frozen. Because only about half the embryos survive freeze-thawing, usually all the frozen embryos are thawed together. The number of embryos freeze-thawed ranges from one to four.

Probably some couples will change their attitude to the use of frozen embryos, owing to divorce, death, or disease in one partner or changing psychosocial circumstances. At present unwanted embryos may be donated, discarded, or given for research. Our preference is for donation, which helps other infertile couples. Prenatal adoption of unwanted embryos may have advantages over postnatal adoption. Matching of donors and recipients may be more accurate, as adoption agencies are restricted by the small number of babies available and the long waiting lists in selecting adoptive parents, whereas storage of a large number of embryos (as in semen banks) will permit selection by matching donor and recipient characteristics. The recipient of the embryo experiences the emotional changes of pregnancy and birth, and the mother-child relationship may be favourably influenced by these and the early postnatal experiences.

Shortly before this report one couple died in an aeroplane accident after two embryos developed from the wife's oocytes and donor sperms had been frozen; this raised not only the problem of use of unwanted embryos but the possibility of the legal rights of inheritance of the embryos should they be transferred and survive.

We find that abnormal embryos die when growth is allowed

to continue in vitro. A high early embryonic mortality has been established in man and other species.⁷⁻⁹ Couples do not accept abnormal embryos for transfer and prefer them to be examined in an attempt to define the type and cause of the abnormality. This knowledge increases the understanding of early embryo development, which may help other infertile couples and may be relevant to determining the causes of fetal malformation.

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USSR Letter

The unmarried mother and her child

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Although the Soviet authorities publish relatively little demographic data on a regular basis, they make no secret of the substantial imbalance between the numbers of men and women in the USSR. Each annual abstract of statistics contains a time series which gives a breakdown of the population by sex (though not by age); the latest volume reports that on 1 July 1983 the population consisted of 145.0 million women and 127.5 million men. The difference was thus 17.5 million, which may be compared with the even larger figure of 20.7 million at the 1959 census.

The main cause of this disproportion between the sexes is the colossal number of male deaths in the hostilities, and in many other less publicised contexts, during the second world war. Nevertheless, there is a secondary influence to which attention should be drawn: the persisting differential in mortality rates. For the age groups 20 to 50, according to an entirely reliable source, "the mortality of men is *twice as great as that of women*" (my italics).¹

Pronatalist propaganda

In view of the authorities' longstanding anxiety over the low birth rate in many parts of the country, it is not surprising that from an instrumental viewpoint the cohorts of younger unmarried women should be regarded as a demographic resource. A few years ago one highly placed expert, Professor Boris Urlanis, provided a vigorously expressed example of that attitude in the mass circulation newspaper *Nedelya* (*The Week*).²

Having criticised frequent recourse to abortion by married women, he turned his attention to those whose chances of finding a husband are slim, whether owing to their age, temperament, or place of work. (The last factor relates not only to specific occupations but also to whole communities because some towns are almost entirely devoted to light industry employing women.) Urlanis wrote that such a woman should understand her position and "ought to be aware also that motherhood sometimes brings more joy (or, in any event, not less) than matrimony, especially if matrimony is not accompanied by love and respect."

For Urlanis a reduction in the number of abortions among unmarried mothers represented a priority task which he perceived as simultaneously furthering the interests of the woman and her country. Implicitly, at least, he dismissed the significance of social and psychological problems entailed by having to raise a child alone. With facile chop logic he asserted: "She is not really single if she has a baby! There are two of them—they have a family!" Given that unmarried mothers received "a maximum of attention and

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material assistance," there was no cause to fear an increase in their numbers.

A more advanced perspective of the matter, without crude prescriptive judgments, appeared three years later in an article by Professor M Bedni, director of the medical demography research laboratory of the Russian republic's Health Ministry. Writing in *Meditsinskaya Gazeta*, he avoided open contradiction of Uralnis's views but somewhat circumspectly set alarm bells ringing.³

Although essentially empirical in approach, the article opened by, so to say, observing the ideological proprieties: it clearly implied the superiority of the Soviet state over others in respect of policies about illegitimacy. Indeed, it noted that Soviet law does not differentiate between children born within wedlock and those born outside it: "They are all our children; they all have equal rights and our socialist society displays concern for all of them." Later Bedni returned a negative answer to the question of whether absence of legal discrimination serves to encourage births out of wedlock, but did not embark on any causal analysis, preferring to rely on a quotation from an unassailable doctrinal authority—the works of Lenin. No mention was made of the fact that in 1944 the regime had imposed legal disadvantages on illegitimate children and their mothers, which apparently remained in force until the 1968 law on marriage and the family.

Rare statistics

Against that background Bedni established the quantitative dimensions of the problem, citing data which as a rule would be unobtainable. He first gave a precise record for the Russian republic in 1970: a total of 68 178 births out of wedlock were registered in towns and 50 600 in the countryside. These figures represented 5.6% and 7.2% of all urban and rural births, respectively. For the other year in his time frame, 1978, the account was more broad brush, but it showed that "every eighth or ninth child" was born out of wedlock and that the number of such children had doubled since 1970.

Given the Russian republic's geographic extent (over 17 million square kilometres), population size (now about 141 million), and variety of socioeconomic conditions, it would be curious if Bedni's figures did not conceal regional differences. An incomplete but suggestive picture of the range emerges from his statement that one in ten registered births were illegitimate in the Central, Volgo-Vyatka, and North Western economic zones, while the figure was one in six in rural areas of Sverdlovsk and Kaliningrad regions, and as high as one in four in rural areas of Perm and Irkutsk regions.

For the Union as a whole Bedni provided tantalisingly few data. The number of unmarried women in the child bearing age groups he gave as about six million (which might seem surprisingly high when almost four decades have elapsed since the end of the second world war). The total number of births out of wedlock was stated to be roughly half a million each year. And when that figure is related to the absolute number of births recorded for the past few years it emerges that the illegitimacy rate for the USSR has been hovering at around 10%.

A complex issue

On the fundamental issue of whether this demographic situation is desirable or not, the professor adopted a highly cautious stance, drawing attention to the importance of potentially conflicting considerations. One is purely quantitative: high birth rates out of wedlock occur in parts of the country where the general birth rate is low—namely, in the central regions of the Russian republic, the Ukraine, and the three Baltic republics of Latvia, Lithuania, and Estonia. This negative correlation, he accepted, makes it under-

standable that unwed motherhood should be regarded as the alternative to an even lower level of fertility.

The notion of unwanted pregnancies is largely irrelevant to the present discussion, owing to the availability of abortion on demand. Nevertheless, Bedni firmly asserted the existence of risk factors which have a direct bearing on the mother's health and on the physical and psychological development of her offspring. Spelling out these negative influences, he stated: "During the period of pregnancy, as a rule the mother finds herself in a stressful situation. It is often necessary to conceal her pregnancy and to keep the birth of her baby a secret. Ordinarily the conditions for rearing a child and for providing care and attention are less favourable in these circumstances than in complete families."

Those comments do not amount to an overt challenge to the demographic case for an additional half million or so births each year, but they point readers to the importance of other than purely quantitative issues. Dissatisfied with a situation where official statistics are "clearly inadequate to answer many questions which present both scientific/theoretical and practical interest," Bedni advocated research to obtain relevant sociographic data and elucidate the motives and attitudes of unmarried mothers. His conclusion was that births out of wedlock represent "a complex and, I would say, acute demographic, social hygienic, and medical problem which is having an increasingly serious influence on the character of the population's reproduction. . . ."

Readers write

Whether the information gaps identified by Bedni will become the subject of research remains to be seen, but interesting anecdotal evidence about the experience of unwed motherhood may be gleaned from letters published in response to his article.⁴ Since constraints of space make it impossible to cover all the themes they touch on, I will refer briefly to three issues that seem especially prominent.

The first is the persistence of social prejudices and discrimination against unmarried mothers, even on occasion among the doctors whom they consult. One correspondent described the humiliation she was subjected to at a dermatovenereological dispensary, as a consequence of which she suffered a heart attack. Incidentally, a partial explanation of such hostility is suggested by the fact that several letters depict these mothers as wreckers of previously successful marriages.

A second theme may be encompassed by the assertion that life is more agreeable without the burdens of marriage. "What do I need a husband for?" writes a doctor with one child, and goes on to reject the thought of voluntarily entering into domestic servitude. (Most Russian men, by all accounts, give an irreducible minimum of help in the home.)

A closely related issue is whether the child will be better off with or without a father who is inadequate in the sense of being "a drunkard, a brawler, who is not respected either in society or in the family, lacks will power, and is a weak character." From a psychiatrist comes the reminder that from their earliest years children are asked "who is your father?" and that the mother's handling of this question may result in emotional damage for some. Interestingly enough, the editorial comment which closed the correspondence noted the mothers' unanimity that "the child does not need a father of whom he cannot be proud, whom he cannot respect and love." Exactly what personality profiles would fit that description is a separate matter—and one for speculation.

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