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Conceptual Framework for the Evaluation of the Impact of Societal Instabilities on Demographic Behavior: A Model Linking Social, Political, Psychological and Demographic Variables

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Abstract

The paper proposes a model linking various types of societal instabilities with fertility outcomes. The model incorporates the premises of the extended uncertainty reduction theory, originally developed by Friedman, Hechter and Kanazawa (1994), implying increasing fertility as the means to reduce uncertainty. In the previously published paper on the topic (Frantsuz and Ponarin, 2020) the major premises of the uncertainty reduction theory were explicated, the basic model of using it by linking instability with fertility trends was proposed, and the empirical test of the impact of two types of sociopolitical instabilities on fertility dynamics in the USSR/post-Soviet Russia was performed. In this paper I expand the analysis of the uncertainty reduction theory, supplement the previously outlined general model with the extended one, that takes into account the impact on fertility of societal instabilities of various types, scale and magnitude. I formulate the new assumptions that stem from this elaborated model, the ones leading to a broad array of testable hypotheses. The proposed conceptual framework allows for testing the hypotheses of various instabilities' impact on fertility outcomes in various regions and countries, as well as at different historical periods, even when micro-level data on the individual perceptions of these uncertainties is not available. The importance of such an approach is paramount in the light of problems related to the limited possibilities of performing adequate retrospective qualitative analysis of the individual perceptions of societal instabilities.

Keywords

Fertility, societal instability, uncertainty reduction theory

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The paper proposes a model linking various types of societal instabilities with fertility outcomes. The model incorporates the premises of the extended uncertainty reduction theory, originally developed by Friedman, Hechter and Kanazawa (1994), implying increasing fertility as the means to reduce uncertainty. In the previously published paper on the topic (Frantsuz and Ponarin, 2020) the major premises of the uncertainty reduction theory were explicated, the basic model of using it by linking instability with fertility trends was proposed, and the empirical test of the impact of two types of sociopolitical instabilities on fertility dynamics in the USSR/post-Soviet Russia was performed. In this paper I expand the analysis of the uncertainty reduction theory, supplement the previously outlined general model with the extended one, that takes into account the impact on fertility of societal instabilities of various types, scale and magnitude. I formulate the new assumptions that stem from this elaborated model, the ones leading to a broad array of testable hypotheses. The proposed conceptual framework allows for testing the hypotheses of various instabilities' impact on fertility outcomes in various regions and countries, as well as at different historical periods, even when micro-level data on the individual perceptions of these uncertainties is not available. The importance of such an approach is paramount in the light of problems related to the limited possibilities of performing adequate retrospective qualitative analysis of the individual perceptions of societal instabilities.

Demographic behavior at the period of societal instabilities belongs to the class of short-term fluctuations of any given demographic process. Most commonly, such periods last from 1 to 10 years. So, in order to develop the approaches to study demographic behavior impacted by societal instabilities (that mostly last for the similar periods), one has to address the strategy for dealing with this broad class, the corresponding behavior during the short term. That applies, among other demographic processes, to fertility, which is the major focus of the paper.

Most of the so-called established demographic theories, such as demographic transition, wealth-flow, cultural and institutional, focus on changes in fertility over relatively long-term periods. While there are some attempts to understand short-term fluctuations of fertility, notably the Chicago-Columbia School of microeconomic theory (Becker 1976, 1991), these typically relate to changes in the cost-benefit equation in fertility decision-making only in the state of societal equilibrium. Likewise, the Pennsylvania School of microeconomic theory (Easterlin, Pollack and Wachter, 1997) traces formation of attitudes toward fertility to childhood and the early adolescent years, and thus Is not applicable to the study of sudden shifts in fertility decision-making at times of rapid social changes.

One of the possible reasons behind the fact there is so few works on short-term fluctuations in fertility is that existing theories have not effectively developed macro-micro links. Institutional theory, for example, may provide a macro-micro link by specifying how institutional changes shape the segmented

decision-making environment that is taken into account when an individual makes a fertility decision (McNicoll 1994). However, this theory does not always provide a clearly defined type of correlation between certain segmented decision-making environments and corresponding change of fertility, therefore failing to predict the level and direction of this demographic process change under the impact of any particular societal development. On the other hand, the Chicago-Columbia School of microeconomics can take certain macro-societal changes (such as, for instance, technological developments) into account while explaining individual fertility decision-making, but pays little attention to social, political and economic dimensions. As a consequence, the unique and often a paradoxical nature of socio-political and other societal changes that may produce short-time fluctuations remain understudied, and the process by which macro-micro level conditions influence individual fertility decision-making is largely unarticulated.

The above-mentioned shortcomings of the established demographic theories in explaining short-term fluctuations of fertility can also be found in theories exploring such fluctuations during periods of societal instability. This has led to a search for a theory that would address all of the missing points – the one that would encompass macro-micro links, be applicable to short-term fluctuations, incorporate value changes in periods of societal instability and address the specific impact of societal instabilities of various kinds on fertility.

Uncertainty Reduction Theory

The theory that matches these criteria is the one of uncertainty reduction (Friedman, Hechter and Kanazawa, 1994). Here is the brief description of the basic premises of the theory that was elaborated upon in greater detail in the cited paper (Frantsuz and Ponarin, 2020), followed by the previously unarticulated discussion on the objections, brought by the critics of this theory, and the responses of the theory's proponents. This discussion is aimed for the further justification of employing the premises of the extended uncertainty reduction theory.

The initial general assumption of this theory is related to the concept of *universal immanent value* that rational actors seek to reduce. Decision-making under uncertainty differs from that under risk in the knowledge of probabilities of the alternative outcomes. While failure to achieve desired ends could be the case for both states -- situations of risk and situations characterized with uncertainty – in risky situations the decision-maker can judge the odds of failure, while in situations marked with uncertainty he cannot. Also, risky situations imply consequences of greater severity in cases of failure. The inability to assess the odds under situations of uncertainty dictates an actor's preference for risky situations, where judgment about probabilities of different sets of choice outcomes can be made. Thus, uncertainty reduction theory assumption could be formulated as follows: *Actors will always desire to reduce uncertainty by converting it into a certain, even if risky, situation*.

Friedman et. al (1994: 377) claim that values exist in two fundamental varieties: *instrumental* values provide means to a wide variety of ends whereas *immanent* values are ends that are desired purely for their own sake. Because actors value uncertainty reduction as an end in itself rather than just as a means to various other ends, it is an *immanent* rather than an *instrumental* value that actors seek to reduce. Friedman et. al approach corresponds with the Weberian type of an ideal social action, namely, the value-rational. The scholars stress that their theoretical model applies only to developed societies, where children represent a net economic cost to their parents. This is conducive with Weberian thinking, who claimed that the share of rational types of actions will increase in the course of societies' modernization. This brings Friedman et. al approach an additional credence.

There are two ways that people can reduce uncertainty. The first one is to gather information that transforms uncertainty to risk for a local choice problem. The second one is to pursue global strategies designed to reduce uncertainty regarding the future courses of action. The authors of the theory point out several such global strategies. The principal ones in developed countries are stable careers, marriage and children. Most importantly, Friedman et al argue that having children reduces uncertainty because parenthood is irreversible and irrevocable. This is because, first, having children involves actors in recurrent social relations, and, second, creates an irrevocable commitment to a stream of expenditures over a long period of time.

There is a question that stems from the uncertainty-reducing character of the decision to have a child. Don't children creating new uncertainties while reducing other ones? Friedman et al. (1994: 383) list these uncertainties that could increase with parenthood: "Will the child be born healthy or with birth defects? Will it grow up to be a good child or delinquent? Will it succeed or fail in school? Will it experience major illnesses? Why would an actor interested in reducing uncertainty willingly introduce new sources of uncertainty?"

The answer to that question is a well-established cognitive bias. According to the founding of decision theorists and cognitive psychologists, people's perception of risk is biased in one predictable direction. People tend to downplay risks that they assume (justifiably or not) they are in control of; risks out of their control loom larger in their perception. For example: driving a car is objectively riskier than flying an airplane, but people subjectively tend to feel otherwise because of their feeling that while driving a car they are more in control. Uncertainty reduction theory suggests, "because parents can do so much to control their children's fate, risks and uncertainties emanating from parenthood are likely to be diminished in comparison with types of uncertainty that individuals seek to reduce through parenthood" (Friedman et al. 1994: 383).

Uncertainty reduction theory provides a set of hypotheses linking types of uncertainty with strategies for its reduction. Specifically, it predicts that two categories of individuals are more likely than

others to seek parenthood: (1) those that face greater uncertainty and (2) those that have less access to other means of uncertainty reduction. Friedman et al. suggest that an example of the first category is minorities with poorer prospects of stable successful careers who will seek parenthood more to reduce uncertainty, while an example of the second category is persons with poorer prospects of stable marriage.

Uncertainty reduction theory contains a subsidiary assumption of the enhancement of marital solidarity. This assumption asserts that husbands and wives will seek to increase solidarity in their marriages. Parenthood thus could be hypothesized from the perspective of reducing uncertainty by increasing the stability of marriage (possibility correlated with parenthood).

Propositions from uncertainty reduction theory and its subsidiary assumptions can be derived for women acting alone as well as for couples making joint decisions. The important point of the theory is awareness that other factors could affect fertility and thus should be controlled. For that reason, uncertainty reduction theory is said to be problematic in application to developing countries, where it is hard to disentangle the uncertainty reduction motivation from the economic motivation. Children in developing countries may increase a household's production capacity, and for that reason fertility behavior leads both to maximization of wealth and to uncertainty reduction. However, uncertainty reduction theory could be well applied to the fertility decision-making in developed countries.

The uncertainty reduction theory and its major premises have caused significant controversy. One of the dominant examples and arguably, the most challenging such controversy has been provided by a text by Lehrer, Grossband, Shechtman and Leasure (1996:133-9), where these scholars criticized the uncertainty reduction theory on three accounts: They first argued that the theory had limited potential, furthermore stating that it would be internally inconsistent, while finally criticizing that the theory failed to stand empirical testing.

Regarding Lehrer et al., a major objection to the uncertainty reduction theory is that the central assumption of the theory, namely that people have children to reduce uncertainty is counterintuitive. According to the authors, the many other incentives for parenthood such as an outlet for creativity and accomplishment, or an opportunity to guide, teach, and exert control are no less significant than reducing uncertainty. These motives are referred to as the “expansion of self” and have also been acknowledged by Friedman et al.; however, without assigning these motives a universal and central role in the decision to become a parent. Consequently, in this very line of critique about the uncertainty reduction theory, Lehrer et al. were even more radical, suggesting that assuming any particular reason for parenthood has poor research merits, therefore not providing a good point of departure to explore variations in fertility behavior (Lehrer et al., 1996, 133). In this first point of critique, Lehrer et al. (1996: 133) also included a disagreement with the premise of the uncertainty reduction “that the uncertainties emanating from

parenthood are more controllable than those associated with labor force participation and marriage", thus rendering them more preferable.

Finally, the first critical point of Lehrer et al. also included a timing issue. The authors pointed out that children stay with parents long after such uncertainty has settled. Because of that, Lehrer et al. doubted the reduction of such short-term uncertainties to be a factor in the lifetime decision of becoming a parent.

The second point of the critique of the uncertainty reduction theory by Lehrer et al. addresses internal inconsistency. To support this point, the scholars introduced two hypotheses of Friedman et al. that, as the scholars suggest, contradict each other. The first hypothesis is that "financial and emotional support from families of origin has a negative effect on the propensity to parenthood" (Friedman et al., 1994, 385). The second one is that "social and geographical mobility has a negative effect on the propensity to parenthood (Friedman et. al, 1994:386). Lehrer et al. suggested that the contradiction between these hypotheses lies in the fact that in the latter case "…they assert that couples who cannot rely on friends and family will work harder to make their marriages solid, thus decreasing the need for parenthood as an uncertainty reduction mechanism" while first hypothesis "…implies that those who move away from their families should have relatively high fertility" (Lehrer et. al, 1996:133).

Finally, in support of the third point of their critique of the uncertainty reduction theory, Lehrer et al. discuss numerous examples for where the driving hypotheses of the theory fail to generate empirical support. Furthermore, Lehrer et al. argue that most of these hypotheses could be derived from other, more plausible, theories of fertility behavior (here, the scholars mostly referred to the economic theory of fertility).

In particular, Lehrer et al. discussed the existing empirical support of the hypothesis of Friedman et al., linking marriage prospects to the propensity to "parenthood". According to this hypothesis, women that have a lower prospect of getting married (attributable mainly to the lower level of availability of marriageable males) have a higher tendency for parenthood as a means to reduce marriage related uncertainty.

Lehrer et al. argue that this hypothesis not only failed to achieve empirical support (they cite several studies evidencing the opposite), but it also suffered from the basic flaw that Friedman et al. did not distinguish between marital and nonmarital fertility. Lehrer et al. (1996:135) suggested that it made "…little sense to talk about a link between marriage prospects and parenthood in general without making a distinction between marital and nonmarital fertility". In their reply, Friedman et al. disagreed with this (ibid., 139), in turn suggesting that "prospects for marriage" are meaningless for already married couples, and are only valid for single women; therefore, this hypothesis only applied to the latter category. They also cited several empirical studies, some of which partially supporting, while others partially contradicting the claim of the hypothesis. A good example is the study of South and Lloyd (1992). Friedman et al. briefly

discussed this study in their "reply", and further elaborated on it in greater detail in their major publication on the uncertainty reduction theory (Friedman et al., 1994:391).

Indeed, South and Lloyd (1992) provided evidence for the expected effect on the availability of marriageable males in the metropolitan statistical area (MSA: a US Census geographical region with a relatively high population density at its core and close economic ties throughout) on both nonmarital fertility ratios as well as rates for white women; however, for African-American women, marriage opportunities were significantly and negatively related only to the nonmarital fertility ratio. During another empirical study on the topic, Rindfuss and Parnell (1989) reported that poorly educated never-married African-American women had the same likelihood of conceiving during the subsequent twelve months, as currently married high school graduates.

Furthermore, Rindfuss and Bumpass (1976) reported that age at marital disruption is negatively related to the probability of intermarital fertility, which is a type of nonmarital fertility with births occurring during periods of marital disruption. According to Friedman et al., this can be used as further evidence against the hypothesis, as these sets of findings require the reexamination of this hypothesis as the prospects for marriage could easily have been overestimated. This highlights the importance for testing uncertainty reduction theory driven hypotheses across various groups, such as age, education, and race.

In their original study, Friedman et al. also reported the findings of many other empirical studies that tested major hypotheses, derived from the uncertainty reduction theory. Some of these hypotheses generated only supporting evidence, while others supplied both supporting and contrary evidence. In many cases, these discrepancies could be attributed to differences in the estimations of actual prospects for reducing uncertainty; in some cases, discrepancies could be attributed to various assessments of the fertility rates themselves of the population groups being compared. It is often the case that hypotheses are supplemented, specified, or disproved when tested for special subgroups of the population and/or under various scope conditions. Friedman et al. (1994:391) provided a good example for this, presenting various findings in the course of testing the hypothesis of the decreasing prospect of a good career due to parenthood. The cited research used subgroups of women of different races, ages, educational status, and occupational status for specification. Friedman et al. started to describe these findings according to Brewster, Billy, and Grady (1993), who have demonstrated that white adolescent women are significantly more likely to use means of contraception for their first intercourse, if they live in neighborhoods with more employment opportunities specifically for women. Ritchey and Strokes (1974) reported a contradicting relationship when comparing white adolescent women with high school education to those without high school education. Finally, Jacobson and Heaton (1991) reported that women with graduate education are more than twice as likely to be childless compared to women with less than college graduation.

Friedman et al. (1994:391) also discussed several studies, describing tests for hypotheses of various occupational subgroups. Yogev and Vierra (1983) found that faculty women have higher rates of childlessness than the general population of women. Bloom and Pebley (1982) reported that above-average proportions of childless women hold employment jobs; however, Jacobson and Heaton (1991) found no significant effect between occupational classification and likelihood of childlessness. According to other studies (Callan 1982; Ramu 1984), childless wives have more education and higher-status occupations than mothers. However, it is quite possible to explain these patterns using different perspectives; most notably, from the perspectives of the theory on opportunity costs for women.

This discussion inevitably leads to a conclusion about the importance of further uncertainty theory driven hypotheses testing, with an emphasis on studying specific subgroups and outcomes in various scope conditions. The model, proposed in this paper, allows for separating different types of uncertainties by linking them with different scopes and instability types (the next subsection elaborates on this).

Summing up, uncertainty reduction theory satisfies major criteria for researching the impact of societal instabilities on short-term fluctuations of fertility: it encompasses macro-micro links, applicable to short-term changes in demographic processes, and addresses the issue of values in fertility decision-making. However, there are several issues in explaining and researching instability that are not addressed by the original version of the theory.

Thus, in the next sections I propose an extension of uncertainty reduction theory for the purposes of an application to the empirical research on the impact of societal instability on fertility. In doing so, I develop a model that links the macro-societal instabilities with micro-level perceptions of them as uncertainties and with fertility decision-making.

Application of Uncertainty Reduction Theory's Premises to the Empirical Research: General Framework

The basic logistics of applying the uncertainty reduction theory to empirical research was formulated in the previously published paper on the topic (Frantsuz and Ponarin, 2020). Here I briefly repeat the major logistical steps, and after that elaborate more on the issues that were not explicated in greater detail in the earlier paper, especially the one of the applicability of uncertainty reduction theory to the various parities.

The first step in applying uncertainty reduction theory to the empirical research linking societal instability with fertility is to define all macro-micro links. Uncertainty reduction theory operates mostly at a micro-level, linking individual's or family unit's perceptions of the situation they are facing in regard to uncertainty with the decision-making (including the one on fertility) that reduces uncertainty. Uncertainty reduction theory doesn't elaborate on connecting societal instability with its perception as uncertainty by

individuals, leaving macro-micro connections largely implicit. The first general assumption links macro-level societal instabilities with micro-level perceptions of it as an uncertainty:

(1) *Instability at a macro-societal level produces uncertainty at the micro-level of an individual or a family unit.*

This assumption is based on the connection of societal instabilities with increased uncertainty in such institutions as career and marriage, as well as uncertainty related to crime, accidents, and fear of war. Different types of societal instability could have various impacts on changing individual strategies in career, migration, investments, etc. due to perceptions of these instabilities as of uncertainties. The second general assumption links a micro-level perception of uncertainty with decision-making on fertility, with its general premise being borrowed from the uncertainty reduction theory:

(2) *The greater the perceived uncertainty at a micro-level, the greater the number of births per individual or a family.*

The second assumption has a large body of empirical support, according to Frideman et. al. Whether in a direct or indirect form (that is, linking fertility decision-making and behavior with individual uncertainty perception or status implying existence of such uncertainty), several works support this premise of an uncertainty reduction theory. It is, however, important to acknowledge that even if correlations between the above-mentioned variables is found, it doesn't necessarily imply causation.

The hypothesis that arguably gathers the biggest empirical support is the one on the negative effect of prospects for a stable and successful career on the propensity to parenthood. The derivation from this hypothesis is that stable employment and career are effective means to reduce uncertainty and thus subgroups with the poorest prospects for achieving them (like poor African-American teenage women) are more likely to seek parenthood.

The work of Geronimus (1987) strongly supports this hypothesis. Based on a large set of data as well as on previous research, the author states that among urban poor Black Americans teen pregnancy became a norm. The figures are as follows: according to the National Center for Health Statistics, 1981, while only 23% of white American first births were to teenagers, almost 50% of Black American first births were to teenage mothers. The figure was even higher for poor Black urban American mothers, one of the most disadvantaged groups in society in regards to having stable and successful careers.

What looks like even more convincing support of the uncertainty reduction theory's premise is that there is a differentiation in teenage childbearing *within* that group. Geronimus states that there is a different

norm in the urban black community for teenage and out-of-wedlock childbearing for those women exhibiting exceptional academic achievement. The author argues, "Those teenagers believed to possess the skills necessary to overcome chronic barriers to achievement and upward social mobility are selected out of the peer group and are discouraged from bearing children during their teens" (Geronimus 1987:256). So, even within a group of poor urban Black American young women, those having prospects of a stable career as a means of uncertainty reduction did not need to use another means of its reduction - that is, early and/or out-of-wedlock parenthood.

As a support for the hypothesis of the impact of stable and successful careers on fertility one can consider the work of Rindfuss, Morgan and Swicegood (1984). Their finding is that women with at least a college degree are substantially less likely to become mothers than other women. The authors explain it by the fact that "these are precisely the women who enter careers that effectively compete with the prospect of childbearing for woman's time" (Rindfuss et al. 1984: 369).

The second hypothesis that is derived from the uncertainty reduction theory and that has empirical support is the one of positive effects of the possibility of divorce on the propensity to parenthood. Divorce is viewed here as an uncertainty, so increased fertility is seen as a way to prevent it. The support for this hypothesis surfaced in some interviews, conducted in the course of a scientific study of people who are childless by choice (Veevers 1980). The author notes that "marital insecurity often leads to a more immediate decision about having children" (Veevers 1980: 37). Though specialists doubt that having a child is an effective solution to marital problems, respondents often believe otherwise.

Even more convincing evidence of the impact of having children on marital stability is demonstrated in the significant number of studies of fertility. In particular, it is evidenced that having children is assumed to solidify and cement families, marital unions and step-families with still no signs of marital disruption. E.g., the confirmation of the hypothesis on the presence of children lowering the risk of marital disruption is stated in Cherlin 1977; Koo, Suchindran and Griffith, 1984; Morgan and Rindfuss, 1985; and Waite, Haggstrom and Kanouse, 1985. Morgan, Lye and Condran (1988, 111) claim that, according to the published data from June 1980 Current Population Survey, in recent years "the children also appear to constitute financial, legal and emotional barriers to divorce" and that "the childless have the highest risk of marital disruption, except for those with children at the very early durations" (ibid, 115).

Morgan et. al also provide an important argument in favor of such an interpretation of the link between having children and marital stability. Scholars suggest that the association between having children and marital stability may represent the opposite causal chain since parents differ from nonparents on a number of dimensions besides parenthood. However, as discussed, "the finding of differential rates of disruption by sex of children provides indirect support for the overall theory that children provide a new basis for marital stability built on parents' involvement with an investment in children" (ibid., 124).

Along with research supporting the claim of children affecting marital stability, there are also studies investigating the role of child or children in cementing cohabitation relationships. For instance, Wu (1995:231-236) researched event history data from the 1990 Family and Friends Survey on 3,015 cohabitation relationships. In the course of the study the scholar found a strong and positive impact of the presence of children on stabilizing cohabitation relationships. This conclusion is of great importance for projecting future fertility in general and assessing the validity of the uncertainty reduction theory in particular since the number of cohabiting unions is on the rise.

The validity of the hypothesis of the presence of children's impact on marital and consensual unions' stability is further supported by the studies of stepfamilies. Prskawetz, Vikat, Philipov and Engelhardt (2003:108-144) suggest extending the concept of stepfamily: "…the term *stepfamily* that was formerly restricted to marriages only, needs to be extended to include consensual unions involving a child or only one partner. This definition of stepfamilies takes into account the fact that an increasing proportion of higher-order unions are consensual unions" (Ibid, 108).

Several studies (Vikat et. al 1999; Buber and Prskawetz, 2000; Thomson et. al 2002) have demonstrated the union commitment effect on fertility. In Prskawetz et. al words, the latter means that "a birth risk is alleviated if a couple does not have shared children" (2003:108). In the scholars' opinion, this is "… one of the driving forces of fertility in unions where either partner already has children from a previous union" (2003:108). Vikat et. al (1999:211-225) have specifically studied the impact of the number of births in previous unions on the desire to have a new child in a new consensual or marital union. For that purpose, scholars compared fertility of Swedish men and women who lived in consensual or marital union in the 1970s and 1980s, the ones where at least one of the partners had children, with the demographic performance of the couples without any children before the current union. Vikat et. al have found the clear evidence that regardless of how many children (if any) they had before the current union, the couples wanted a shared biological child. In the scholars' opinion, the latter served to demonstrate a commitment to the union.

The important part of the discussion related to the proposed hypothesis is whether the reduction of uncertainty is reduced by moving from non-parenthood to parenthood, or also by increasing the number of children (e.g., giving birth to second or third child). Friedman et. al state that the main way of reducing uncertainty is to become a parent. However, there are following reasons to believe that in many instances the increased number of children could also serve as a means to combat uncertainty. First, there is evidence that the number of children is negatively correlated with the rates of marital disruption. Several studies (e.g., Cherlin 1977; Morgan et. al 1988; Waite and Lillard, 1991) have convincingly demonstrated that reduced risk of marital disruption is associated with a larger number of children in the family.

Second, sex of a child plays a role in the odds of preserving marital stability. According to several studies (e.g., Morgan and Rindfuss, 1985; Bumpass and Rindfuss, 1983), the effects of sex composition of children on marital disruption are smaller compared with such huge correlates of divorce as race and age at marriage. Still, Morgan, Lye and Condrad (1988:115) note that "for couples with one child, the figure shows that the risk of disruption is 9% higher for those with a daughter than for those with a son. For two-child families, the risk of disruption is lowest for couples with two sons, followed by those with one son and one daughter (9% higher), and the highest observed risk is "for the couples with two daughters (18% higher)."

In the same vein, Raley and Bianchi (2006:401-421) cite research demonstrating a strong preference for having one child of each gender in USA and most of Europe. Several studies (Pollard and Morgan, 2002; Sloan and Lee, 1983; Williamson 1976; Yamaguchi and Ferguson, 1995) provide evidence that cohorts of US parents born in the early 1900s and later, with two children of the same sex, were more likely to have a third child than the parents with children of different sexes. The study of Teachman and Schollaert (1989) showed that parents with children of the same sex were not only more likely to have a third child, but proceeded with that more quickly. The latter point allows for hypothesizing that in certain instances the desire to reduce uncertainty could result in narrowing birth intervals (this was leading to increase of TFR for corresponding years).

Raley et. al also cite research of Andersson et. al (2006) that also found differences in the probability of a third birth for those parents having two children of the same sex in Scandinavia. While in Sweden, Denmark and Norway there is a greater likelihood of a third birth if the first siblings are boys, in Finland the third birth is more probable when there are two daughters. Finally, as was discussed above, the higher parity births could serve as means for marital stability in stepfamilies where joint biological children could appear regardless of the number of children born in previous marital or consensual unions.

It is also worth mentioning again that uncertainty reduction theory propositions are valid for decision-making in the state of symbolic uncertainty not directly related to changes in available economic resources. Thus, uncertainty reduction theory premises could only be applied to the periods of sociopolitical instabilities that generate mostly symbolic uncertainties.

Finally, the assumption that links micro-level fertility rates is:

(3) *Any increase in fertility at the micro-level of individuals or families will inevitably result in greater fertility rates at the macro-societal level.*

Development of the Model

The first step in exploring this heuristic model is to speculate about how different types and levels of societal instabilities (macro-level) at different periods are perceived by individuals and families (micro-level). It is obvious that those macro-level societal instabilities of various types, intensity and magnitude

generate different levels of uncertainty at the micro-level of an individual or a family. Governmental crises in Italy, for instance, will not generate as much uncertainty as the possible comeback of Communists to power in Russia as seen after the 1996 elections. By the same token, uncertainty created by the 2020 presidential elections in the US was not reduced to the one related to a routine change in politics of a new Party and President. Such uncertainty generating issues as legitimacy of the new presidency, actual disenfranchisement of certain groups of electorate, and vitality of such institutions as separation of executive and judicial branches, were also brought up.

Uncertainty reduction theory does not elaborate on ranking uncertainties in scope and intensity, much less relating them to corresponding types of instability. The key to translating macro-level instabilities to micro-level uncertainty reduction assumptions is to look at how particular types of instabilities could be perceived by individuals and by families as uncertainty generating.

This leads to the need for utilizing the existing conceptualizations and scaling the societal instabilities for the purposes of conducting any prospective research on the topic. The prominent scholars, Sofranko and Bealer (1972), acknowledge the wide range of types of domestic instability and their relative seriousness. On one end of the spectrum are mild dislocations that do not require police action. On the other end, Sofranko and Bealer locate such events as strikes, civil disobedience, riots, coups, power struggles and the like. They also make a very important and promising attempt to conceptualize domestic instabilities. They offer a construction of an index of the level of domestic instability that allows for scaling. This level is based on intensity of the most unstable domestic event, number of domestic unstable events, and magnitude of civil violence.

Safranko and Bealer suggest that the first measure be constructed based on a seven-point rating system ranging from complete stability (0) to extreme instability (6). The countries are assigned to each of these categories based on the most unstable events recorded in a given period. For instance, in one such allocation, the following events were rated in terms of intensity of instability: 0 - general election held and without repercussion; 1 - resignation or dismissal of a cabinet official or dissolution of a legislature; 2 - peaceful demonstrations, strikes of article law; 3- riots or assassination of political leaders, but not the head of state; 4 - large-scale arrests, plots or terrorism; 5 - revolts or coup d'état; and 6 - revolution or civil war (Sofranko and Bealer, 1972: 35). The second measure, the number of unstable events, is pretty straightforward. In the third measure, related to civil violence, the summary instability score is created from a set of five basic measures: 1 - number of participants; 2 - area encompassed by the most widespread strife; 3 - number of casualties; 4 - extent of property damage; and 5 - duration of civil violence.

A very useful conceptualization of instability is also proposed by Alesina and Perotti (1993). The authors introduce the concept of sociopolitical instability that could be viewed in two ways. The first one emphasizes executive instability. The second relates to social unrest and political violence. The first

approach defines political instability as the “propensity to observe governmental changes.” These changes could be either constitutional or unconstitutional. The first ones take place within the law, and the second could mean having a coup d’état. Authors stress that a high propensity to executive changes is associated with policy uncertainty and, in some cases, with threats to property rights. Also, propensity for executive changes is distinct from the actual frequency of changes.

The second approach for measuring sociopolitical instability, proposed by Alesina and Perotti (1993), is aimed at capturing phenomena related to social unrest. The index of sociopolitical instability includes the following variables: ASSASS, the number of politically motivated assassinations; DEATH, the number of people killed in conjunction with phenomena of domestic mass violence; SCOUP, the number of successful coups; UCOUP, the number of attempted but unsuccessful coups; DICT, a dummy variable that takes the value of zero in democracies; 0.5 in semi-democracies and 1 in dictatorships. In this model, democracy is defined as a country with free competitive elections, while semi-democracy is a country with some form of elections, but with some severe restrictions on political rights; a dictatorship is a country without competitive elections.

Provided conceptualizations and scaling of various types of instabilities allow for making the following assumptions:

1. *The executive type of instabilities is perceived as generating fewer uncertainties than the “social unrest” type of instability;*

2. *The instabilities ranking higher on their magnitude, score higher on the perceived uncertainties;*

3. *The instabilities characterized by greater intensity are perceived as generating greater uncertainty.*

These assumptions imply the unique connection between each of these sociopolitical instabilities of a given type, magnitude and intensity, and the perception of them as uncertainty at the individual level. Individual perception of each of these instabilities, however, is also related to several other factors. One of the best works dedicated to these factors (worth exploring for the purposes of linking macro- and micro-levels) is comparative research on risk perception in Poland, Hungary, Norway and the United States (Goszczynska, Tyszka and Slovic, 1991). In estimating how people perceive risks and hazards Slovic developed a "psychometric paradigm" that elicits quantitative judgments of risk of diverse hazards, similar to certain kinds of psychophysical scaling. The comparison was made of these judgments with others of the same hazards on different scales, reflecting risk characteristics.

Risk characteristics were the following: unknown to the exposed, unknown to science, unfamiliar, involuntary, containing unobservable consequences, severity of consequences, dread, carrying catastrophic potential. Because of high correlations of some of these characteristics with each other they were reduced

to two factors. Factor 1, called "unknown risk", included such scales as unknown to the exposed, unknown to science, unfamiliar and involuntary. Factor 2, "dread risk", was composed of such characteristics as severity of consequences, controllability, dread and catastrophic potential. These two factors were found to be accountable for some 75% of the total variance in the measures.

How could these risk factors be related to the uncertainty perception? Concepts of risk and uncertainty are oftentimes used imprecisely and interchangeably in the decision-making literature. Risk factor, according to Goszczynska et. al, is defined as "unknown risk"; so, it is actually referred to as an uncertainty. The latter differs from risk in one way: it is impossible to assign probabilities in the decision-making process because they are unknown. The situations perceived by respondents as "unknown risk", as defined by Goszczynska et al., satisfy this criterion. Thus, hazards that score high on the "unknown risk" scale -- such as social tension, economic crisis, nuclear power, shortages of home and medical equipment, shortage of dwellings -- could be well perceived as the ones creating uncertainty.

The way to employ these findings for the model is, first of all, to relate these uncertainty generating factors to the described types of societal instabilities. The first step -- translating macro-level instabilities to the micro-level perceptions of them as uncertainties for the purposes of formulating research hypotheses -- is to make assumptions about this translation.

Based on the discussion provided above, the first assumption linking macro- and micro-levels could be formulated:

(1) *The more societal instability is related to situations that could be perceived as "unknown" factors, the more it is perceived as an uncertainty.*

Factor 2 is most closely associated with the following scales: dread uncontrollability, catastrophic potential, severity of consequences, risk for future generations, involuntariness and personal exposure to risk. This factor, called “dread”, is independent from the first, the “unknown risk” factor. Among hazards scoring high on the" dread” factor without scoring high on the “unknown” risk scale are: crime, shortage of food, nuclear weapons, alcohol, narcotics and terrorism. The two factors combined produce a joint picture of “unknowingness” and “dreadedness” of risk. Hazards that reflect both “dreadedness” and “unknowingness” are: economic crisis, social tension, repressions, shortage of medicines and medical equipment, nuclear power, pesticides and herbicides.

In opposition to the first factor, the second one is not related directly to the uncertainty, because it encompasses hazards with both known and unknown risk (i.e., uncertainty). However, I believe that the instabilities in societal segments related to more “dreadful” consequences will provide a stronger desire for uncertainty reduction than the instabilities related to lesser “dread” hazards (given the same degree of “unknowingness”, i.e., uncertainty itself). This assumption is based on the nonsystematic observations

showing differences between perceptions of uncertainty, say, related to the introduction of socialized medicine and perception of uncertainty related to possibility of nuclear reactor explosion (though both could be characterized by the same degree of "unknowingness").

Hence, assumption two could be formulated:

> (2) *People will be more motivated to reduce uncertainties related to societal instabilities that produce more "dread" consequences.*

The two factors described above were found to be accountable for some 75% of the total variance in the measures. The rest of the variance, according to that study, could be explained by two other factors. The first of these two other factors is the size of the country. The size of the country contributes to the perception of uncertainty in that: the bigger the country, the more its absolute number of accidents, crimes etc. are perceived as a threat even if the share of them in a given population is the same. This conclusion was illustrated by comparing differences in perceptions of the same hazards between populations of Poland, Hungary, Norway and the U.S. (Goszczynska et al. 1991:181).

The second of these two other factors is the media information policy. The cited study explains some of the differentiation in uncertainty perception in the observed countries by levels of openness of mass media (Goszczynska et al. 1991:181). First, there is a difference in the level of censorship between communist and noncommunist countries. As noted by the authors, the strict censorship on accidents, shortages and crime in the communist countries could lead to the perceptions of those hazards that differ from the ones in the non-communist countries without such strict censorship. That is, they appear lower in communist countries.

Second, there were different levels of censorship across communist countries. For instance, people in Poland had relatively more information about such hazards as catastrophes, accidents and crime than people in the other former communist country, Hungary, due to the existence of an independent Catholic press and numerous uncensored underground newspapers in Poland. This premise could also be applied nowadays to the "industrial democracies" because of different levels of informational availability in different parts of the countries, as well as due to the different levels of the development of democratic institutions across these countries.

The second finding allows postulating two additional assumptions about the perception of societal instabilities based on the discussed study:

> (3) *The instabilities of the same levels of "unknowingness" and "dreadedness" will be perceived differently at various historical periods. The periods characterized with greater access to information will be typified by a greater perception of uncertainty.*

(4) *The instabilities of the same levels of "unknowingness» and "dreadedness" will be perceived differently in various regions of a given country. In the regions with greater access to information and less strict censorship the perception of uncertainty will be greater than the ones in the regions with lesser access to information and more strict censorship.*

These assumptions have implications for the macro-micro link – between societal instabilities and the individual's and family's perception of it as uncertainty. At this point I am turning to the second part of the diagram -- micro-micro link. According to the uncertainty reduction theory outlined in the previous section, increased uncertainty is a predictor for increased parenthood. The theory emphasizes moving from being a non-parent to the decision-making on having a child. However, it is possible to extend the theory also to certain kinds of other types of fertility increase like increasing numbers of second, third and fourth orders of birth. First, given the "gendered" nature of the social world, having a boy and a girl would further reduce uncertainty, because boys will constrain parents in some ways while girls will do so in other ways, which boys cannot do. So having two boys and two girls will not further reduce uncertainty, but having a girl and a boy would. It could provide an incentive for having a second, third or fourth child for the sake of them being of the opposite sexes.

Second, the increased number of children could be viewed as increasing marital solidarity (the latter is also viewed as the means to reduce uncertainty). Friedman et.al cites Tseng (1992: 616): "The physical presence of children in the household serves as an obstacle to their parents' marital breakdown." Third, of even greater importance, the birth of an "additional" child of any parity is often given in the new marriages in order to enhance marital solidarity (in cases where there are children from previous marriages of any or both of the spouses). Children from previous marriages won't do the job of enhancing marital solidarity but the ones from the current marriage will. Increased number of divorces and widowhood contribute to the increase of these types of births. Friedman et. al have acknowledged the measure of moving from non-parenthood to a one child to be an ideal one but they still used empirical studies measuring the actual number of children in a family for supporting or disproving their hypotheses.

Thus, the assumption linking uncertainty perception with fertility decision-making (micro-micro link) could be formulated in a following way:

(5) *The greater the perception of uncertainty, the greater the fertility outcome for an individual and/or a couple (resulting either from moving toward decision to have one child or, by increasing the number of children or, by spacing the intervals between births differently).*

In addition to that, I make an assumption about how a combination of sociopolitical instabilities and economic instabilities affect fertility. In this special case, I believe economic instability and crisis will affect fertility adversely, eliminating the possible positive impact of sociopolitical instability on this demographic process. So, the next assumption could be formulated in a following way:

> (6) *At periods characterized by both profound economic and sociopolitical instability, fertility rates will decrease, mainly as a result of the former.*

This assumption is based on both theoretical assessments and certain empirical evidence. To get to the core of the problem, one has to define and divorce the concepts of economic and sociopolitical instabilities. As mentioned before, the former includes large falls in statistically measured output, high rates of inflation (Rostowsky 1988:1), falling income level, unemployment rate, uncertainty of finding a new job and unpaid wages (Koehler and Koehler, 2002:234). The examples of the latter, as mentioned before, are coups d'état, demonstrations, civil wars (Chauvet 2002, 234), elite conflicts, changes in the executive, social conflicts, including strikes, riots, political assassinations, guerilla warfare, and civic wars (Alesina and Perotti, 1993).

Economic and sociopolitical instabilities are assumed to have opposite effects on fertility, the former negative and the latter positive. While sociopolitical instability is perceived as uncertainty (and therefore, according to the uncertainty reduction theory, increases birth rates), economic instability typically leaves one a possibility to assess risks and therefore is not perceived as uncertainty. Indeed, most sociopolitical instabilities such as coups d'état are hard to predict or assign odds to. At the same time, it is possible to estimate the odds of losing one's job at the time of recession on the basis of existing trends and learning experience.

Indeed, persistent rises of unemployment or job insecurity, as stressed by Koehler and Koehler (2002: 243-244), could directly affect one's expectations about future earnings and wages. As they write:

> *"The individual's expectations about such persistent changes in unemployment or job insecurity are likely to be strongly influenced by current changes in unemployment and labor-market conditions: the worst recent conditions constitute the relevant experience that can be extrapolated into the future by individuals, and this 'learning on the basis of recent experience' is likely to be particularly relevant to the transition countries where individuals are faced with new institutional contexts that share few commonalities with the pre-1990 situation…" (ibid.)*

Therefore, fertility behavior during the periods of economic instability is better explained by the microeconomic theory of fertility predicting decreasing birth rates under the conditions of rising inflation or falling income. The assumption about the prevalent influence of economic instability on fertility when it coincides with sociopolitical instability is based on the fact that people always prefer situations with known

risk to uncertainty (Friedman et. al 1994:133) and the relevant empirical evidence (on which I elaborate later below).

The work of Koehler et. al (2002) provides strong evidence of not only economic instability and crisis adversely affecting fertility but also of various types of economic instabilities having different impact on this demographic process depending on the ability to assess their odds (in other words, on whether they are perceived as uncertainties or not). On one hand, the scholars provide strong evidence of economic instability and crisis impacting the decline of fertility in Russia in the late 1980s and the first half of the 1990s, using macro-level data. This evidence includes a strong association between the decline in fertility per capita GNP, with the most pronounced relationship between the fall of the latter and the rates of second and third births (Koehler et. al, 2002:238)

However, micro-level data obtained in the course of the conducted Russian Longitudinal Monitoring Survey (RLMS) has provided mixed and what seemed to look like contradictory and counterintuitive results. In the course of this survey the impact of fertility on various types of economic instability (such as short-term actual unemployment, delays or no-payment at the primary job, job insecurity) in the corresponding groups was studied and compared. It was found that, counterintuitively, some groups facing labor market uncertainties, reflected in unemployment and unpaid wages, did not demonstrate decline in fertility, and sometimes even increased it. To explain this phenomena, Koehler et. al turn to the premises of uncertainty reduction theory attributing the decreased fertility to the desire to reduce the uncertainty related to the economic conditions. By introducing subjective measures of economic instabilities, Koehler et. al have obtained a support for this conclusion - these types of economic instabilities were indeed largely perceived as uncertainties.

However, other types of economic instabilities don't fit this category. The groups experiencing them demonstrate decline of their birth rates. Among these other types of economic instabilities, the ones associated with concerns about obtaining daily necessities like long-term unemployment, whereas actual unemployment in a sampling cluster could be of short-term and "only moderately related to no payment" (Koehler et. al. 2002:245). These types of economic instabilities where odds could be to a certain degree assessed and that are mostly associated with obtaining daily necessities cause the decline of fertility on behalf of corresponding groups, in accordance with the premises of microeconomic theory of fertility. Since these latter types of economic instabilities are prevalent, and the groups experiencing them constituted a majority in the late 1980s and early 1990s Russia, the overall impact of economic instability on fertility was adverse.

There are also many empirical examples of the negative association between economic instability and fertility. For instance, in the Commonwealth of Independent States (CIS) and Eastern European countries that underwent market reforms in the 1990s, there was a deterioration of living standards that

were followed by the decline of fertility. This decline was the most steep, pronounced and durable in the countries where reforms were the most painful for the population material-wise such as Russia, Ukraine, Moldova, Bulgaria, Slovakia and Romania. On the contrary, in the countries where reforms went relatively smoothly like Czech Republic, Poland, Hungary and Slovenia, decline of fertility was less steep and lasting. It is also of interest that, according to Sobotka (2003), in the first group the countries it was the *quantum* of fertility being affected the most, whereas in the second group the greatest effect of economic hardships concerned the *tempo* of fertility. In other words, in the countries with milder manifestation of economic instability and crisis decline in fertility was largely attributable to the changing calendar of births while in the countries with huge degree of economic instability there was more substantial impact resulting in the diminished actual number of births for the whole childbearing period of women.

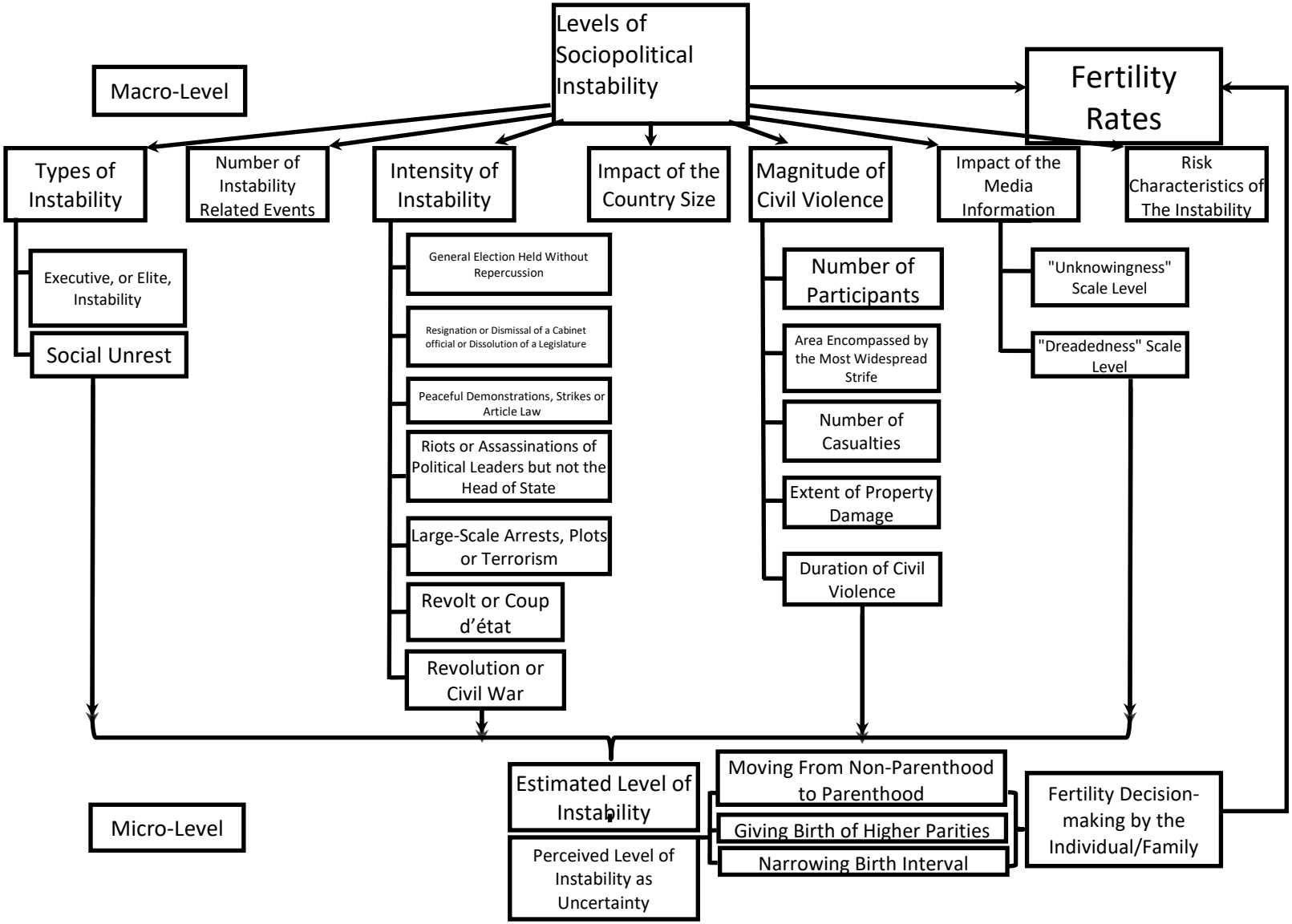
Finally, third link – the micro-to-macro one – does not require advancement and thus stays the same as formulated in the previous section:

> (7) *Any increase in fertility at the micro-level of individuals or families will inevitably result in greater fertility rates at the macro-societal level.*

This elaborated model that allows for translation of different types and scopes of instability into corresponding levels of uncertainties that affect fertility behavior and rates could be represented in the following way (see Figure 1):

It seems that using this set of assumptions in a proposed model has a great potential for the future research. Based on the discussed above elaborations, I propose the following model of sociopolitical instability's impact on fertility:

Figure 1. Model of Sociopolitical Instability's Impact on Fertility



Conclusion

The proposed extended model allows for linking these two phenomena – societal instability and short-term fluctuations of fertility – in empirical research. It also allows for distinguishing between macro-societal instability and its perception as uncertainty at a micro-level of an individual or a family. This distinction was typically ignored in the theoretical and methodological literature on the subject. The result of it was the confusion of two levels of analysis – macro- and micro-ones. This confusion has distorted the phased process of formulating the predictions of fertility rates for a given period. The proposed model resolves this problem by divorcing these two levels of analysis, thus allowing for better empirical tests of the hypotheses about the impact of societal instabilities on short-term fluctuations of fertility and, correspondingly, for the more accurate predictions of the latter.

The model is opened to the inclusion of practically any type of societal instability, as far as its conceptualization and operationalization allow for ranking their types in scope, magnitude and intensity, therefore allowing for their translation into the individual's or family's perceptions of these instabilities as uncertainties. The model incorporates premises of the extended uncertainty reduction theory, but is not limited to them. The model also has an inclusion of the connections between instability and its perception as uncertainty at the individual level – the ones that are not explicated by the uncertainty reduction theory. One of the options stemming from the model is a possibility of ranking uncertainty in regards to corresponding intensities of instability with the help of scaling "unknowingness" and "dreadedness" levels.

The model could be tested directly (employing the data at the micro-level), if the information about individual's or family's perceptions of uncertainty is available. In that case the test includes data on uncertainty perceptions and fertility decision-making. If, however, this information is not available, the model could be tested indirectly by comparing different types of societal instabilities with fertility rates at any given period, provided the availability of the reliable measures for both instability levels and fertility rates. The ability to test the hypotheses on the societal instabilities of various types on fertility indirectly, when the data at micro-level is not available, makes this model advantageous and the one of broad application.

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