problem behaviors. Owing to lack of test scores, we determine to utilize self-reported grades in the last semester. Questions were, for instance, "was your grade in Korean among classmates 0) very poor, 1) poor, 2) fair, 3) good, 4) very good ?" The bigger values in this variable represent better grades and performance in a respective academic subject. Self-reported health was measured by the question "do you agree or disagree: I am not in good

health?" There were five choices ranging from "strongly disagree (=0)" to "strongly agree (=4)", indicating that the higher point, the worse health.

Externalizing problem behaviors were evaluated by summing individual item scores of six questions. 1) I may hit someone if I get pissed off, 2) If someone hit me, I hit him or her in retaliation, 3) I engage in a fight more frequently than others, 4) I sometimes get upset to throw things away, 5) I can't often but have a feeling to hit anyone, 6) I feel a burst of anger without any good reason. Each of these questions had five choices from "strongly disagree (=0)" to "strongly agree (=4)" leading to higher values in the variable for doing problem behaviors more frequently. Internalizing problem behaviors also summed individual item scores of the following six questions with the same choice set as above. 1) I have lost all my interest in just about everything, 2) I worry about everything, 3) I often feel anxious without any good reason, 4) I often feel lonely without any good reason, 5) I often feel sad and depressed without any good reason, 6) I often feel willing to commit suicide without any good reason. It may be worth noting that alpha reliabilities for items of the externalizing and internalizing problem behaviors are .757 and .794 respectively when we use all observations available in 4^{th} grade.

Confounding variables. It would pose a serious problem if one failed to control for a sufficient set of confounding variables defined as variables that affect both the treatment variable and the outcome variables, particularly for an observational study (Rosenbaum, 2002). In all models, we include all outcome variables measured at the baseline survey. This way, we can trace differential growth during the divorce period that is attributable to parental divorce in addition to adjusting for plausible selection effects for parents who had low performing children to divorce. For a very clear reason, we also put the marital conflict variable appraised at 4^{th} grade into the covariate set. Gender of a child and urbanicity of residence are also considered as

confounding variables. Those are dichotomous variables indicating female as opposed to male (=0) and residing rural areas as opposed to urban areas (=0).

Several confounding variables come from parents' questionnaire thrown in 4th grade. Father's education as well as mother's education is likely to lower divorce hazards and to enhance children's cognitive skills and wellbeing. In close line with this observation, those variables are controlled for as categorical variables with three levels being less than high school (reference), high school, and more than high school. Whether parents own home or reside in other types would indicate long-term socioeconomic status that has found related to likelihood of divorce and child development. Our measure for this confounding is two dummy variables indicating rent with deposit and rent on monthly basis against own home. In a similar vein, we control for household income which is transformed into log scale.

Sample Selection

The number of original samples counts 2,844 but it shrinks to 2,063 when we get the analytical dataset after applying listwise deletion, which means dropping every observation with at least one missing value among variables in a given dataset. There are three sources of attrition: 1) not eligible to study (N=91), 2) longitudinal attrition (N=396), and 3) item non-response (N=294). Some children in the original sample already endured parental divorce or separation by the baseline survey such that those are not eligible for our study. Some children went through parental divorce but approximate date was not known, which obliges us to discard those children from our analytical sample.

Main sources of attrition are longitudinal attrition by the last follow-up and item non-response at both surveys. Nevertheless we believe 74.9% (=2,063*100/(2,844-91)) of a retention rate after four years of follow-ups are quite high compared to a comparable study in the United States, the Early Childhood Longitudinal Study-Kindergarten Cohort 1998-1999 which had 15,305 and 9,725 students responded at 3rd and 8th grade respectively, leading to roughly 63.5% of retention rate between two adjacent survey points (Tourangeau et al., 2009).

Results

Descriptive Statistics

Table 1 reports descriptive statistics for our analytical dataset. The first column shows descriptive statistics for all children and the second and third column display descriptive statistics for children whose parents stayed married and divorced in subsequent 4 years.

[Table 1 about here]

We have 2,063 children observed at both 4th and 8th grade among that 69 children went through parental divorce. 25.8% of all children reported observing their parents in marital discord at the baseline but the percentage rises up to 39.1 if we restrict to children who would end up with parental divorce. This finding supports the assertion that marital discord is a precursor of marital dissolution though not all divorces are preceded by marital conflicts. A bit more children declared finding their parents in conflict at the follow-up in 8th grade. We also

notice that percentage of children of divorce is higher among children who witnessed parental marital conflict than that of all children. However, we are quite surprised with the percentage of 52.2 who did not encounter a series of episodes of parents' marital conflicts among those who ran across parental divorce. This implies that many parents try to conceal their marital conflict in front of their children on the one hand and that not all divorces are necessarily full of conflicts between two parties even in the divorce period on the other.

Reports on grades in academic subjects hover over the conceptual average 2 to reach 2.0 through 2.6 revealing that children tend to exaggerate their subjective grades in the positive direction particularly in 4th grade. We find there were differences in subjective grades between two groups in 4th grade but those differences in Korean and math were negligible failing to attain statistical significance of two-group t-test at the conventional .05 *p*-value. Those differences got widened in 8th grade enough to pass statistical significance of two-group t-test. These findings are in close line with Kim's research documenting the negative effect of parental divorce in the in-divorce period but the null effect in the pre-divorce period for American children (Kim, 2011).

Turning to non-cognitive traits, we detect negligible differences in health and mental health indexed by externalizing and internalizing problem behaviors. Indeed, t-tests for mean difference in those developmental domains between children of divorce and their counterparts reveal no significant difference in 4th grade. However, the gaps grew so large an extent by 8th grade that all t-tests acknowledge statistical difference suggesting detrimental shocks of parental divorce on developmental domains assessed in this article. Tendency of increase in externalizing and internalizing problem behaviors raises confidence on reliability of our analytical dataset because it is consistent with the time-honored finding on heightened psychological problem behaviors with emerging adolescence (e.g., Shaffer, 1999).

Slightly more than half of children were male in the full sample but approximately half of children were male for children of divorce. The following four variables portray children of divorce disadvantaged in socioeconomic status even before divorce process was kicked in. Disproportionately more children of divorce had their father with academic credentials of less than high school graduation while comparatively less children of divorce had father with more than high school graduation compared to children in intact families. This uneven distribution by divorce status stands out even more in the mother's education. More specifically, only 17.4% of children of divorce had mother who graduated more than high school while the percentage nearly doubled for their counterparts. Only 40.6% of children of divorce lived in their own home that is starkly contrasted with 64.7% of children in intact families. On top of that, children in intact families enjoyed living with substantially higher income than children of divorce. We also find that children residing in urban areas were more likely to undergo parental divorce than those living in rural areas.

Model Estimation

Table 2 exhibits numerical results from statistical models of ordinary least squares and a matching estimator for parental divorce and marital conflict effects. The first row block shows estimates on parental divorce effects and the second represents estimates on marital conflict effects. Each row within row blocks marks outcome variables such that, for instance, the row of Korean means that those are results from a model with the outcome variable being Korean. The first column block delivers estimates from ordinary least squares and the second displays those from a matching estimator. The first and second sub-column block presents results for average

effects and interaction effects respectively. The latter effects denote differential effects of parental divorce and marital conflict for children who endured marital conflict at the baseline survey as opposed to those who did not.

[Table 2 about here]

From Table 2, we find OLS estimates and matching estimates agree to negative impacts of parental divorce on Korean grades. Recalling that variance of Korean in 8th grade was .7 from Table 1, the effect size of -0.277 from OLS and -0.449 from the matching estimator is approximately a third and more than half of the variance, which are remarkably large. However, results from English skills differ depending on statistical models. Since we are concerned with extrapolation of OLS and, therefore, would like to impart pronounced weight on results from the matching estimator, we conclude that English skills were not affected by parental divorce. Estimates on math grades register roughly a third of the variance and are statistically significant, demonstrating that children of divorce lagged behind children in intact families in math achievement during the in-divorce period.

Coefficients on health and externalizing problem behaviors make us hesitate to draw a firm conclusion as to impacts of parental divorce because two statistical estimators do not give consistent results. We tend to believe no distinct mark of parental divorce on those developmental domains owing to reasons mentioned in the previous paragraph. Even though coefficients on internalizing problem behaviors are not large compared to their variance, those are statistically significant in both statistical estimators, convincing us distinguishable impacts of parental divorce in internalizing problem behaviors.

These results of significant impacts of parental divorce on math grades and internalizing problem behaviors but insignificant impacts on externalizing problem behaviors are astonishingly similar with the previous results on the study about American children of divorce (Kim, 2011). However, our study sharply departs from Kim's research in that we unearth negative impacts on Korean which is comparable to English for American children but no significant impacts on English. Results of the current study seem quite perplexing particularly because of contrasting results between Korean and English subject. We can just put forth two speculations on these findings. 1) English may not have its own room in the cognitive domain such that controlling for Korean and math takes up all the differential variation in English. 2) Children reported their subjective grades and they might lag precise information on their grades in English which began being instructed from 4th grade.

As to how to interpret coefficients on interaction effects we would like to make it clear that positive coefficients in cognitive skills would denote more negative influences of parental divorce which was not preceded by marital conflict before 4th grade than those otherwise. Readers can interpret results from non-cognitive traits exactly the opposite way because the higher points in those outcome variables mean the more problematic outcomes. This method of interpretation enables us to draw a conclusion from the matching estimator that children of divorce who suffered parental marital conflicts before divorce might enjoy relatively less setback in Korean and math grades than those who did not. In addition, the former children turned out to put up with deteriorated health and externalizing problem behaviors than the latter children. These findings, however, should not receive interpretative weight because those are not statistically significant in OLS and have trivial magnitude in effect size in the matching estimator.

Now we turn our attention to results on parents' marital conflict effects. We once again find that both estimators do not always produce similar effect sizes and statistical inferences so we will highlight results from the matching estimator. Coefficients in the lower right panel are statistically significant, which discloses that children under parents' marital conflict, whether they experienced parental divorce or not, degraded in cognitive skills as well as non-cognitive traits, on average. Comparison and contrast of coefficients between divorce effect models and martial conflict effect models reveal 1) that effect sizes of divorce are bigger in Korean, English, math, and internalizing problem behaviors than those of marital conflict, 2) that effect sizes of divorce are smaller in health and externalizing problem behaviors than those of martial conflict, and 3) that nevertheless all coefficients in marital conflict effects are statistically significant while those in divorce effects are not, exactly because of diminished standard errors in marital conflict models.

Coefficients on interaction effects suggest that children who confessed that parents were in marital conflict in both survey points are more likely to have reported worse outcomes in Korean and English grades in addition to health and internalizing problem behaviors than those whose parents were in marital conflict only in 8^{th} grade. One can easily see that the inverse is true for the other developmental domains. However all the coefficients are statistically insignificant for OLS and have trifling effect sizes in the matching estimator, leading to the tentative conclusion of no interaction effects.

Up until now, we are interested in average effects of parental divorce and marital conflict coupled with their interaction effects with marital conflict at the baseline survey. However, some researchers and many policy makers would be interested in differential growth along more specific treatment categories for effective and efficient intervention than average effects. Table 3

supplies answers for these research interests that are accessible from our analytical dataset. Namely, we classify children into six categories depending on whether children chronicled parents' marital conflict at both surveys and parental divorce at the follow-up: 1) not in conflict → not in conflict, 2) not in conflict → in conflict, 3) in conflict → not in conflict, 4) in conflict → in conflict, 5) not in conflict → divorce, and 6) in conflict → divorce. Then, we compare outcomes of children in each category against those of children who were not in parents' marital conflict at both surveys.

[Table 3 about here]

Results in Korean indicate that children of divorce who did not go through parental marital conflict before divorce suffered significant setback compared to children who did not experienced parents' marital conflict at both survey points. We observe that grades in English was not the subject that is readily vulnerable to parental divorce and marital conflict since there are no statistical significant estimates even though estimates related to divorce feature large effect size. Coefficients in math reveal that children who reported parents' marital conflict only at the later wave lagged behind children whose parents were not in marital conflict in both waves. We also unfailingly notice that children of divorce fell behind the baseline children whether their parents were in marital conflict at the first survey or not. Comparison of coefficients among those three rows demonstrates that divorce effect would be even larger that marital conflict effect.

Estimates in health unveil that children who underwent parents' marital conflict until the second wave were in disadvantaged status whether their parents were in marital conflict at the first wave or not. Also, we detect large divorce effect only if children were under parents'

marital conflict at the first wave. These patterns and effect sizes of estimates in health advance a conjecture that health might be a distinctive domain from the other developmental domains because estimates indicate that parents' marital conflict was the greater concern than divorce. By contrast, estimates in externalizing and internalizing problem behaviors agree in showing that both parental divorce and marital conflict were a significant stressor to child development. Nevertheless, comparison of effect sizes allows us to conclude that parental divorce was much more harmful threat to child development than marital conflict.

In addition, we would like to compare estimates from the second last and last row to determine whether there was differential effect of parental divorce by preceding marital conflict. Results in Korean suggest that divorce effect was more problematic when divorce was not preceded by marital conflict while results in math indicate that there was not differential effect. Quite contrary to these developmental domains, we find that divorce accompanied by preceding marital conflict exerted even more negative impacts on children in health, externalizing and internalizing behavior problems.

Last but not least, it would be of interest to compare the estimate in the third last row to that in the last in an attempt to determine whether children would be better off by exiting conflict-ridden parental marriage to divorce. The answer for this research question appears to be negative because children whose parents' conflict-ridden marriage ended up with divorce lagged behind those whose parents decided to maintain conflict-ridden marriage in various developmental areas.

Discussion and Conclusion

To summarize our findings, we found 1) that children suffer from parental divorce as well as marital conflict, 2) that the adverse effect seems larger for parental divorce than marital conflict, 3) that there was domain specificity for differential effect of parental divorce by preceding marital conflict, and 4) that children who were under parents' marital conflict were further disadvantaged if their parents decided to end their marriage.

We are urged to issue some caution to readers interpreting our results because of inevitable limitations of our study. Particularly we are concerned with possible measurement errors in cognitive skills and small sample sizes in children of divorce. Lack of cognitive test scores in our data source compelled us to use subjective grade report which might be vulnerable to measurement errors particularly in tracing cognitive growth. In addition, only 69 children went through parental divorce, which renders it hard to unmistakably uncover divorce effect let alone heterogeneous divorce effect by marital conflict.

These limitations notwithstanding, we are quite sure that our study contributes to deep understanding of divorce effect and marital conflict effect conceptually and empirically. We hope that future research on these areas build upon and go beyond our study.

References

Amato, P. R., & Keith, B. (1991). Parental divorce and adult well-being: a meta-analysis. *Journal of Marriage and Family, 53*(1), 43-58.

Astone, N. M,. & McLanahan, S. S. (1994). Family structure, residential mobility, and school dropout: a research note. *Demography, 31*(4), 575-584.

Cherlin, A. J., Chase-Lansdale, P. L., & McRae, C. (1998). Effects of divorce on mental health throughout the life course. *American Sociological Review, 63*, 239-249.

Cherlin, A. J., Furstenberg, Jr., F. F, Chase-Lansdale, P. L., Kiernan, K. E., Robins, P. K., Morrison, D. R., & Teitler, J. O. (1991). Longitudinal studies of effects of divorce on children in Great Britain and the United States. *Science, 252*(5011), 1386-1389.

Hetherington, E. M. (1979). Divorce: a child's perspective. *American Psychologist, 34*(10), 851-858.

Jeong, S. (2011). Influences of single-parent family and parental conflict on children's mental health. *Korean Journal of Social Welfare Studies, 42*(4), 165-186. In Korean.

Ji, S. R., & Lee, S. (2012). A study of depression in children of divorced families: focusing on the comparison of family structures. *Journal of the Korean Home Economics Association, 50*(3), 1-14. In Korean.

Kim, H. S. (2011). Consequences of parental divorce for child development. *American Sociological Review, 76*, 487-511.

Mechanic, D., & Hansell, S. (1989). Divorce, family conflict, and adolescents' well-being. *Journal of Health and Social Behavior, 30*(1), 105-116.

National Youth Policy Institute. (2012). *Korea Youth Panel Survey- Elementary 4th grade User's guide.* Seoul, South Korea: National Youth Policy Institute.

Rosenbaum, P. R. (2002). *Observational Studies Second Edition.* New York, NY: Springer-Verlag.

Sekhon, J. S. (2011). Multivariate and propensity score matching software with automated balance optimization: the matching package for R." *Journal of Statistical Software, 42*(7), 1-52.

Shaffer, D. R. (1999). *Developmental Psychology: Childhood and Adolescence*, 5th ed. Pacific Grove, CA: Brooks/Cole Publishing Company.

Sun, Y. & Li, Y. (2001). Marital disruption, parental investment, and children's academic achievement: a prospective analysis. *Journal of Family Issues, 22*(1), 27-62.

Tourangeau, K., Nord, C., Lê, T., Sorongon, A. G., & Najarian, M. (2009). *Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECKS-K), Combined User's Manual for the ECLS-K Eighth-Grade and K-8 Full Sample Data Files an Electronic Codebooks* (NCES 2009-004). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.

Table 1. Descriptive statistics

Variable[1)]	Value	Total (N=2063) M/F[2)]	Total (N=2063) V/P[3)]	Marry(N=1994) M/F[2)]	Marry(N=1994) V/P[3)]	Divorce (N=69) M/F[2)]	Divorce (N=69) V/P[3)]
Divorce	Marry	1994	96.7	1994	100.0	0	0.0
	Divorce	69	3.3	0	0.0	69	100.0
Conflict0	No conf	1530	74.2	1488	74.6	42	60.9
	In conf	533	25.8	506	25.4	27	39.1
Conflict1	No conf	1476	71.5	1440	72.2	36	52.2
	In conf	587	28.5	554	27.8	33	47.8
Korean0		2.5	0.6	2.5	0.6	2.4	0.6
Korean1		2.4	0.7	2.4	0.7	2.1	0.8
English0		2.2	1.2	2.2	1.2	1.9	1.0
English1		2.2	1.2	2.2	1.2	1.7	1.4
Math0		2.6	1.0	2.6	1.0	2.5	1.1
Math1		2.0	1.3	2.1	1.2	1.5	1.5
Health0		0.9	1.2	0.9	1.2	0.9	1.5
Health1		0.8	0.9	0.8	0.9	1.1	1.1
Externalizing0		8.1	20.2	8.0	19.9	8.9	28.6
Externalizing1		9.4	20.9	9.4	20.9	10.9	18.6
Internalizing0		6.6	24.0	6.6	23.9	7.4	27.2
Internalizing1		7.8	24.4	7.7	24.2	10.6	21.8
Gender	Male	1105	53.6	1071	53.7	34	49.3
	Female	958	46.4	923	46.3	35	50.7
Dad Edu	LT high	113	5.5	107	5.4	6	8.7
	High	892	43.2	864	43.3	28	40.6
	MT high	1058	51.3	1023	51.3	35	50.7
Mom Edu	LT high	139	6.7	132	6.6	7	10.1
	High	1278	61.9	1228	61.6	50	72.5
	MT high	646	31.3	634	31.8	12	17.4
Housing	Own	1319	63.9	1291	64.7	28	40.6
	Deposit	579	28.1	550	27.6	29	42.0
	Else	165	8.0	153	7.7	12	17.4
Logged Income		5.6	0.3	5.6	0.3	5.3	0.7
Urbanicity	Urban	1803	87.4	1740	87.3	63	91.3
	Rural	260	12.6	254	12.7	6	8.7

Notes: 1) Number at the end of the variable name denotes survey waves with 0 being 4th grade and 1 being 8th grade. 2) M/F represents mean for continuous variables and frequency for categorical variables. 3) V/P carries variance and percentage for continuous and categorical variables respectively.

Table 2. Average Treatment Effect and Interaction Effect

	Ordinary Least Squares				Matching			
	Average Effect		Interaction		Average Effect		Interaction	
Outcome	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.
Divorce Effect								
Korean	-0.277 **	(0.096)	0.344	(0.196)	-0.449 ***	(0.123)	0.215	N.A.
English	-0.281 *	(0.122)	-0.033	(0.251)	-0.232	(0.178)	-0.194	N.A.
Math	-0.427 ***	(0.126)	0.003	(0.259)	-0.391 *	(0.188)	0.159	N.A.
Health	0.271 *	(0.112)	0.440	(0.228)	0.029	(0.166)	0.195	N.A.
Extern.	1.412 *	(0.549)	1.633	(1.123)	0.536	(0.649)	1.361	N.A.
Intern.	2.547 ***	(0.584)	1.488	(1.193)	2.493 ***	(0.731)	-0.137	N.A.
Marital Conflict Effect								
Korean	-0.068	(0.039)	-0.009	(0.083)	-0.129 *	(0.051)	-0.033	N.A.
English	-0.118 *	(0.050)	-0.074	(0.106)	-0.193 **	(0.068)	-0.039	N.A.
Math	-0.076	(0.051)	0.017	(0.109)	-0.187 **	(0.070)	0.038	N.A.
Health	0.392 ***	(0.045)	-0.148	(0.095)	0.417 ***	(0.066)	-0.252	N.A.
Extern.	1.414 ***	(0.221)	-0.068	(0.470)	1.504 ***	(0.292)	0.357	N.A.
Intern.	1.531 ***	(0.236)	0.098	(0.501)	1.761 ***	(0.328)	-0.735	N.A.

Notes: see texts for detailed explanations about what each cell represents.
*p<0.05; **p<0.01; ***p<0.001

Table 3. Six Categories

		Ordinary least squares		Matching	
Variable	Treatment[1)]	Est.	S.E.	Est.	S.E.
Korean	NC→IC	-0.057	(0.049)	-0.030	(0.064)
	IC→NC	-0.087	(0.054)	-0.109	(0.074)
	IC→IC	-0.149 *	(0.059)	-0.100	(0.075)
	NC→D	-0.449 ***	(0.127)	-0.381 *	(0.163)
	IC→D	-0.190	(0.153)	0.074	(0.195)
English	NC→IC	-0.095	(0.063)	-0.111	(0.091)
	IC→NC	0.055	(0.067)	0.088	(0.091)
	IC→IC	-0.120	(0.075)	-0.090	(0.103)
	NC→D	-0.315	(0.161)	-0.310	(0.227)
	IC→D	-0.340	(0.195)	-0.222	(0.212)
Math	NC→IC	-0.077	(0.064)	-0.189 *	(0.089)
	IC→NC	-0.106	(0.070)	-0.182	(0.097)
	IC→IC	-0.180 *	(0.077)	-0.140	(0.106)
	NC→D	-0.473 **	(0.166)	-0.595 **	(0.229)
	IC→D	-0.590 **	(0.202)	-0.519 *	(0.259)
Health	NC→IC	0.448 ***	(0.054)	0.468 ***	(0.081)
	IC→NC	-0.011	(0.058)	0.039	(0.086)
	IC→IC	0.239 ***	(0.064)	0.294 **	(0.095)
	NC→D	0.200	(0.132)	0.119	(0.181)
	IC→D	0.622 ***	(0.162)	0.741 **	(0.285)
Extern.	NC→IC	1.433 ***	(0.278)	0.895 *	(0.396)
	IC→NC	0.017	(0.303)	-0.302	(0.413)
	IC→IC	1.311 ***	(0.330)	1.493 **	(0.457)
	NC→D	1.079	(0.704)	1.286 *	(0.630)
	IC→D	2.988 ***	(0.864)	2.630 *	(1.216)
Intern.	NC→IC	1.371 ***	(0.291)	1.360 ***	(0.403)
	IC→NC	-0.258	(0.314)	-0.446	(0.453)
	IC→IC	1.105 **	(0.351)	1.231 *	(0.489)
	NC→D	2.206 **	(0.734)	2.024 *	(0.965)
	IC→D	3.706 ***	(0.901)	4.963 ***	(1.222)

Notes: 1) NC means no marital conflict, IC denotes in marital conflict, and D represents divorce.
*p<0.05; **p<0.01; ***p<0.001