

**Networks, Strata and Ageing:
Towards a Compositional Demography of Vulnerability**

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Abstract

In a recent commentary, Kreager (2011) has argued for the “strategic value of studying population composition” in order better to identify the units of population relevant for understanding vulnerability. Conventional approaches, relying on census and survey sources which model populations as homogenous, bounded and composed of discrete households, have failed to accomplish this. Drawing on ethnographic and demographic fieldwork in rural Indonesia, this paper attempts a contribution to ‘compositional demography’ by illustrating a methodology for identifying the subpopulations within a community which are relevant for understanding vulnerability in later life.

Key differentials at the local level include the availability of children and socio-economic strata; combining these two dimensions begins to point to significant vulnerable subgroups but falls short of explaining outcomes in later life, because demographic and socio-economic characteristics are mediated by membership of wider networks. The paper therefore characterises a number of indicative and contrasting kinship networks in the study community in terms of their demographic success, marital alliances, land ownership and occupational identities, and examines how these networks have differentially aligned themselves with broader religious, economic and social shifts. Some networks are better able to exploit the opportunities that education or migration entail, others founder on fragmentation of assets, fecklessness and disharmony, and the loss of reputation that entails. It becomes possible to distinguish ascending and descending, locally-bound and translocalizing, and ‘traditional’ and ‘modernising’ networks. Once older people are located within these different kinds of networks, their treatment and differential vulnerability need no longer be modelled purely on their individual characteristics or immediate household or family contexts, but can be understood as the outcome of negotiations, manoeuvrings and sometimes failures of the networks to which they belong. The needs and priorities of elders themselves are rarely of central concern to key agents within the networks, a fact which underlines the limitations of treating ‘the older population’ in isolation. In short, the paper makes an argument for treating networks as the population components of relevance for understanding socio-demographic processes, including population ageing. Identifying and modelling networks raises important conceptual and methodological challenges, but in virtue of being multi-generational, reproductive identities which encompass diversity and cut across strata and space, networks are socially meaningful and empirically grounded population units within which to understand human behaviour.

Networks, Strata and Ageing: Towards a Compositional Demography of Vulnerability

Introduction

Most thinking on population processes and the implications of population change rests on one of two extreme levels of analysis: the macro level of entire populations or nation-states, or the micro level of individuals and the households they belong to. The adoption of one level over another is almost arbitrary, as much of mainstream post-war demographic thinking assumes a close homology between processes and outcomes at individual and aggregate levels (Kreager and Schröder-Butterfill 2010). Samuel Preston and Linda Martin (1994:3) capture this way of thinking very well when they write:

“Population aging will be one of the most important social phenomena of the next half century. ... [I]t is important because changes in the aggregate age structure are mirrored within nearly all social institutions, from firms to families. How these institutions accommodate themselves to impending changes in population age structures will have a significant effect on the quality of life in the twenty-first century.”

This paper is addressed to challenging this perspective of homology by highlighting the fact that populations are composed of sub-populations with different characteristics and behaviours. While it is *possible* (and indeed commonplace) to derive an aggregate, average representation from the sum of sub-populations' characteristics and trends, the interesting 'stories' are lost in the conversion. Understanding contemporary population changes and accommodation to them thus requires us to be able to identify empirically the relevant units of population (regions, communities, classes, networks?) and to examine how these units respond differentially to the mundane challenges of daily life. At base it is an exercise in disaggregating and recombining population units until patterns emerge. The relevant recombinations are likely to differ according to the challenges at hand, just as the composition of constituent population units will change over time.

While studying population composition may hold strategic value for understanding vulnerability (among other things), engaging in 'compositional demography' is difficult using demography's preferred approaches and data sources (Kreager 2011). This Discussion Paper therefore describes a methodology developed for studying population ageing and old-age support in Indonesia, which resulted in the identification of different subgroups at a local level (e.g. on basis of economic position, availability of children, gender). Relating these subgroups directly to outcomes in later life was difficult, as members of a given group often experienced rather different outcomes. By locating older people in the networks they are part of and examining the ways in which different networks are able and willing to accommodate the needs of vulnerable elders, we arrive

at a working model of what the relevant population units for understanding experiences in later life are and how these units may be evolving.

Drawing on ethnographic and demographic fieldwork in rural Indonesia, this Discussion Paper addresses questions such as:

- What are key dimensions of population heterogeneity in rural Indonesia, and what shapes heterogeneity in different locations?
- What is the nature of older people's networks? How do networks function, what can they accomplish?
- How is membership to networks established or revoked?
- What is the relationship between different networks at a local level, and how is the balance between networks changing over time?
- What kinds of networks are better able to protect the interests of older people?

The paper starts by drawing out key dimensions of population heterogeneity as it pertains to population ageing at regional and local levels. Key differentials include the degree of age-structure imbalance, the availability of children and socio-economic position. Combining these dimensions begins to point to significant vulnerable subgroups but falls short of explaining outcomes in later life, because demographic and socio-economic characteristics appear to be mediated by membership of wider networks. The paper therefore proceeds to describe the nature of older people's networks in rural Indonesia and to characterise a number of indicative network types. The relationship of these networks to each other and to wider social, economic and religious changes is discussed, and older people's position and treatment within them examined.

From Nations to Networks

Indonesia, a former Dutch colony which achieved independence in 1945, is the world's fourth largest population, and one of the most rapidly ageing populations worldwide. By international comparisons the proportion of elders is still modest, with currently 7.6% of the population aged sixty and over (Badan Pusat Statistik 2011). However, the size of Indonesia's elderly population is set to treble between 1990 and 2025, and it will take at best two generations before elderly people represent as large a proportion in Indonesia as they do in Western industrialised countries today. The rapidity of population ageing in Indonesia, the sheer numbers involved, and the fact that Indonesia is still firmly a developing country, gives rise to a dominant 'crisis scenario' in policy and academic circles. This scenario predicts growing wholesale vulnerability among the older population as a result of inadequate state provision and supposedly declining family support as a result of migration, fertility decline and 'modernisation'.

It requires very little evidence to begin to unpack this monolithic story of imperilment. Indonesia is a country of unrivalled diversity. Its 240 million inhabitants are spread over 5000 inhabited islands. There are more than 300 ethnic and linguistic groups, and while the majority of the population is Muslim (88%), there are Hindu (1.8%), Christian (8.9%)

and Buddhist (0.84) minorities which reach majority status in some areas, as well as considerable diversity within Islam (see below and Beatty 1999; Suryadinata, Arifin et al. 2003). On densely populated Java, urban and rural areas often seamlessly blend into each other; elsewhere differences between urban and rural locations are stark. Thus it is hardly surprising that there is not one demographic pattern for Indonesia, but manifold regional and local patterns. These reflect different demographic regimes in the past – notably very different levels of pre-transitional fertility, timings of fertility decline, ages at marriage, and patterns of morbidity, mortality and infertility – as well as different present-day profiles for migration and family formation (Hull and Tukiran 1976; Hugo 1982; Jones 2001). Table 1 compares the ageing profiles and population sizes for several of Indonesia’s 33 provinces.

Table 1: Percentage aged 60 and over and population size (million), selected Indonesian provinces

Province	Percentage 60+	Population Size (mio)
Indonesia Total	7.6	237.6
West Java	7.0	43.1
Yogyakarta	13.0	3.5
East Java	10.4	37.5
West Sumatra	8.1	4.8
Riau	4.1	5.5
Riau Islands	3.4	1.7
East Nusa Tenggara	7.5	4.7
East Kalimantan	4.0	3.6
West Papua	3.1	0.8

Source: 2010 Census data, Badan Pusat Statistik, <http://dds.bps.go.id/eng/aboutus.php?sp=1>

In the central Javanese province of Yogyakarta the percentage of elders is almost double the national average and more than four times greater than in West Papua, Indonesia’s ‘youngest’ province. East Java, the location of one of the study communities reported on here, is the second most ‘elderly’ province in Indonesia and home to 37 million older people (more than the total Dutch population). Several Sumatran provinces, notably Riau and Riau islands, manifest young age structures as a result of dramatic in-migration by younger Indonesians seeking work in and around the national and global businesses located there. Clearly in some areas the growing significance of the elderly population is already being felt, in others concentrations of younger people are having to maintain family links over large distances. Where subfertility or labour migration have a history, subgroups of families have long been having to make adjustments to age-structure imbalances at the local level. Understanding how families and communities respond to

ageing, and identifying those elders who are most vulnerable, necessitates an approach that can get beneath the national or even regional picture and examine demographic change in its local social, cultural and economic context.

Do data exist to permit such an approach? Like other countries with a nationalist agenda, Indonesia has not escaped the ‘avalanche of numbers’ that Kreager et al. (2011) talk about: decennial population censuses go back, with some interruptions, to the Dutch era.ⁱ These censuses are supplemented by intercensal surveys (SUPAS) and randomised household surveys, most notably the annual National Socio-economic Survey (SUSENAS) and the Indonesian Family Life Survey (IFLS), conducted by Rand Corporation since 1993. While the latter explicitly focuses on familial, economic and demographic processes and relations, it does not allow meaningful breakdown of ageing-related data below the provincial level due to inadequate sample sizes. This means important heterogeneity at a more local level cannot be captured. Like most surveys, the IFLS treats households as the relevant unit of analysis. The critical literature on households is huge (e.g. most recently Randall, Coast et al. 2011). Three points that are particularly germane to the Indonesian setting may briefly be made: 1) There exists significant heterogeneity within household types in terms of underlying resource flows; these are inadequately captured by variables on intra-household exchanges. Thus multigenerational coresidential arrangements may cover net downward flows of support from old to young, upward flows, balanced flows or even minimal flows between the generations (Beard and Kunharibowo 2001; Schröder-Butterfill 2004; Kreager and Schröder-Butterfill 2008). 2) Households in Indonesia are characterised by immense fluidity as manifested in almost constant change in composition. Whole nuclear family units are temporarily incorporated in response to a crisis; elders circulate between the households of different offspring; youngsters join the households of relatives better placed vis-à-vis schools or employment; members depart on migration. In our East Javanese study community, Kidul, more than a quarter of households (27.8%) experienced a change in household composition over a period of 18 months. The case of widow Sum, detailed below, is merely an extreme instance of residential instability. 3) Households simply do not capture all or even the most significant flows of resources: they are not the relevant units for understanding old-age support. This fact becomes most apparent when considering households (approximately 1 in 10) where consumption exceeds income and for which survival depends on resource flows into the household from non-resident family members or charity (cf. case of Siyati, below). In short, even arriving at realistic assessments of socio-economic position requires consideration of wider networks. Existing surveys, with their insistence on random sampling, pluck households out of their contexts and therefore make study of networks impossible.

Methodology of ‘Ageing in Indonesia’

Since existing surveys are both not fine grained enough – in virtue of aggregating to units well above the local community – and too fine grained – in virtue of disaggregating to households disconnected from others and from wider structures – an attempt to capture the subpopulations of relevance requires a different methodological tack. *Ageing in Indonesia*, a project funded by the Wellcome Trust between 1999 and 2006 and directed

by Philip Kreager, took a comparative, longitudinal and mixed-method approach to understanding old-age vulnerability and support.ⁱⁱ In three rural communities selected to capture areas with progressive ageing profiles and some of Indonesia's ethnic diversity, we conducted in-depth ethnographic field research of 12 months' duration. This involved semi-structured interviews with almost all resident elders, followed by repeat interviews, life history interviews, observations, kin mapping and interviews with family members among a subset of elders. Interviews were also conducted with key informants, such as heads of village and of neighbourhoods, health professionals, and mosque and temple leaders. Towards the end of fieldwork two randomised household surveys were conducted in each community, one on health and health care use, the other on household economy and interhousehold exchanges. Five years on the communities were re-visited for qualitative follow-up and a second round of survey. Table A (in Appendix) provides sample sizes for the different study components and locations and Table 2 indicative detail about the three communities studied. The material presented in this paper relies most heavily on data from Kidul (East Java), where I conducted doctoral and post-doctoral field research in 1999-2000 and 2004-05.

Table 2: Characterising the three research communities

	Kidul	Citengah	Koto Kayo
District and Province	Malang, East Java	Sumedang, West Java	Tanah Datar, West Sumatra
Main ethnic group	Javanese	Sundanese	Minangkabau
Family system	nuclear and bilateral	nuclear and bilateral	extended and matrilineal
Population aged sixty and over	10.6%	9.8%	14%
Elders' children no longer resident in the village	46%	44%	75%
Elders who are childless	25.7%	6.9%	7.4%
Households owning rice land	13%	55%	66%
Work force employed in...			
agriculture	15%	65%	43%
trade	25%	12%	38%
civil service	10%	5%	7%
other occupations	50%	18%	12%
Elderly households in receipt of a pension	20%	31%	3%

Narrowing the Focus to Communities

Indonesian village communities are populations of sociological significance to their members. The communities we studied showed clear geographic boundaries, hierarchical segmentation into hamlets and neighbourhoods, and integration under one village leadership and administration. Villagers professed a good degree of collective identity, for example contrasting their village with adjacent but less economically developed or more corrupt villages. Village identity finds its most obvious expression in the West Sumatran Minangkabau community where labour outmigration (*rantau*) has a long tradition (Kato 1982; Indrizal, Kreager et al. 2009). Here major migration destinations (e.g. Jakarta, Bandung) have seen the emergence of migrant associations on the basis of village of origin; these associations serve as important vehicles for mobilising support for village projects (Indrizal 2004).

Migration – significant in all three communities (see Table 2) – underlines the fact that villages are open populations. It also identifies a first important type of local subpopulation, namely on the basis of origin. Villagers are astute at differentiating individuals who can trace back to original founding families and incomers (who may have arrived as far back as the 1940s). Incomers are hardly a small minority; in Kidul, for example, only just over half (54%) of older people had been born in Kidul, although many had moved in from surrounding villages upon marriage or in search of a livelihood. In Koto Kayo, where village endogamy is preferred, about a quarter (23%) of the population are classed as incomers (*pendatang*), many of whom arrived in the post-Independence decade. Incomer status can leave some villagers with very small local kin networks (see Lubis's network, below). Moreover, in all three communities in-migration resulted in a distinct spatially concentrated and less socially integrated subpopulation. In the case of Kidul, a particular hamlet, separated by a river from the rest of the village, had been founded by Madurese migrants early in the 20th century. Inhabitants of this hamlet are characterised as being “less refined” (*kurang halus*). The hamlet is economically less well off, more heavily based on agriculture, and more closely committed to traditional cultural practices, such as Javanese dance and mysticism. In Citengah an equivalent hamlet of incomers has built up around the village's upland tea plantations, while in Koto Kayo the incomers (typically from poorer parts of West Sumatra) form a distinct disadvantaged subpopulation of agricultural labourers, concentrated in a particular hamlet, who work for villagers away on labour migration. As the local economy of Koto Kayo is heavily based on agriculture (Table 2), yet rice lands are held communally by the matriline, there is no scope for incomers to acquire land and thereby improve their lot. In this community, where lineage endogamy is preferred, intermarriage with incomers is virtually non-existent and incomers tend to be excluded from charitable support sent by migrants and distributed by the local mosque. Clearly subpopulations on the basis of migration status overlap non-randomly with socio-economic subpopulations, to which we now turn.

Population Composition: Socio-economic Strata

An important step towards understanding vulnerability in old age is an appreciation of the material realities within which old-age support is negotiated. Relative wealth not only shapes living conditions, consumption and access to health, but also has social ramifications by affecting the creation and maintenance of the networks on which people rely for support.

Although Indonesia has witnessed impressive economic growth since the 1970s, studies of rural Indonesia point to growing socio-economic inequalities. Under the New Order regime (1966-98) the better-off and political elite in villages benefited from government subsidies and loans. Entry into the civil service became a profitable strategy of advancement for the educated young and contributed further to social and economic differentiation (Cederroth 1995; Barnes 2004). Aside from the distinction between landholders and landless (which in places like Kidul is of waning significance, see Table 2), there are now sharper divisions in terms of access to work and income security (Hart 1986). Women, the elderly and the poor have fared particularly badly under exclusionary labour practices, such as the replacement of sharecropping with the selling of standing crops (White and Wiradi 1989; Hüsken 2001; Breman and Wiradi 2002).

Yet despite the wide and widening economic cleavages, an explicit class structure or consciousness is lacking. Village hierarchies are full of subtleties and tensions: differences in wealth and status are on the one hand real and recognised, on the other strenuously played down (Beatty 2005). Different economic positions do not translate into distinct groups or occupations, nor do they segregate into neighbourhoods (with the exception of the incomer hamlets referred to above). While the better-off may strive to maintain or improve their position through strategic marriages, and unions across economic extremes are rare, rural Java is not characterised by homogamy or other pronounced forms of social closure (White and Schweizer 1998). Taste, dress, linguistic etiquette show gradients between the richest and poorest in a village, but all villagers share in a broad set of values or *ethos*. Moreover, there is considerable transience in people's economic situation, such that a person can go from 'poor' to 'rich' and back over a lifecourse. Economic descent is an ever-present threat that increases with age, declining ability to work and—for women—widowhood or divorce. This fluidity raises the challenge of empirically capturing economic heterogeneity and identifying economic subgroups without reifying these groupings and treating them as fixed categories or closed populations. Local observation has to form the starting point. People at both ends of the extreme are most readily distinguished. At the top are a group of rich families (*kaya* or Stratum I), at the bottom families surviving either on an extremely uncertain economic base or on charity. Rather than being called poor (*miskin*), which would be derogatory, they are referred to as being *kurang mampu* (less 'capable' or wealthy; Stratum IV). Distinctions within the mass of families in the middle are less clearly articulated. The largest group of villagers manage on a daily basis without support from others, but they are unable to accumulate wealth or guard against major crises. These villagers refer to their economies as *cukup-cukupan* ('just enough', Stratum III), which may be translated as 'getting by', 'sufficing' or 'ticking over'. Some of the middle-range households are doing slightly better than getting by: they lead secure existences, generate

surplus, but lack the ostentation of the rich. No specific term was used to refer to these, but people in this group often described their situation as *lumayan* (moderate, ‘not bad’, Stratum II). None of these four groupings are sharply delineated, as underlined by the fact that there was occasional disagreement between informants’ evaluations of a particular family’s position.

The informal, commonly expressed status distinctions provided a base for developing a model of social structure in our study communities. By combining household survey data on assets, income, consumption, savings and the like with knowledge of ‘qualitative’ status hierarchies in the community, it became possible to assign households to one of four groupings. Table 3 shows their distribution in the three villages. The following paragraphs briefly describe the opportunities and constraints underlying this distribution.

Table 3: Distribution of households by economic strata in the three communities, 2000.

	I	II	III	IV	N
Kidul	16.0	29.2	43.4	11.3	106
Citengah	10.9	30.7	49.5	8.9	101
Koto Kayo	8.2	36.7	30.6	24.5	98

Source: Household survey data 2000.

Stratum I: The rich (kaya)

The small group of rich households, comprising between 8 and 16 percent of households in the three communities, includes rich landowners, higher ranking civil servants, members of the armed forces, owners of successful businesses or large shops. Increasing numbers of rich households are able to educate their children to university level. The rich enjoy a high degree of welfare security: they are either privileged in having guaranteed regular incomes or own valuable sellable assets (e.g. agricultural land), or both. A good measure of their security is that they can afford hospital treatment in the case of serious illness. Rich villagers are expected to contribute generously both to their wider kin networks, dispensing patronage and occasional assistance to poorer members, and to village charity.

Stratum II: The comfortably-off (lumayan)

The comfortably-off, making up around one-third of households, comprise households with modest land-holdings, recipients of small pensions, lower-ranking civil servants, medium-sized business people, shop-keepers and well-paid factory and transport workers. High levels of economic mobility across the lifecourse mean that Stratum II includes a sizeable transient membership. For example, a number of elderly people who used to be rich were merely comfortably-off when surveyed in 2000. As the case studies, below, will show, downward economic pressure is often exerted by the handing-over of wealth and assets to the younger generation. Stratum II also recruits by upward mobility, especially thanks to young families enjoying dual incomes from factory, transport or

construction work. Remittances from international labour migration further fuel the size of this group.

Stratum III: The 'just-enoughs' (cukupan)

In 2000, the largest socio-economic grouping in the two Javanese villages was made up of the *cukupan*.ⁱⁱⁱ Members of this group are typically involved in steady agricultural labour, small-scale trade, work in small factories, transportation, construction work, or food production. Also included are elderly people who no longer work, but either have small assets to fall back on, or receive reliable extra-household support from relatives or rich patrons. Typically, *cukupan* households find it difficult, if not impossible, to accumulate wealth; most income goes to covering the costs of living and participating in community life. Lack of capital accumulation leaves households highly vulnerable to economic crises and descent into outright poverty, unless wider networks intervene to prevent this. A key distinction between Strata II and III is receipt of charity and subsidies (especially subsidised rice): among the *cukupan* two-thirds are entitled to buying subsidised rice and almost half receive *zakat*. Yet far from just depending on village assistance, most *cukupan* villagers actively contribute to local social and ritual life.

Stratum IV: The poor (kurang mampu)

Around one in ten households in the Javanese communities are poor; in the Sumatran village their ranks are swelled by the incomers (*pendatang*). Life-histories revealed about half to be life-long poor, the remainder have descended into poverty. Often it is demographic reasons—widowhood or childlessness—or health crises which precipitate these declines, although gambling, poor business acumen and excessive generosity towards offspring played the dominant role in a few cases. None of the households own productive assets or receive a pension, indeed, only slightly more than half own the house they live in. Members of *poor* households typically engage in low-paid work, like small-scale sale of food, collection and sale of firewood or herbs, or making traditional medicine. Some describe their work as *seadanya* ('whatever there is'). Only one-quarter of poor household heads have work most days of the week, a quarter are too old or ill to work at all. Household income typically matches or exceeds expenditure on food, making these households unable to survive without at least occasional extra-household support. With one exception (a recent migrant to the village), all poor households in Kidul received both *zakat* and subsidised rice. The vast majority only ever consume meat on ritual occasions; unless helped by better-off network members, they are unable to afford medical treatment. Despite their poverty, the poor nonetheless attempt some degree of participation in village social life (e.g. by conducting small rituals at the appropriate time). Rather than investing in short-term consumption, many prioritise continued participation in local exchange networks, which may afford them support in times of need.

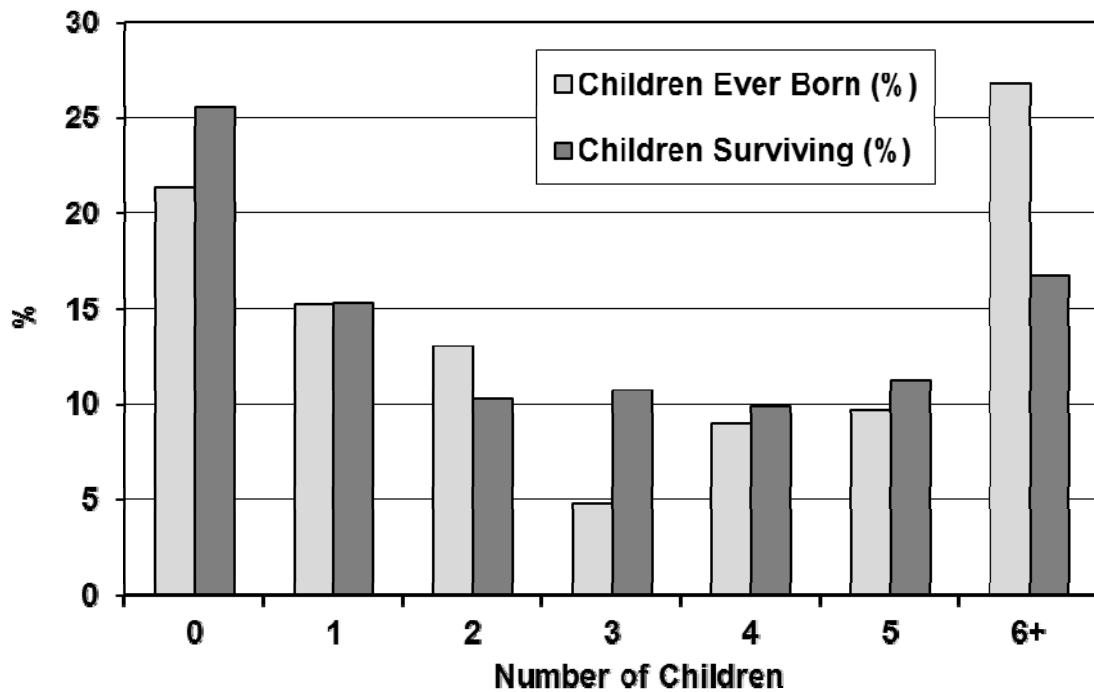
Social stratification and its material and social entailments have been described in some detail, because socio-economic position has an obvious bearing on older people's vulnerability. The extent of an elderly person's control over material resources affects diet, housing quality and access to health care. In a thoroughly monetized economy as the rural Indonesian, access to money is necessary for social participation: attendance at

weddings or funerals, the hosting of life-cycle rituals, even religious and social meetings require money (Nugroho 1996; Lont 2002). Yet as consideration of Sum's and Siyati's situation below will reveal, vulnerability or security cannot be deduced purely from elders' household-economic status. Strata are significant, but they are not the units of population relevant for understanding outcomes in later life. The same levels of material well-being do not necessarily translate into equal sets of opportunities and constraints, because households are embedded in networks of exchange linking households and generations. Importantly, these networks do not overlap closely with the economic strata described: rural Indonesian kin and social networks are not economically homogenous, they are *not* social classes writ small. Instead, networks cut across economic strata, although their central tendency may lie in one or another broad economic zone, and this tendency may shift over time. Economic gradients within networks may be exploited for mutual gain, providing opportunities for patronage or supportive intervention, but equally they may represent barriers to interaction and be used to delimit the effective network. These dynamics will be explored below. Beforehand it is necessary to examine another key source of local population heterogeneity which is shaped by economic position and tempered by the operation of networks, namely the availability of children.

Population Composition: The Distribution of Children

In terms of the cohorts we studied, only the youngest elders, i.e. those born around 1940 and aged 60 when we first conducted fieldwork, will have been exposed to modern family planning, which was first implemented on Java in the early 1970s (Niehof and Lubis 2003). All others would have completed childbearing largely or entirely by the 1970s. We therefore expected completed family sizes among respondents aged over 65 to be high, in the region of five to six children on average and thus in line with the reported TFR of 5.5 for Indonesia prior to fertility transition. In fact, average completed family size among older women in Kidul was only 3.6, and we found immense diversity in reproductive outcomes, with large minorities at either extreme of the spectrum. Figure 1 summarises the evidence for Kidul, the East Javanese community.

Figure 1: Percentage of Elderly Women in Kidul by Number of Children Ever Born and Number of Children Surviving



Source: Fieldwork data 1999-2000. N=206.

The picture suggested by Figure 1 is of a strikingly u-shaped, polarised distribution of children. One in five women stated that they had never had a child,^{iv} by contrast, more than one quarter had given birth to six or more children. One quarter of elders do not have a surviving child; half of the women have zero, one or two children, the other half three or more.^v

We were later able to locate this striking demographic picture within a broader historical and regional pattern and confirm East Java as having experienced pronounced periods of suboptimal fertility. The impression given by national and provincial estimates of completed fertility averaging between 4 and 6 births per woman disguises the presence of substantial disadvantaged minorities which only emerge when fertility is disaggregated. It is this variation, not central tendency, which is indicative for understanding old-age support. In the 1940s fertility declined and mortality increased, leaving the cohort experiencing its peak childbearing years during the 1940s particularly affected. The reasons for the demographic crisis in the 1930s and 40s are fairly well established. Major disruptions of economy and society, starting with the world depression and exacerbated during the Japanese occupation of 1942-45 and the ensuing war of independence, brought deteriorating health and dietary conditions (Schröder-Butterfill and Kreager 2005). These crises were particularly severe on Java, and led to sharp increases in infant and child deaths (Singarimbun and Hull 1977; Hugo, Hull et al. 1987:118). Marriage and childbearing also suffered. Not all individuals were affected in the same way. Our data

confirm a range of adverse correlations between economic position and demographic outcomes, with the poor more likely to experience divorce and multiple marriages, more likely to lose a spouse to early mortality, and more likely to experience the death of a child. Strikingly, poorer women also experienced lower fertility, an observation census and survey evidence from other parts of Java confirm (Hull 1976; Hull and Hull 1977; Singarimbun and Hull 1977; Gooszen 1980).^{vi} The reasons for this are not difficult to reconstruct, given the proximate determinants that reduce childbearing in a context of relative poverty, namely divorce, widowhood, malnutrition and sexually transmitted disease as a result of prostitution or multiple marriages.

The implications of a socio-economic patterning of reproduction are clearly reflected in the evidence from all three study communities, even though East Java has by far the highest levels of childlessness (see Table 4).

Table 4: Availability of surviving children to elderly people by membership to upper and lower two economic strata

	Kidul		Citengah		Koto Kayo	
	Upper	Lower	Upper	Lower	Upper	Lower
No children	18.8	32.1	5.0	8.5	5.7	10.7
One or two children	18.8	32.1	0	19.2	15.1	21.4
Three or four children	20.9	19.8	17.5	34.0	24.5	25.0
Five or more children	41.7	16.0	77.5	38.3	54.9	42.8
N=	96	106	40	47	53	28

Source: Fieldwork data 1999-2000. For Kidul and Citengah the differences are significant ($\chi^2=22.2$, $p=0.008$ and $\chi^2=18.9$, $p=0.026$); for Koto Kayo they are not significant

Inadequate completed family sizes are not randomly distributed but concentrated among the economically marginal, and in turn they contribute to the persistence of inequalities. Poverty also makes ties to existing children more tenuous. Divorce or widowhood early in life forced many parents to leave their children to be raised by others, and this often weakened their children's sense of responsibility towards them. Similarly, the inability of poor parents to offer assets and an education to their offspring has made them more prone to leave the community and rarely return (Kreager 2006). Under certain circumstances these processes have led to parents becoming *de facto* childless. As parents have aged their lack of adult children to fall back on in a crisis has entrenched their material vulnerability and meant that even those elders with a favourable economic starting position face economic decline. The networks of Lubis and Rini, below, illustrate the insecurity and misery that a lack of children in old age can entail.

Of course environments in which a lack of children is commonplace engender the development of practices through which a more equitable distribution of children may be

achieved. Java is no exception in that informal adoption is widespread and acceptable. Kin networks are crucial vehicles for the redistribution of children, as it is typically the offspring of siblings, cousins or own children who become *anak angkat* ('raised' children). Thus wider networks can compensate for individual reproductive failure, assuming the network's demographic resources are adequate, and the moral and economic standing of the childless person sufficient to be entrusted with a child.^{vii}

If the impacts of family formation, mortality, *de facto* childlessness and alternative avenues to parenthood are considered together, it becomes possible to arrive at a preliminary classification of elders' net availability of children and thus a preliminary assessment of the size and composition of vulnerable subpopulations. These subsets then need placing in the context of their wider networks to examine the extent to which kinship and community ties may compensate for or exacerbate deficiencies in family networks. Table 5 provides this classification for Kidul. It distinguishes between those who are actually childless (i.e. those with neither own nor acquired children as well as those whose relations to all existing children have broken down), those who are child-poor (with only one or two surviving children, own or adopted), and those who are child-rich (with three or more children).

Table 5: Older people's family types by economic strata in Kidul

	I	II	III	IV	All
Actually childless	10.0	3.5	15.5	45.7	17.9
Child-poor	27.5	29.9	37.9	30.4	31.9
Child-rich	62.5	66.7	46.5	23.9	50.2
Total (N)	40	57	58	46	201

Source: Fieldwork data, 1999-2000.

The distribution of types among socio-economic groups is striking but hardly surprising. Less than one quarter of poor elders have a generous supply of children, almost half are actually childless. Only among the upper two strata large family sizes are in the majority. The economically poor and those 'poor in children' are not identical populations, and they each experience different challenges. Yet where the two types of poverty intersect it becomes possible to identify a subpopulation (comprising one third of all elders if we combine elders in strata III and IV who are childless or childpoor) facing significant vulnerability in later life. However, this preliminary classification, while giving a broad overview of the social and demographic structure of vulnerability and security in rural Indonesia, is inadequate. Wider networks beyond the nuclear family need to be brought into the equation, not least because the availability of children cannot be taken for granted.

The Nature of Networks in Rural Indonesia

The villagers we study are embedded in different, overlapping networks. For old age security immediate family members, wider kinship links and neighbours are most relevant, while religious institutions and networks, the village apparatus and in some

cases supra-local institutions also matter. This section briefly outlines Indonesian kinship and community relations and the values guiding the actions and interactions of villagers, as these are important for understanding the nature of people's networks. The wealth differences characterised above are relevant to this, not only because material realities shape network members' ability to provide assistance, but also because wealth and status differences influence the readiness with which network members approach each other. How interaction and support are negotiated depends on how membership is defined, what expectations adhere to different relationships, and what moral values motivate people's actions and interactions. As will become clear, the term *negotiation* is unusually apt in the Javanese context, because strong normative prescriptions governing intergenerational support—as found perhaps in Confucian systems of filial piety—are lacking, household constellations are nuclear and fluid, families individualistic, and kinship networks diffuse. This means that very little of intergenerational and inter-household exchanges may be explained in terms of obligations or duty (cf. Finch and Mason 1993). Instead, flows of support and network members' willingness to intervene rely on the quality of bonds and the reputations of the individuals involved.

Javanese kinship networks

Javanese families are not extended but nuclear. In this they differ from major family systems in Asia but resemble other Southeast Asian ethnicities (e.g. Malays, Sundanese, or Filipinos). Indeed, in organisation and sentiment, Javanese families are closer to Northern European families, although the 'nuclearity' of Javanese families is more relaxed (Hajnal 1982; Todd 1985; Goody 1996). Adult children are expected to set up independent households, but independence is not necessarily immediately upon marriage and under certain circumstances may never be achieved (Geertz 1961; Jay 1969:40). As in European nuclear family systems, net flows of intergenerational wealth and support over the lifecourse are unequivocally downward, from parents or grandparents to children and grandchildren, sometimes with disastrous consequences. Independence is considered ideal. Once reliance on others becomes necessary, assistance from children is preferred and often forthcoming. However, childlessness, outmigration and poverty among children make reliance on wider networks inevitable for many.

Different cultures have different notions about which kin have social significance, how kin should interact, and what roles and expectations attach to different degrees of relatedness (Skinner 1997). Among the matrilineal Minangkabau of West Sumatra, for example, a man will look first to his sister's children for support, rather than to his own, and relatives within the same matriline may be called on for assistance as a matter of course (Kato 1982; Indrizal, Kreager et al. 2009). Things are rather different among the Javanese. Kinship relations in Java are fairly devoid of prescriptive rules of engagement. Who counts, and may be counted on, depends more on social and geographic proximity and the history of interactions, than on clearly articulated obligations.

The Javanese and Sundanese have a bilateral (or 'cognatic') system of kinship reckoning (Geertz 1961; Jay 1969). Kin are traced through both parents, brothers and sisters, and male and female children. As a result, bilateral kinship systems, unlike lineal ones, do not

give rise to bounded groups, but to ego-centric networks of kin (or 'kindreds') sharing varying degrees of relatedness. Freeman, in his influential paper on cognatic kinship, writes:

“[B]y the very nature of its composition, the members of a kindred have no collective perception of unity, no persisting common objective and no leader or organization. A kindred, therefore, is not a group in the sociological sense of the term, but rather a category of cognates, a set of persons who have in common the characteristic that they are all related cognatically in varying degrees to the same person” (1961: 202).

In other words, Javanese kindreds are quintessential open, unbounded populations, they are networks, rather than groups. Two conclusions are generally drawn from this conceptualisation of bilateral kinship. Firstly, it is argued that wider kin play a very limited role in structuring social life, and that expectations of, and entitlements to, assistance among kin beyond the nuclear family are fairly limited. The second conclusion is that these systems give rise to an unbounded network of ties on which individuals can draw selectively to their advantage (Freeman 1961: 203; Geertz 1961: 25).

The basic parameters of kinship in Kidul differ little from the descriptions of bilateral kinship offered in the literature. Villagers recognise a wide range of bilateral kin. When probed they will distinguish between relatives on the basis of genealogical distance, although there are neither clear boundaries between close kin or distant kin, nor terms to denote such groups. A person's spouse (who is obviously not kin), children, parents and siblings form the core network. Outside this circle are grandparents and grandchildren, nephews and nieces, uncles, aunts and cousins, all loosely described as close kin (*saudara dekat*), but interaction with and knowledge about these relatives vary from case to case. Beyond these, people recognise more distant relatives (*masih saudara*). Differences between close and distant kin, and distant kin and non-kin are downplayed in public, but in reality genealogical, spatial and social proximity shape interactions. Where there are significant differences in wealth between kin (unless they are very close kin), contact will be avoided. For example, when I asked my elderly neighbour, who belongs to Stratum III, to identify her relatives in the village, she listed half a dozen names, but then added that so-and-so is “like not a relative at all, because he is rich”. Her day-to-day interactions are most intense with certain neighbours and with relatives who are, like her, not well-off. Javanese people are highly sensitive to status differences and feel awkward (*sungkan*) in the presence of social and economic superiors.^{viii} Poor villagers will avoid visiting the houses of rich kin lest they be accused of pandering for favours. The implications of these patterns of interaction are clear: while from a purely genealogical standpoint a person's kin network might be extensive, the effective network is limited by awareness of status differences. Not only is the effective network only a fraction of the actual kinship network, it often contains some distant kin, while omitting certain close kin. Those relatives best able to provide assistance may fall outside the range of effective kin because of patterns of avoidance. Meanwhile the resources of kin willing to help, and most readily approached for assistance, may well be very limited (Scott 1976: 28).

As among close kin, clear obligations among more distant kin are limited. The role of kin is certainly apparent during ritual events, when close and distant kin are expected to help with labour and materials. However, outside the ritual domain, obligations among kin are

fairly circumscribed and depend both on the closeness of the tie, and on who else exists in the network. Help among kin outside the nuclear family is normally confined to gifts of food, small sums of money, visits and practical help. Kin other than children are not expected to cover costly medical fees or make substantial monetary gifts. One elderly widow, whose only son experienced a bad accident, had to sell her house to cover his medical bills. When I asked her siblings, nephews and nieces whether they had contributed, they admitted freely that they had not. Such instances of non-involvement are neither atypical, nor do they draw critical comment. In this respect Kidul confirms what has been noted in the literature on Southeast Asia: sharp differences in economic status even among close relatives are accepted, and there is no expectation that better-off kin should try to equalise economic differences (Djamour 1959: 47; Scott 1976: 40). Wealthy kin may step in to prevent absolute destitution—not least to safeguard their own reputations—but they are not expected to substitute for missing or impotent children or spouses. This is manifest in the networks of Siyati, Jasman and Sunadi, below.

My account may seem to suggest that kinship networks beyond the immediate family are of modest significance in rural Java. This would be to forget the sizeable childless subpopulation of elders. Where customary sources of old-age support are lacking, wider kinship networks take on greater significance, and for childless villagers kin represent a resource of first resort. The best solution to childlessness is to (informally) adopt a child, and the preferred and most common source of adoptive children are one's relatives. Through the redistribution of children, kin networks are able to even out inequalities in reproductive outcomes. Kin may also be cast in the role of patron to a poorer relative. In the context of patronage, kin of widely differing social and economic statuses can interact and engage in mutually beneficial exchanges without upsetting Javanese sensitivities to hierarchy, and therefore without inducing a sense of awkwardness (*sungkan*) (Schröder-Butterfill 2004).

Wider network links

As we have seen, Indonesian villagers' networks are composed of ties to close and more distant kin, but these ties are sometimes curtailed by demographic contingencies, and they operate selectively on the basis of social and spatial proximity. Beyond kin there are a number of other important identities that make up people's networks. Most important of these for day-to-day life are links to neighbours and links to religious networks. Ties with neighbours function on a similar logic to kin ties. Interactions tend to be most intense with neighbours who live closest and are most similar in terms of economic status, generation and religious outlook. Among such neighbours interactions are likely to be intense, involving the exchange of food, gossip, assistance and loans. As noted earlier, the Indonesian villages we studied are not particularly segregated, and rich and poor households are often adjacent. This may result in minimal exchanges between households, or may over time develop into close but hierarchical relations where the better-off household engages the poorer household's labour in exchange for money, food and other assistance. Generally speaking neighbours' supportive role is inversely related to the strength and size of a person's kinship network, with villagers who have adequate local kin networks avoiding heavy reliance on neighbours.

Religious life, and the community and institutions that accompany it, are important to most Indonesian villagers, not least because religious charity can be significant (Benda-Beckmann 1988; Schröder-Butterfill 2006). The West Sumatran and West Javanese study communities were entirely Muslim, and religious diversity confined to degrees of religious zeal. In Kidul the religious landscape is more heterogeneous and shifting, and social interactions consequently more likely to be shaped by religious affiliation. Until the mid-1960s many villagers in East Java identified themselves as following Javanese religion (*agami jawi* or *kejawen*) which combines Javanese beliefs and practices with Muslim and Hindu elements (Geertz 1960; Beatty 1999). Following the attempted coup and ensuing communist massacre of the mid-1960s, President Suharto made it compulsory for every Indonesian citizen to adhere to one of five world religions. Many people in Kidul opted for Hinduism, in part because the then-village head became Hindu. Kidul became a local Hindu stronghold, consolidated in the 1970s by the building of a temple and later a Hindu school. In the 1970s and early 1980s, 40-50 percent of villagers were Hindu. However, the late 1980s and 1990s saw a steep decline in the proportions professing Hinduism. While reflecting broader patterns of religious change across parts of Java, in Kidul the shift can be tied specifically to the arrival of a Muslim missionary couple in 1989. They targeted women, children and Hindus and toiled to improve the moral and social fabric of the community by condemning drinking, gambling and prostitution, and by establishing an outstanding, well-resourced and affordable school in the village. Their approach is a familiar one across Indonesia, namely of combining religious instruction and conversion with the provision of high quality secular education.

Within Islam a growing number of villagers are becoming visibly devout followers, and every year there are some who make the costly but rewarding pilgrimage to Mecca. Those who either refrain from religious participation or who emphasise mystical, Javanese elements within 'Javanese Islam' are becoming fewer and older. A further significant recent trend has been the emergence of a fundamentalist stream of Islam within the community, numbering approximately 200 members by 2005 and recruiting both by conversion and in-migration. Members of LDII (*Lembaga Dakwah Islam Indonesia*) represent a network most closely approximating a 'group' within Kidul's social landscape, as they emphasise their distinctiveness, worship in a separate mosque, intermarry, refuse to participate in practices which are not in line with Islam proper, and contravene important rural Javanese values such as easy interaction among the sexes, relaxed attitudes to religious dress, and the use of family planning. Despite other villagers' weariness towards them, their strong *ethos* of mutual help and welfare provision towards members in misfortune was repeatedly commended.

The religious changes Kidul has undergone over the past decades are representative of similar shifts occurring across Indonesia: a move away from syncretic practices and beliefs towards a 'purer' interpretation of Islam, a decline in the importance of Hinduism compared with Islam and Christianity, and association of devout Islam with modernity, education and progress (Hefner 2000; Rinaldo 2008). (The latter point cannot be said to apply to fundamentalist Islamic streams which promote gender inequality and wish to curtail reproductive choice.) Although differences in religious adherence continue to be

downplayed and are not major determinants of social interaction in Kidul,^{ix,x} the impact of religious changes on the local population's religious composition has hardly been subtle. By 2005 only 10 percent of Kidul's population was not Muslim and among children under age 15 it was only 6 percent, while among the elderly almost a quarter still remain Hindu. Over time Hinduism has come to be associated with older, more traditional, less dynamic and less outward looking elements within the village, and this is clearly reflected in the socio-economic profile (see Table 6).

Table 6: Distribution of households in Kidul, 2000, by strata and religion

	1	2	3	4	N
Muslim	17.6	33.0	41.8	7.7	91
Non-Muslim*	5.9	5.9	52.9	35.3	15

Source: Household survey 2000. *Note:* * All but one of these are Hindu.

Households headed by a Hindu are more than four times more likely to be poor than households headed by a Muslim. There are very few notable, wealthy Hindu families left in Kidul, a fact which finds reflection in the relative dynamics of different networks described below. Long gone are the days in which a Hindu could become village head. That said, as the example of the present head shows, having a Hindu past is no bar to political success. For the time being, at least, ability to interact easily with, and gain the support of, Hindus and Muslims of *various* persuasions, remains a more promising political strategy in Kidul than association with one of the more orthodox strands of Islam found in the community.

This last point brings into the picture village leadership and administration as a potential component of people's networks. Membership of the village apparatus has always been an important avenue to influence and privilege. For example, village office comes with *usufruct* of prime agricultural land. Under the New Order regime village heads were tasked with implementing national diktat and rewarded generously for loyalty. Since democratisation and decentralisation village leaders have become more autonomous and are able to raise and control own revenue. Importantly, it is the responsibility of local government to allocate subsidies, grants and other welfare measures (e.g. the recently introduced social health insurance), making good links with village leadership potentially significant.

Two elderly women

The basic parameters of villagers' networks have been described, as has the changing socio-religious context. But how do these act themselves out in the lived experiences of elderly villagers? The cases of two elderly women, Sum and Siyati, will illustrate this. Although Sum and Siyati started from broadly similar positions in terms of background, wealth, and family building, they find themselves in very different situations at the end of their lives. Sum lives out her life in pitiful destitution and neglect, while Siyati, economic decline notwithstanding, is secure and respected.

Sum, born *circa* 1915, was descended from one of Kidul's wealthy and respected founding families. Despite making three good marriages (to a Javanese member of the Dutch colonial army, to a railway official, and to a village official), she only succeeded in having two children, a son who died in adulthood and a daughter, now a divorcée in her sixties. Sum used to run a canteen outside a busy factory and was renowned as a traditional healer. Her third husband left her with sizeable plots of land in the village. When I first met her in 1999, she was living in a five generation household with her widowed daughter, married granddaughter, great-granddaughter and great-great-granddaughters. Her three widowed sisters lived in the vicinity. Soon after, however, the granddaughter, to whom Sum had sold her house under very favourable terms a few years earlier, ran into debt and sold the house she shared with her mother and grandmother. The granddaughter departed on labour migration, and Sum and her daughter became tolerated guests in the house of Sum's recently deceased sister. That house, too, was sold, and the two elderly women moved into a hastily erected bamboo shack on a tiny plot of land Sum still owned. By 2004, Sum and her daughter had moved again, this time into a lean-to built onto the end of the house of her great-granddaughter, who had in the meantime become the junior wife of a wealthy regional politician. Sum survived on what little her daughter could make selling second-hand clothes, on occasional gifts from her kin and on charity from neighbours and the mosque. This did not stretch to cover health care, and she died in 2005 after a long period of poor health.

Sum's sorry end was the culmination of a downward trajectory of wealth and status dating from the late 1970s. Following the death of her third husband—a man still remembered for his influence and wealth—Sum repeatedly came under pressure to sell land to cover family needs until none was left: a great-grandchild was hospitalised, circumcision and wedding ceremonies needed paying for, and capital was required to enable her granddaughter to embark on labour migration to Saudi Arabia. Relinquishing ownership of her house proved catastrophic when her granddaughter reneged on her promise to keep Sum. Significant flows of intergenerational wealth to children and grandchildren are common in East Java, and it is particularly elderly widows or divorcées who find it hard to resist expectations from the younger generation (Schröder-Butterfill 2004).

A contrasting case is provided by Siyati, a divorcée who is about 15 years younger than Sum. Siyati has a son from her first marriage, who was raised by her childless older brother, and two sons and a daughter from her third marriage to a member of the Indonesian army. For health reasons Siyati gave up working as a food-seller some years ago. In old age Siyati has been subject to similar pressures as Sum. She, too, divided up her land among her children, helped her daughter and son-in-law with building a house and setting up a business, and bequeathed her house to her daughter, although she continues living in it. Unlike Sum, however, Siyati has been able to resist her daughter's demands that the house be sold and Siyati move in with her daughter. Instead, Siyati chooses to live alone but in close proximity to her daughter and three siblings. In her opposition to giving up her house she is supported by her sons and her brother, Kayat, who is an influential 'head of neighbourhood' (*ketua RW*). Her resistance on the issue of the house has strained relationships with her daughter, such that on occasion the two were not on speaking terms. For many years most of Siyati's day-to-day material support derived from her first-born son, a wealthy retired lieutenant turned businessman, despite him having become her oldest brother's adopted son. His sudden death in 2003 deprived Siyati of her main source of support, but the gap was quickly filled by greater involvement of her two other sons, both of whom do not live in the village, support from her siblings, and gifts from other kin. Thus, although Siyati, like Sum, has no income of her own, she gets by and is assured of assistance with health-related expenses when they arise.

Both women and their families are located within the same context of social, political and economic change, yet their outcomes in old age are poles apart. The most immediate

source of vulnerability for both stems from dependencies and expectations for support in the younger generations. These expectations are not new or unusual but reflect long-standing patterns of gendered and generational access to power and resources. Household composition and household economy cannot explain the women's differing fates. Both women have no income of their own, but it is Sum, living with working-age family members, who is vulnerable, while Siyati, living alone, is secure. Clearly, identities beyond the household are crucial: the women's outcomes can only be understood by placing them in the context of their wider networks and tracing their and their network's trajectories over time. This reveals that Sum's and Siyati's networks occupy starkly different positions vis-à-vis local sites of power, wealth and status, with direct implications for the elderly women's wellbeing and security.

Diagram 1 (at end of Discussion Paper) visualises Sum's wider kinship network. (A lot of the detail in Generations 2, 3, 4 and 5 has been omitted.) Sum is the oldest of six siblings to survive to adulthood. Her sister, N., had one child which died. She resorted to adopting a son from outside the kindred. The next sister, R., experienced the same fate; she adopted a son and daughter from her husbands' kindred. K., the fourth sister, has one son, who lives locally but is very unsuccessful, and additionally raised a cousin's son, who has done well for himself and spent most of his working life on Sumatra. Sum's brother, P., with three children, produced the largest family, but died early. The youngest of the siblings, S., migrated to Kalimantan and died when his only daughter was young. In total, despite marrying at least once, the six siblings have produced only nine offspring between them, of which only six have survived to adulthood. This gives an average completed family size of 1—not even enough for Sum's generation to replace itself. Clearly, the demographic pressures outlined in the section above, which operated particularly on the cohort of women experiencing their peak childbearing years in the 1930s and 40s, have affected this particular set of siblings particularly heavily. I encountered several other sibling sets where more than one in three elders remained childless. Such random variation matters because it affects the supply of children for redistribution within a network. Given Sum's and Sum's sisters' wealth and standing when they were younger, they might have been expected to have acquired more children through informal adoption, had the preferred supply of such children (relatives via the mother) not been so constrained. The second generation has hardly fared better than the first. On average, if we include adopted children, the ten members of the second generation have had 2.2 children. Family planning will, of course, have contributed to the curtailment of fertility among the younger members of that generation.

A striking contrast is provided by the kinship network of Siyati, shown in Diagram 2 (at end of Discussion Paper; again detail in lower generations has been omitted). She, too, is one of six siblings who cover a slightly later range of birth cohorts than Sum and her siblings (*circa* 1925 to 1940). Like Sum, Siyati has descended from an influential village founding family. All siblings made good marriages, some of them several. Only the oldest of the six siblings remained childless, and he was able to adopt two children from among his siblings. Siyati's second oldest brother had eight children from three marriages, Siyati herself had four children. A younger brother, now deceased, had seven children, her surviving sister has four and her youngest brother nine children, of whom

two have died. Together this set of six elderly siblings has produced 32 surviving offspring, yielding an average completed family size of 5.3. This is above the average for that broad cohort for East Java and more than three times greater than that of Sum and her siblings. In the second generation no-one has remained childless, but with family planning adopted by most members, the average family size is just over two.

Let me use these two similar yet contrasting cases to illustrate the importance of networks in trying to understand vulnerability and security in old age. Networks matter both as sources of material and practical support, and as safeguards of vulnerable members' interests. Sum receives support from only a small handful of kin (chiefly her poor daughter, siblings and great-granddaughter), none of it significant, while Siyati reports regular assistance from many of her relatives as well as from her sons. Siyati's network is able to cope with the death of her main source of support and at best intermittent support from her daughter, while with Sum there is a steady contraction of supportive network and a dramatic worsening of her material situation. In Siyati's case, influential network members (notably her brother and army son) intervened to prevent her from relinquishing her house; the same son had also, a few years earlier, negotiated the redistribution among all elderly siblings of the agricultural land which Siyati's oldest brother had inherited alone. By contrast, Sum was twice made homeless because it was in the self-interest of the younger generation, with no-one speaking up. When pressed on the issue, relatives argued that it was an 'internal matter' between Sum and her granddaughter.

The reasons for these different network responses have to be sought in the differential composition, wealth and reputation of the two networks. The most immediate difference between the two networks is, of course, their size. Sum is at a clear disadvantage because her network contains far fewer working-age members who could potentially lend support, and the departure of her granddaughter further depletes the circle of kin she might turn to. Siyati's kin network is vast by comparison, providing a much greater pool of potential supporters. However, network size alone cannot fully account for Sum's vulnerability and Siyati's relative security. Even Sum has some young family members to hand who might be expected to help, not least in the light of her previous generosity, while Siyati enjoys support from individuals who could easily avoid assisting her, including her son who was raised by her brother and her sons living away from the community. To understand this it is necessary to place the networks within the shifting status hierarchies of the community. Sum's network is not only demographically, but also socially and economically on the decline. Importantly, it lacks the presence of influential men: since the death of Sum's husband in 1979 the wider family has not produced any significant figures in the community. The oldest generation consists entirely of women, and the men in the younger generations are either unsuccessful or absent. Significantly, the only member linking Sum's and Siyati's network directly (one of Sum's nephews who has married Siyati's niece) expressly aligns himself with his wife's family rather than his own. A number of sexual scandals has damaged the reputation of what had been, in Sum's prime, a leading village family. By the end of her life, Sum was viewed with pity (*kasihan*), rather than respect. She had come to epitomise a way of life no longer aspired to, clad in traditional *sarong*, an erstwhile Javanese healer and follower of Hindu-Javanese mysticism. Without a 'good family name' to safeguard, any members of Sum's

wider network able to intervene have felt little inclination to do so. Moreover, the open disrespect in which Sum is held by her family makes it difficult for the wider community to continue to hold her in esteem.

Matters are quite different in Siyati's network. Not only is her wider family demographically in ascendancy, it is economically and politically well connected. There is no shortage of influential and ambitious men (retired army members and civil servants, figures in local administration) in whose interest it is to protect the good name of the wider family. Ensuring a basic standard of living among elderly members is part of that reputation. Both families owned land to start off with, and farming and food trade initially formed the economic mainstay of both. However, in the case of Sum's family, land was gradually sold off in response to crises, while in Siyati's family it was for many decades controlled entirely by Siyati's oldest brother. This forced members of Siyati's network to seek alternative economic niches, and in recent years this has placed them in a strategic position vis-à-vis Indonesia's shifting sources of economic, political and social status. By investing in education early on, members of Siyati's kindred gained entry to employment in urban-based formal sectors (army, civil service, factory work) and consolidated their family's economic advantage by providing other kin with access to desirable jobs—nepotism in the labour force was alive and well under Soeharto. Positions of influence in village social and political life have followed from the experience gained in the urban economy and wider Indonesian bureaucracy. For example, Siyati's brother and wife are responsible for allocating the government rice and health subsidies. With the growing importance since the late 1980s of Islam as a socio-political force in East Java, it comes as no surprise that the vast majority of Siyati's kin are highly visible followers of Islam. This adds to the esteem in which they are held and ensures the elderly network members' inclusion in the distribution of religious charity.

The two case studies provide illustrations of the shortcomings of existing methodological approaches to population and population processes. Sum's and Siyati's situations are not explicable from their individual or household characteristics. Instead, it has been necessary to place them in the context of their wider networks and communities. Viewed in isolation, Siyati and Sum have more in common than divides them, although Siyati is child-rich where Sum is child-poor. However, the contrast between their social networks could hardly be starker, and the implications for the two elderly women's welfare follow directly from this contrast.

Network Types and Elders Within Them

Let me try and summarise the key variables according to which Sum's and Siyati's networks may be differentiated, so that other networks can then be brought into the picture and aligned or contrasted with these networks. Dimensions of apparent importance include: reproductive success, size of local adult kinship network, broad economic position of network, religious affiliation and reputation, the availability of persons of influence within the network, links to key community institutions, and broad livelihood strategy (e.g. in terms of asset ownership, occupational pattern and diversity, investment in education and migration). Obviously, any characterisation of an entire

network along these dimensions has to be crude, as there is immense variation within any given network. Moreover, no two networks are alike. The aim is to try and identify a limited number of broad and recurrent network types and derive hypotheses concerning their treatment of elders. The socio-economic and religious patterns and shifts outlined earlier in the paper help in this endeavour as they provide dimensions along which networks may be expected to align themselves differentially. Table 7 (at the end of the Discussion Paper) summarises the key characteristics of seven networks in Kidul; these networks are described briefly below.

Haji Lina's network may be glossed as an **elite network** which has long held positions of privilege and power and has succeeded in maintaining that position by adapting to change. Haji Lina's father was village head under the Dutch and as such acquired considerable land holdings. Lina's brother enjoyed an unusually good education for his times and was recruited into the Indonesian army. Lina's husband was also in the army; after retirement he built up a successful local business. The couple remained childless but was given four children to raise from within Lina's kinship network; these children's loyalty to Lina was never in question. Education levels in the second generation have been high, including instances of university education. This has resulted in many of the younger generation leaving Kidul and finding work in the formal sector and civil service. Less economically successful network members have remained local and are able to provide companionship, practical support and care. Some members of the network have succeeded in marrying into the regional elite, while kin links to local families of poor standing and repute are not actively maintained. Members are devout Muslims and Haji Lina is revered for being a returned pilgrim from Mecca. When she encountered a care crisis in old age, she was able to co-opt a granddaughter into the role of carer, and succeeded in normalising this arrangement by henceforth referring to her as a 'raised child'. Other elderly network members are similarly secure and respected.

In the local hierarchy of yesteryear, Sum's and Siyati's networks will have been positioned somewhat below that of Haji Lina's. Both were respected founding families, Sum's had the edge over Siyati's by marrying into village leadership and the colonial state apparatus. Yet Sum's network is one which today may be caricatured as being **traditional and descending**. The key parameters of Sum's network's decline have already been described. Demographic misfortune, combined with a failure to invest in the education and discipline of the younger generation (possibly due to a lack of male leadership), have meant that this network has not partaken in Indonesia's take-off. The younger generation is economically unsuccessful and therefore prone to overreliance on the older generation, leading to a steady but irreversible dissipation of wealth and an inability to offer far-reaching support to the older generation. The only really successful member of the second generation (K's adopted son) has left the community for good. Sum's granddaughter's participation in international domestic labour migration is indicative: it is a strategy which requires limited human capital in terms of education but considerable monetary capital up front (often, as in this case, paid for by sale of land), made available by a family on the promise of substantial returns. However, the profits from this form of labour migration are often invested in short-term conspicuous consumption, rather than becoming the foundation for a more sustainable strategy of

investment and accumulation. When questionable moral behaviour is added to economic decline, a network's good name quickly turns bad, with the effect on elderly vulnerability we have seen above. The elders in this network no longer have power, and the younger generation is not minded to compromise on self-interest and protect them. It is a network which actually exacerbates the vulnerabilities of the old. Significantly, the only one of Sum's sisters who is not destitute has actively curtailed her involvement with her younger relatives and donated her remaining land to the mosque. While Sum's trajectory was extreme, her network's broad experience was replicated in a number of networks where past success in a more traditional Javanese economy and society has not been translated into success in a modernising environment.

By contrast, Siyati's network has managed to transform itself into a **modernising, outward looking network**. A key factor appears to have been the unequal access to land among a large set of siblings with growing families, necessitating pursuit of a non-agricultural strategy for survival.^{xi} Employment by several network members in a state-owned factory and the army ensured good, reliable income, subsidised housing and later a small pension. This allowed the second generation to benefit from a relatively good education (though not to university level) and entry into the local and national formal sector. While this has taken a large proportion of the younger generation away from the community, a strong family ethos of mutual (not one-way!) assistance and interdependence has meant that ties remain strong across distances. Only one network member has participated in international domestic labour migration, and this against the expressed wishes of the parents. The network is devoutly Muslim, has marriage links to other 'good' kin networks (e.g. Haji Lina's), is well-connected to the local mosque and village administration and has succeeded in avoiding any major scandal. All elderly in this network are well-treated and respected, and all maintain some control over assets, such as house, land, pension or savings. Relations with neighbours are cordial, but for assistance this is a network that looks to its own ranks first.

An **upwardly mobile** trajectory is also found in the network around the elderly man Jasman. This intensely strategizing network started with none of the privileges of Lina's, Sum's or Siyati's networks, yet is managing to exploit the opportunities that the changes of the past two decades have created. Jasman and his surviving brother Din (who is childless) are elderly men directly descended from Madurese migrants, who settled in the incomer's hamlet of Kidul. By cultivating virgin land they acquired small landholdings, and agriculture dominated the livelihoods of the older generation. Jasman is considered a local expert of Javanese mysticism and numerology. Jumadi, the key player in this story, is one of Jasman's five children; he has only basic education. Jumadi was raised a Hindu by his aunt, and to this day a crudely erased swastika tattoo on his arm reminds of this fact, although he converted to Islam upon marriage. Jumadi and his wife, of humble origins but a shrewd penny-capitalist, gradually built up a successful economic base by combining work as a driver with running a small shop. In the evenings they operated an illegal but hugely profitable beer hall in their living room. By the early 1990s the wind was changing: the Muslim missionaries, mentioned above, were gaining followers. Jumadi was offered a post within the village administration, under the condition of 'cleaning up his act'. His new position entails use rights of prime agricultural land, the

profits from which enable the expansion of the (now entirely respectable) shop. By the time I met them, the couple counted among the rich, but Jumadi's friendly nature and effectiveness as village official meant he remained popular. It came as no surprise to me that he defeated the incumbent village head in 2001, although a few years earlier such triumph of an upstart over a member of a local elite network would have been unthinkable. Jumadi's success lies in his ability to unite behind him the disparate factions that make up Kidul today, not so much by appealing wholeheartedly to everyone, but by adopting the right tone with everyone and not taking any particular 'sectarian' line. Thus he has skilfully won over both modernist Muslims and villagers for whom Javanese traditions and beliefs remain important, for example by reintroducing the ancient 'village purification ritual' (*slametan bersih desa*), traditionally a syncretic, mystical affair, but given an Islamic guise through the inclusion of prayers and chants. On his way up the economic and political ladder, Jumadi engaged in overt generosity towards, and patronage of, his wider kindred, many of whom remain quite poor, thereby maintaining their loyalty, support and approval. His treatment of both his elderly father and childless uncle have been commended as exemplary. He has paid for expensive hospital treatment for his father and employed his poor uncle as sharecropper in a generous patron-client set-up. This has included buying up the uncle's land and house, rather than allow it to fall to outsiders. He recently arranged very good marriages for his three daughters, thereby forging links directly into the networks connected to the Indonesian bureaucracy and army. Such links are without precedent in this network.

The remaining three networks can be dealt with more succinctly. That of the elderly man Sunadi may be compared with the one just described, because it shares elements of upward mobility, initiative, and gradual consolidation, but highlights the drag and inertia that success may acquire. Sunadi's is a '**traditional, localising**' network. Sunadi and his wife, both originally from Kidul, started off poor but gradually rose to becoming one of the richest families in the village by reinvesting small profits from trade until ultimately prized agricultural land could be accumulated. Under the patronage of a previous village head Sunadi became *modin* (religious official, part of village administration, responsible for Muslim marriages, burials etc.), a role which afforded him considerable respect and further access to land. Yet as in the case of Sum's network, the wealth accumulated by the elderly generation has simply been devolved to the younger generation without a strategy for building on that wealth. All of Sunadi's seven children have been given a house and land in the village, giving this kindred an impressive presence in one part of the village. Consequently none of his children have moved away. The younger generation is neither well-educated, nor occupationally particularly successful, although one son has succeeded his father into the role of *modin*. The elders in this network are reasonably secure, but the next generation is poised to deteriorate. Unlike Sum, Sunadi has held onto some land and derives an income from it, and where Sum was child-poor, he is child-rich and assured of care and support. An elderly childless aunt and childless cousin receive occasional assistance from Sunadi and his wife. Sunadi's network type is replicated several times over in the village, namely where the older generation has accumulated wealth and assets (chiefly agricultural land), but then divided up this wealth among children, often in the form of a house and small plot of land. While this has tied children

to the community it has meant missed opportunities in terms of Indonesia's wider socio-economic developments and stagnation.

Opposites of Sunadi's localised, demographically successful network can be found in the last two networks. Rini, the only surviving of seven siblings, is of respectable village stock. She is related to Haji Lina (her mother and Lina's mother were cousins), but in status, size, wealth and fortunes her network bears no resemblance with Lina's elite network. Contact between these networks is minimal, despite Rini and Lina's sister-in-law being direct neighbours. Rather than draw on the labour of her less fortunate kin (and thereby affirm ties), this sister-in-law hired a catering firm to organise her son's wedding. Three of Rini's sisters remained childless, making this a network with unusually high reproductive failure, and her daughter, Sita, was consequently raised by an aunt. In the late 1960s Rini and several of her network went to Sumatra, following in the wake of poor migrants from Java sent to Sumatra as part of Indonesia's transmigration scheme. They worked as sellers of Javanese food and did quite well. Sita eventually returned to nurse her ailing adoptive mother and safeguard the small plot of residential land the family owned in Kidul. Rini also returned, but Sita's only son has remained in Sumatra, leaving her *de facto* childless. The elderly mother-daughter duo now has no close family ties in Kidul, only more distant ties (cousins and beyond). Sita is very active in the Hindu temple and well-respected among the Hindu community. Interactions are chiefly with fellow Hindu kin (none of whom are wealthy), affinal kin who share their economic position, and with a close network of supportive neighbours. Theirs is a **locally depleted** network in which a lack of younger members is compounded by a lack of adequate material resources and non-existent links to positions of local power. This network type is replicated across the community among economically marginal child-poor networks without compensatory connections to wealthy kin or important community institutions. At present the elderly women survive on Sita's income as a petty food seller and popular helper with preparations for festivities. Should anything happen to her, there is no safety net and charity would be their lot.

The implications of **inadequate** local networks and reliance on charity are thrown into sharp relief by examining Lubis as our final network. Lubis moved to Kidul upon marriage to his first wife. This and his subsequent marriage produced no offspring, although both wives have children from a previous marriage. With his second wife Lubis informally adopted two children belonging to a neighbour, but these children's loyalties reverted to their better-off biological parents. Lacking any children or local kin, Lubis worked into deep old age as a generalised labourer, taking whatever work he could get. His second wife left him, and Lubis survived on gifts of cooked food from neighbours. Matters rapidly deteriorated once he fell and required physical care. Initially he depended on the local nephew of his first wife (the first wife's children had moved away), and on a neighbour, but they quickly grew tired of providing intimate care to someone they didn't share blood ties with. Lubis had always been respected for his work ethic. Once physically and materially dependent, he was derided and gossiped about. His carers eventually identified the whereabouts of his closest blood relative (a cousin's son in a nearby town) and took him there despite tearful protest. No-one intervened. He died soon after and his wish to be buried in Kidul was denied. Lubis's fate illustrates the importance

of having a local network, both as a source of support and care in old age, and of advocacy for one's interests when power and independence have waned. This importance is recognised by villagers, and efforts to build networks through adoption, marriage or patronage are typically great.

Conclusion

This paper set out to present an approach to identifying the subpopulations that are relevant for understanding vulnerability in later life. This has involved starting from local communities which, while by no means bounded, represent socially relevant sites of interaction. In-depth community ethnographies allow the important dimensions of local context (such as economy and stratification, *ethos*, demographic regime, religio-political orientation) to be captured and their influence on people's options and actions to be examined. Communities are composed of different subpopulations, for example in terms of economic position, availability of children, religious membership. Overlapping memberships to several of these subpopulations may give rise to subgroups which are more or less vulnerable. In the communities we studied economic disadvantage often went hand-in-hand with demographic disadvantage to produce a significant vulnerable subgroup lacking both material and human resources. In Kidul this group comprised around one in three elders. However, not all vulnerable elders experience a bad outcome, because they are part of larger units which mediate their relative disadvantage. In rural Indonesia the units of greatest social significance for people's lives were shown to be composed of bilateral kinship networks, supplemented by links to neighbours, religious networks and key community institutions.

Kinship networks are multigenerational, reproductive entities which encompass considerable diversity and cut across socio-economic status and space. They are flexible and dynamic, their membership can be expanded through marriage, adoption or alliance, or curtailed through divorce, conflict or avoidance. Their internal diversity allows them to even out and exploit reproductive and economic extremes through the allocation of children, land, labour, economic opportunity or support. However, as I have tried to show, their relevance for understanding old-age vulnerability and security lies not only in the material flows that occur within networks, but also in their moral force. Although outright poverty affects around one in ten households in contemporary rural Indonesia, virtually none of these households are unconnected to at least some better-off households. Vulnerability or security are in consequence almost always first a question of 'allegiance', by which I mean a question of whether the people in a given network who are *able* to intervene feel a sufficient sense of common interest and common reputation to act on behalf of the vulnerable member. Of secondary (but not negligible) importance are the size, composition and wealth of a network.

Among the network types characterised, the 'elite', 'modernising' and 'upwardly mobile' networks appeared to be most successful and to offer the greatest protection to their elderly members. They are networks which in different ways are succeeding in exploiting at a local level the evolving opportunities which contemporary Indonesian society and economy are creating. This means they are doing well economically, but are also aligning

themselves favourably with important socio-religious and political trends, thereby mobilising resources beyond the immediate local network. Networks that have pursued a strategy of investment only in local opportunities and livelihoods are less likely to succeed in the long run, especially in a cultural context in which expectations of downward flows of intergenerational wealth and equal inheritance among children result in the fragmentation and dissipation of wealth. Elders in these kinds of networks may be assured of adequate local support from children, but may preside over their networks' gradual decline in status. Such decline is already realised in so-called 'traditional descending' networks, where failure to hold on to economic privilege has been accompanied by a loss of moral leadership. At best such networks gently unravel, leaving their elderly members surviving on a minimum social and economic base; at worst they disintegrate under the weight of scandal, disharmony and disrespect, leaving elders completely exposed. 'Locally depleted' and 'inadequate' networks entail obvious vulnerability for elderly members, often through no fault of their own. Sheer human resources matter: networks require a minimum balance of old and young, local and distant members to function adequately. Where childlessness and poverty happen to cluster within a given network, or migration separates network members in a lasting way, then attempts at network building may prove to be no match against demographic disadvantage. Unless there are strategic links to persons or institutions of influence, elderly members of such networks may end their lives in misery.

Appendix

Table A: Sample sizes in *Ageing in Indonesia*

	Kidul East Java	Citengah West Java	Koto Kayo W. Sumatra
Total number of elderly	212	132	d.k.
Number interviewed at least once	206	87	101
Number interviewed repeatedly (incl. interviews with family members)	60	25	30
Health survey: number of elderly inds	73	50	84
Household survey: number of elderly hhs	54	51	49
Household survey: number of non-elderly hhs	52	50	49
Approximate village size	2,000*	1,350	700*

Note: * ‘Village size’ refers to size of the hamlet we primarily worked in.

ⁱ Data on ethnicity were not collected until the 2000 census, prior to that researchers had to rely on mother tongue and religion to get a handle on ethnic differences (Suryadinata, Arifin et al. 2003).

ⁱⁱ I am grateful to the Wellcome Trust, the ESRC and the British Academy for the generous support of this research, and to Philip Kreager, Tengku Syawila Fithry, Edi Indrizal Vita Priantina Dewi and Haryono for their contributions to the data, analysis and discussions resulting in this paper.

ⁱⁱⁱ By the time of our re-survey in 2005 the socio-economic composition of Kidul had changed slightly. The largest group was then made up by Stratum II (37.6%), while Stratum III comprised only 29.4% of households. The shift is likely to reflect the opening up of local job opportunities in new factories. International labour migration was also rising. Households headed by an elderly person have not benefitted from these improvements, and the proportion of poor households among elderly households has risen from 18 to 24 percent.

^{iv} This figure may overestimate primary sterility, as some people without children may not admit that they had a child who died. Data on children surviving are more easily verifiable. The main challenge here is to identify adopted children as adopted rather than own.

^v The data provide an interesting non-European illustration of the point made by Simon Szreter (2011), which is that “due to the vagaries of primary and secondary sterility” members of any given communication community would be exposed to examples of a range of fertility outcomes on the basis of which to judge the merits and disadvantages of small family sizes.

^{vi} The observed relationship between fertility and poverty in rural Java contradicts an apparent ‘law’ in demography: “The higher fertility of the lower classes has been observed so often and in so many different countries that the existence of a negative correlation between fertility and class or socio-economic status has virtually acquired the force of a socio-demographic law” (Wrong 1967, quoted in Hull and Hull 1977: 43).

vii It is worth noting that informal adoption is not found among the matrilineal Minangkabau. According to the logic of matrilineal kinship networks a person's sisters' children are like own children. Thus as in Java children are redistributed via the kin network, albeit in different ways (Kreager and Schröder-Butterfill 2007).

viii Beatty has drawn attention to the importance of emotions in guiding Javanese social interaction: "one's sense of the invisible boundaries within the village community, and of degrees of solidarity and difference among similar households, is typically expressed in terms of feelings of 'reluctance', 'embarrassment', 'respect' and so on" (2005: 66). These feelings shape who people can and cannot comfortably interact with. In Kidul people used the concepts of *sungkan* and *krasan* to communicate their awareness of social distance or familiarity. *Sungkan* may be approximated as a 'sense of respect mixed with shame, awkwardness and avoidance' (cf. Geertz 1961:152). People feel *sungkan* when confronted with individuals of appreciably higher status or wealth, and such interactions are consequently avoided where possible. This extends to interaction with relatives who are much better off. The opposite of *sungkan* is *krasan*, which may be roughly translated as feeling at home or at ease. Feeling *krasan* entails regular, informal visiting and an ability to presume on another's assistance (e.g. when needing a small loan or help with preparing a ritual).

ix A good example is people's participation in ritual meals (*slametan*) to mark births or deaths. These include Javanese mystical and syncretic elements not in line with Islam, but most devout Muslim villagers take a pragmatic approach to participation, emphasising social intent and any Islamic elements to the event.

x Significantly, even the distribution of religious charity in the form of Islamic *zakat* does not discriminate between Muslims and Hindus in Kidul. The Muslim missionary couple described as 'fanatical' (in a dig at the LDII mosque which distributes *zakat* only among its followers) the position that *zakat* should be confined to Muslims. Thanks to their effective pro-poor targeting, a higher proportion of Hindu than Muslim households actually received *zakat* in 2000.

xi According to elderly informants, prior to Independence the oldest child stood to inherit the bulk of parental agricultural land, leaving younger siblings with nothing or very little. A change of law (in the 1960s) replaced this with equal inheritance among all children. Apparently families' enactment of this change varied.

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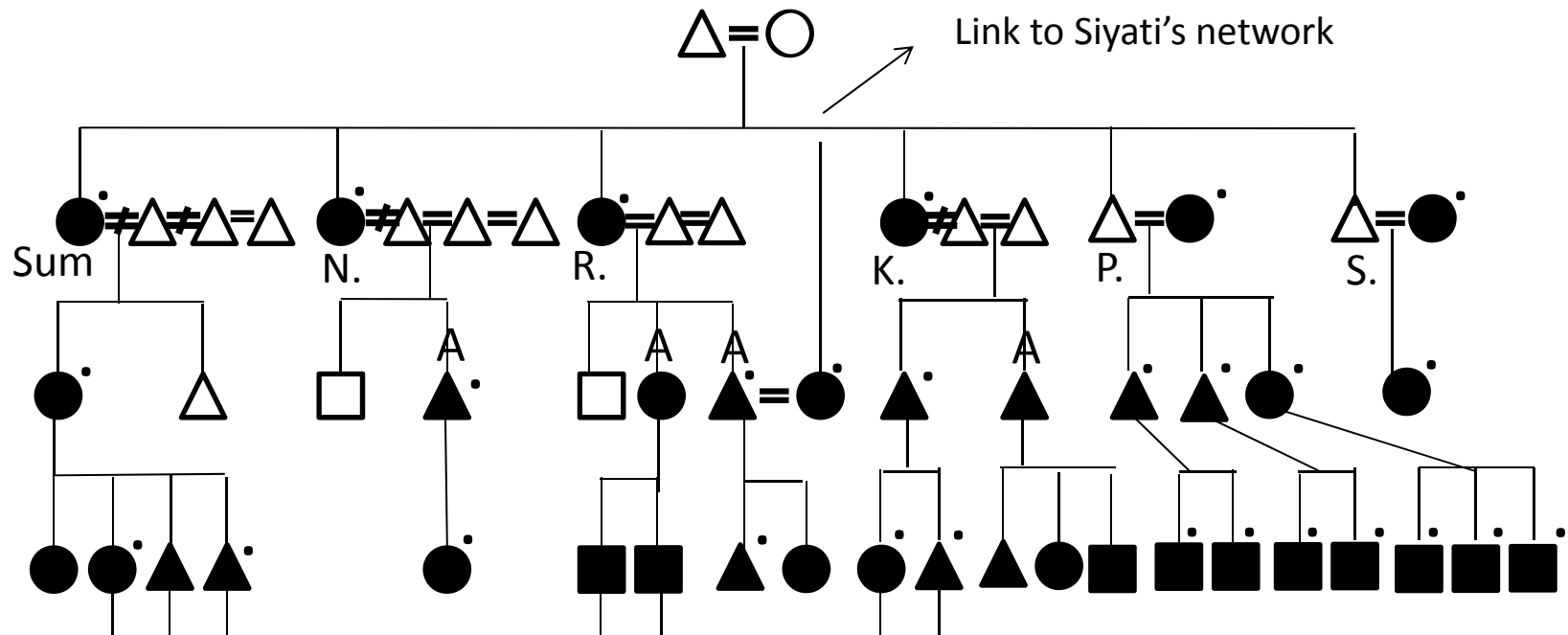


Diagram 1: Sum's Network

Key to kinship diagrams

- ▲ man, alive
- woman, alive
- △ man, dead
- woman, dead
- person of unknown gender
- ▲ = ● married couple
- ▲ ≠ ● divorced couple
- person in the village
- ▲ person is adopted

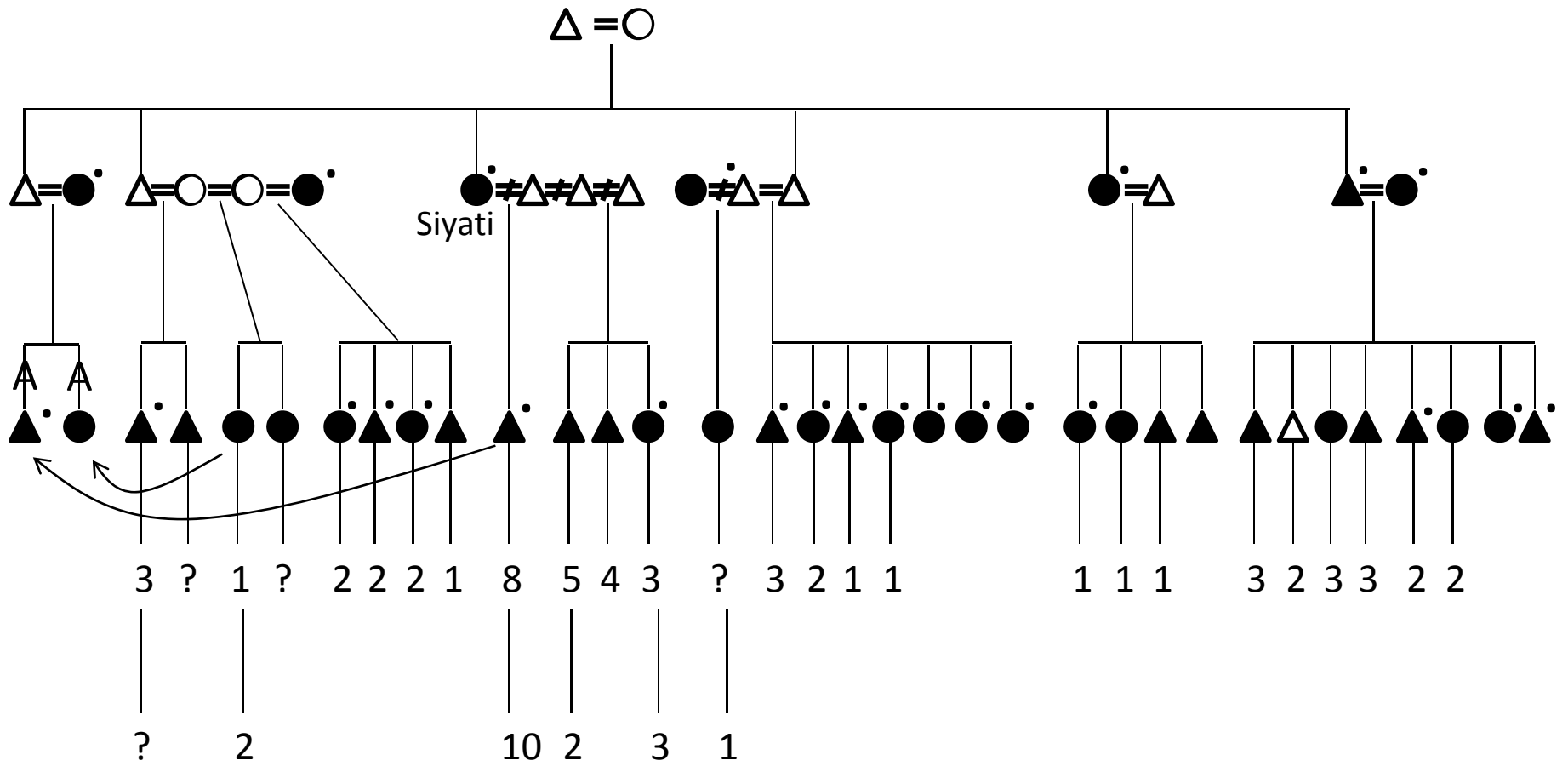


Diagram 2: Siyati's Network