

A Bad Peace or a Good War: A Structural Estimation Model of Spousal Conflict and Divorce

Oleksandr Zhylyevskyy

University of Virginia

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Research Focus

Background:

- spousal conflict and divorce are empirically relevant
- limited research on spousal conflict
- unexplored richness of data: National Survey of Families and Households (NSFH)

Research goals:

- explain conflict in intact marriage, along with cooperation and divorce
- quantify disutility impact of conflict
- evaluate effect of shorter separation requirements and stronger child support enforcement

NSFH Questions about Spousal Conflict

Dispute areas and frequencies:

“The following is a list of subjects on which couples often have disagreements. How often, if at all, in the past year have you had open disagreements about each of the following:

household tasks, money, spending time together, sex, in-laws, children?”

responses: “never”, “once a month or less”, ..., “almost every day”

Dispute resolution process:

“There are various ways that married couples deal with serious disagreements. When you have a serious disagreement with your husband/wife, how often do you:

discuss your disagreements calmly, argue heatedly or shout at each other?”

responses: “never”, “seldom”, ..., “always”

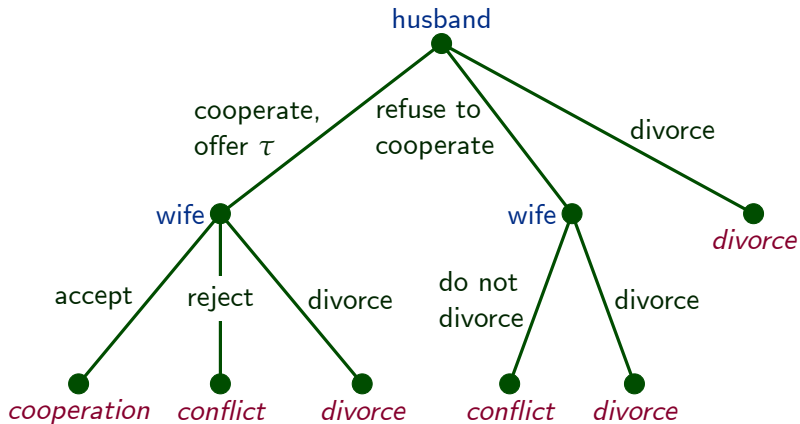
Marital State

Marital state: status of a couple as of NSFH wave 2 (1992-94):

- Conflict: intact couple where husband and wife:
 - disagree about at least one aspect of marriage
 - have disputes several times a week or more often
 - seldom calmly discuss disputes or often shout at each other
- Cooperation: intact couple not in state of conflict
- Divorce: legally divorced or separated

Marital State	Frequency	Share (%)
Cooperation	2,948	76.02
Conflict	416	10.73
Divorce	514	13.25
Total	3,878	100.00

Game Structure



Information Asymmetry

Two sources of unobserved heterogeneity:

- Bargaining “strength”: “soft” (S) vs. “hard” (H) bargainer
- Divorce prospect: “pessimist” (P) vs. “optimist” (O)

Spousal type combines trait levels:

- set of four types: $\{HO, HP, SO, SP\}$
- e.g., type HO stands for “hard bargainer – optimist”

Knowledge about types:

- true type is private information of spouse
- husband has beliefs about wife’s type
- econometrician observes data related to types and beliefs

Estimated Divorce Payoffs

Variable	Husband		Wife	
	Coeff.	Std. Err.	Coeff.	Std. Err.
male-specific availability ratio	0.264	(0.244)	—	
female-specific availability ratio	—		1.369**	(0.342)
$\frac{1}{2}$ year \leq separation \leq 1 year	-0.269*	(0.158)	0.032	(0.099)
separation > 1 year	-0.309**	(0.134)	-0.162	(0.114)
CSE collection rate	0.165	(0.253)	1.938**	(0.819)
coll. rate \times high sch., husband	-1.633**	(0.653)	—	
coll. rate \times college, husband	-0.819	(0.565)	—	
coll. rate \times high sch., wife	—		-1.802**	(0.713)
coll. rate \times college, wife	—		-0.894	(0.626)
optimist's constant	3.710**	(0.295)	0.655**	(0.103)

* and ** denote significance at 10 and 5 percent levels

Estimated Cooperation Payoff

Variable	Coeff.	Std. Err.
constant	4.702**	(0.303)
children, < 6 y.o.	0.274**	(0.102)
children, ≥ 6 y.o.	-0.055	(0.072)
children, wife's	-0.261**	(0.107)
marital duration	0.093**	(0.014)
home ownership	-0.134	(0.127)
age, husband's	0.033**	(0.010)
age, abs. difference	-0.041**	(0.018)
black husband	0.543**	(0.254)
catholic husband	0.182	(0.125)
religion, difference	0.067	(0.096)
high sch., husband	0.010	(0.048)
college, husband	0.195	(0.145)
education, difference	-0.378**	(0.113)

* and ** denote significance at 10 and 5 percent levels

Estimated Conflict Payoffs

Variable	Husband		Wife	
	Coeff.	Std. Err.	Coeff.	Std. Err.
constant	-2.624**	(0.678)	-1.620**	(0.319)
children, < 6 y.o.	0.623**	(0.108)	0.554**	(0.095)
children, ≥ 6 y.o.	0.453**	(0.070)	0.498**	(0.057)
children, wife's	0.310**	(0.108)	0.406**	(0.148)
marital duration	0.015	(0.011)	-0.017**	(0.006)
home ownership	1.544**	(0.233)	-0.261*	(0.150)
age, husband's	0.113**	(0.011)	0.000	(0.002)
age, abs. difference	-0.224**	(0.027)	-0.002	(0.007)
black husband	-1.274**	(0.367)	0.593**	(0.228)
catholic husband	0.495**	(0.150)	0.367**	(0.131)
religion, difference	-0.929**	(0.199)	-0.019	(0.053)
high sch., husband	0.238*	(0.141)	-0.500**	(0.147)
college, husband	0.009	(0.042)	-0.960**	(0.175)
education, difference	-0.066	(0.095)	0.259**	(0.116)
hard barg. constant	2.391**	(0.529)	4.101**	(0.125)

* and ** denote significance at 10 and 5 percent levels

Counterfactuals

Experiment A: elimination of separation periods

Experiment B: perfect child support enforcement

Distribution of Couples (%)

Marital State	Baseline	Experiment A	Experiment B
Cooperation	78.65	77.97	81.56
Conflict	10.27	10.02	8.38
Divorce	11.08	12.01	10.06
Total	100.00	100.00	100.00

Conclusion

Key contributions:

- spousal conflict is equilibrium outcome of bargaining
- model allows for Pareto inferior outcomes and information asymmetry
- conflict indicator incorporates data on dispute resolution
- policy variables in divorce payoffs

Directions for future research:

- multi-issue bargaining
- dynamic bargaining

Appendix Outline

- National Survey of Families and Households (NSFH)
- NSFH Evidence on Spousal Conflict
- Parameterized Payoffs
- Parameterized Type Probabilities and Beliefs
- Demographic Variables
- Location-Specific Variables
- Beliefs and Opinions
- Estimated Type Probabilities and Beliefs
- Estimated Disutility from Conflict
- Nonstructural Trinomial Model

National Survey of Families and Households (NSFH)

Main features of NSFH:

- nationally representative panel of households
- 2 data collection waves: 1987-88 and 1992-94
- spouses answered separate questionnaires

NSFH includes questions on:

- marital disputes: frequency, areas, resolution process
- respondent's own happiness after hypothetical divorce
- beliefs about partner's happiness after hypothetical divorce

Sample of analysis: 3,878 married couples

NSFH Evidence on Spousal Conflict

Dispute frequencies:

- once a week +: 39 percent
- several times a week +: 23 percent
- almost everyday: 11 percent

Dispute resolution process:

- seldom/never calmly discuss disputes: 27 percent
- often/always heatedly argue or shout: 10 percent

Parameterized Payoffs

	Husband	Wife
<i>Cooperation:</i>	$u_h = x' \alpha_h - \tau + \theta_1$	$u_w = x' \alpha_w + \tau + \theta_3$
<i>Conflict:</i>	$v_h^S = x' \beta_h + \theta_2$ $v_h^H = v_h^S + \beta_h^H$	$v_w^S = x' \beta_w + \theta_4$ $v_w^H = v_w^S + \beta_w^H$

$$\theta_{4 \times 1} \sim i.i.d. N(0, \Sigma)$$

<i>Divorce:</i>	$y_h^P = z_h' \gamma_h$ $y_h^O = y_h^P + \gamma_h^O$	$y_w^P = z_w' \gamma_w$ $y_w^O = y_w^P + \gamma_w^O$
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- x : demographic variables; z_h, z_w : location-specific variables
- type-specific constants are positive: $\beta_h^H, \beta_w^H, \gamma_h^O, \gamma_w^O > 0$
- cannot separately identify α_h and α_w , estimate $\alpha_h + \alpha_w$

Parameterized Type Probabilities and Beliefs

Type probabilities (Degan & Merlo, 2006):

$$\pi_h^k = \frac{\exp(a'_h \lambda_h^k)}{\sum_j \exp(a'_h \lambda_h^j)}, \quad \pi_w^l = \frac{\exp(a'_w \lambda_w^l)}{\sum_j \exp(a'_w \lambda_w^j)}$$

- k : husband's type, l : wife's type
- a_h, a_w : observed spousal opinions about own happiness

Husband's beliefs:

$$\delta^l = \frac{\exp(b' \rho^l + \eta^l)}{\sum_j \exp(b' \rho^j + \eta^j)}, \quad \eta \sim i.i.d. N(0, \Omega)_{3 \times 1}$$

- b : observed husband's beliefs about wife's happiness

Demographic Variables

Variable	Mean	Std. Dev.	Min	Max
children < 6 year old	0.45	(0.73)	0	5
children \geq 6 year old	0.57	(0.94)	0	5
children, wife's	0.14	(0.47)	0	5
marital duration	14.51	(13.23)	0	63.58
home ownership	0.75	(0.43)	0	1
age, husband's	41.02	(13.75)	17	90
age, abs. difference	3.62	(3.84)	0	38
black husband	0.09	(0.29)	0	1
catholic husband	0.23	(0.42)	0	1
religion, difference	0.33	(0.47)	0	1
high school, husband	0.51	(0.50)	0	1
college, husband	0.33	(0.47)	0	1
education, difference	0.38	(0.48)	0	1

Location-Specific Variables

- Availability ratio (Goldman et al., 1984):
 - specific to county, sex, race, age, and education
 - source: 1990 Census (5-percent PUMS)
- State-specific separation period requirements:
 - sources: Friedberg (1998), Freed & Walker (1991)
- State-specific CSE collection rate (Nixon, 1997):
 - sources: Office of CSE reports to Congress

Variable	Mean	Std. Dev.	Min	Max
male-specific availability ratio	1.25	(0.24)	0.56	2.43
female-specific availability ratio	0.84	(0.16)	0.22	1.45
$\frac{1}{2}$ year \leq separation \leq 1 year	0.18	(0.39)	0	1
separation $>$ 1 year	0.33	(0.47)	0	1
CSE collection rate	0.19	(0.06)	0.06	0.35

Beliefs and Opinions

- Husband reports what he believes about *his wife's* overall happiness after divorce
- Spouses report what they think about *their own* overall happiness after divorce

Variable	Mean	Std. Dev.	Min	Max
same happiness, belief	0.19	(0.39)	0	1
more happy, belief	0.08	(0.27)	0	1
same happiness, husband	0.17	(0.38)	0	1
more happy, husband	0.06	(0.23)	0	1
worthy person, husband	0.38	(0.49)	0	1
same happiness, wife	0.15	(0.36)	0	1
more happy, wife	0.07	(0.26)	0	1
worthy person, wife	0.42	(0.49)	0	1

Estimated Type Probabilities and Beliefs

Spousal Type	True Types		Beliefs
	Husband	Wife	Husband
<i>HO</i> (hard bargainer – optimist)	0.106	0.040	0.170
<i>HP</i> (hard bargainer – pessimist)	0.141	0.249	0.027
<i>SO</i> (soft bargainer – optimist)	0.019	0.048	0.112
<i>SP</i> (soft bargainer – pessimist)	0.734	0.663	0.691

Estimated Disutility from Conflict

- Lower bound:

$$LB = E \left[u_h + u_w - v_h^H - v_w^H \right]$$

- Upper bound:

$$UB = E \left[u_h + u_w - v_h^S - v_w^H \right]$$

- Estimated sample averages:

$$\widehat{LB} = 1.45$$

$$\widehat{UB} = 3.84$$

Note: unit of measurement is *util* (a standard deviation of normally distributed stochastic component of payoff)

Nonstructural Trinomial Model

Variable	<i>Conflict</i>		<i>Divorce</i>	
	Coeff.	Std. Err.	Coeff.	Std. Err.
constant	-2.312**	(0.558)	-2.668**	(0.574)
children, < 6 y.o.	0.038	(0.061)	-0.061	(0.061)
children, ≥ 6 y.o.	0.115**	(0.048)	0.085	(0.052)
children, wife's	0.133	(0.083)	0.152**	(0.077)
marital duration	-0.006	(0.007)	-0.035**	(0.007)
home ownership	-0.220**	(0.091)	-0.272**	(0.086)
age, husband's	-0.025**	(0.007)	-0.027**	(0.007)
age, abs. difference	0.029**	(0.012)	0.047**	(0.012)
black husband	0.404**	(0.135)	0.425**	(0.140)
catholic husband	0.169*	(0.090)	-0.121	(0.093)
religion, difference	0.127	(0.082)	0.159**	(0.080)
high sch., husband	-0.298*	(0.167)	-0.091	(0.187)
college, husband	-0.353*	(0.186)	-0.409**	(0.201)
education, difference	0.130	(0.081)	0.170**	(0.081)
male-specific availability ratio	0.862**	(0.281)	0.538*	(0.302)
female-specific availability ratio	-0.315	(0.383)	0.710*	(0.372)
$\frac{1}{2}$ year ≤ separation ≤ 1 year	-0.181*	(0.110)	-0.101	(0.105)
separation > 1 year	0.021	(0.086)	-0.211**	(0.087)
CSE collection rate	2.215*	(1.235)	2.505**	(1.264)
coll. rate × high sch., husband	-0.442	(1.153)	-1.215	(1.211)
coll. rate × college, husband	-0.453	(1.297)	-0.533	(1.342)
coll. rate × high sch., wife	-0.973	(0.853)	-1.377*	(0.827)
coll. rate × college, wife	-1.612*	(0.970)	-1.652*	(0.935)

* and ** denote significance at 10 and 5 percent levels