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Individual Health Transitions between Frailty and Dependence in Late Life

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Abstract

Based on a multidimensional measure of "health status", we analyze the individual health transitions in very old age using Markov chains methodology. We combined the ADL with a frailty indicator - based on the presence of deficiencies in mobility, memory, energy, physical or sensory capacities - and constructed three statuses, independent (I) - no ADL incapacities and suffering at most one dimension of frailty; frail (F) - no incapacities on the ADL but having deficiencies on two or more dimensions of frailty; dependent (D) - one or more ADL incapacities. Based on this distinction, we found that frailty is very often a precursor of dependence: 85% were frail one wave before becoming dependent. Reversibility out of frailty is rare (probability 0.17 for F-I) and most often of short duration. Frailty is a lasting situation: stability in frailty is one of the two most frequent trajectories (with independence) on 3, 4, and 5 successive waves. Frailty does not necessarily lead to a rapid decline towards dependence: one year after, 59% of frail people remain frail, only 16% become dependent. Long-term dependence does not necessarily precede death: only 29% were dependent on two successive waves before dying. The proposed health status can contribute to demonstrate that frailty - not long-term dependence - is the last stage in late life.

Sample

340 community-dwelling octogenarians, participating to SWILSO-O (Swiss Interdisciplinary Longitudinal Study on the Oldest Old), were selected at baseline in two contrasting regions of Switzerland (urban and semi-urban). They were interviewed 5 times (between 1994 and 1999). The information was gathered by means of face-to-face interviews (total N=1225).

Questions

1. What are the main health statuses in an older population of Switzerland?
2. Is frailty always a precursor of dependence?
3. Is it possible to recover from frailty?
4. Does frailty lead to a rapid decline towards dependence?
5. Does long-term dependence necessarily precede death?

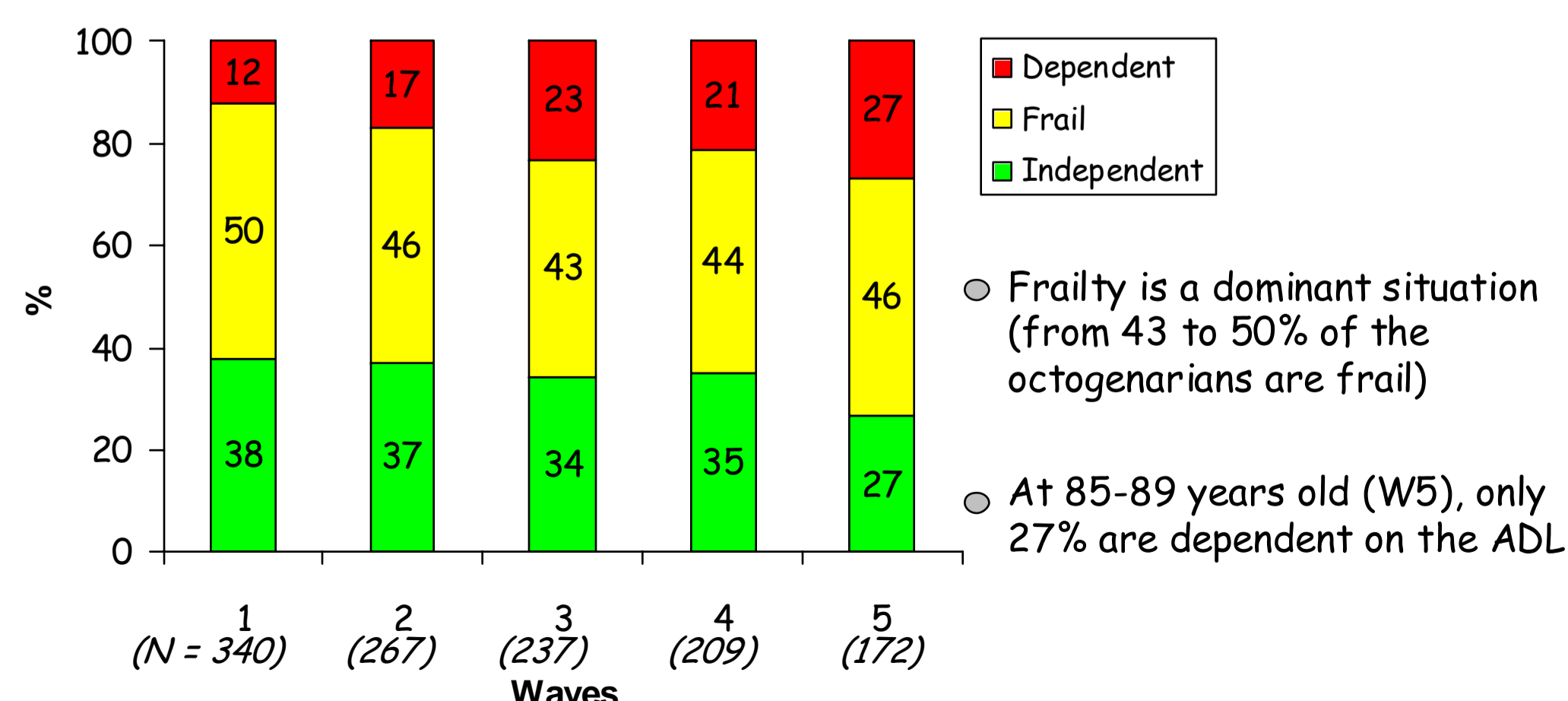
Health status

- Dependent (D)** one or more ADL incapacities
- Frail (F)*** no incapacities on the ADL, but two or more deficiencies on the dimensions of frailty (mobility, memory, energy, physical, sensory capacities)
- Independent (I)** no ADL incapacities and not suffering more than one dimension of frailty

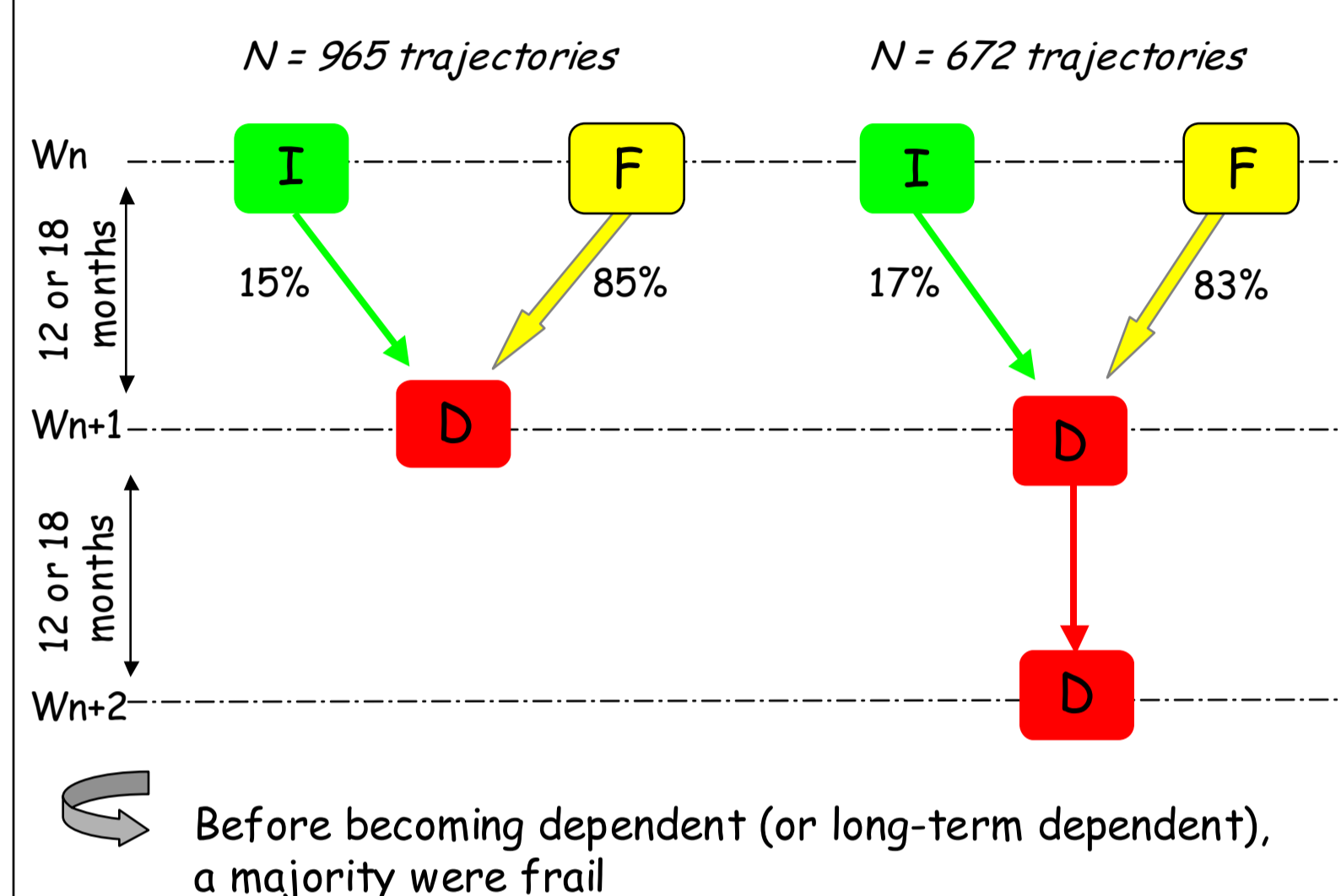
* Adapted from Strawbridge et al. J. of Gerontol. (1998)

The health status has been validated: higher risks of care consumption and geriatric outcomes (falls, illnesses, functional dependence or death) for frail individuals by comparison with independent persons (Armi and Guilley, *Gérontologie et Société* 2004).

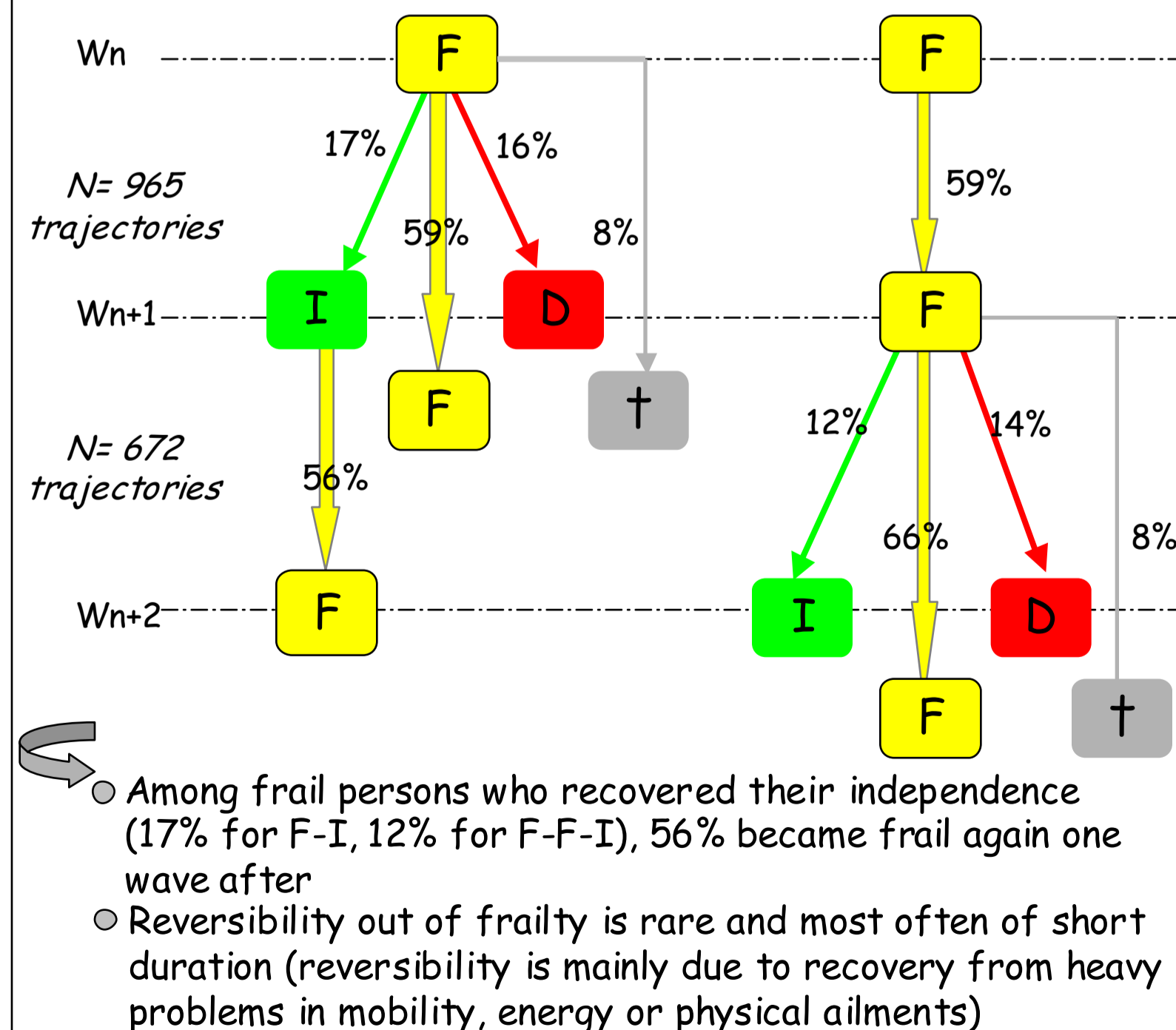
Result 1. Frailty - not dependence - is a leading situation in late life



Result 2. Frailty is a precursor of dependence



Result 3. Reversibility out of frailty is possible but not frequent

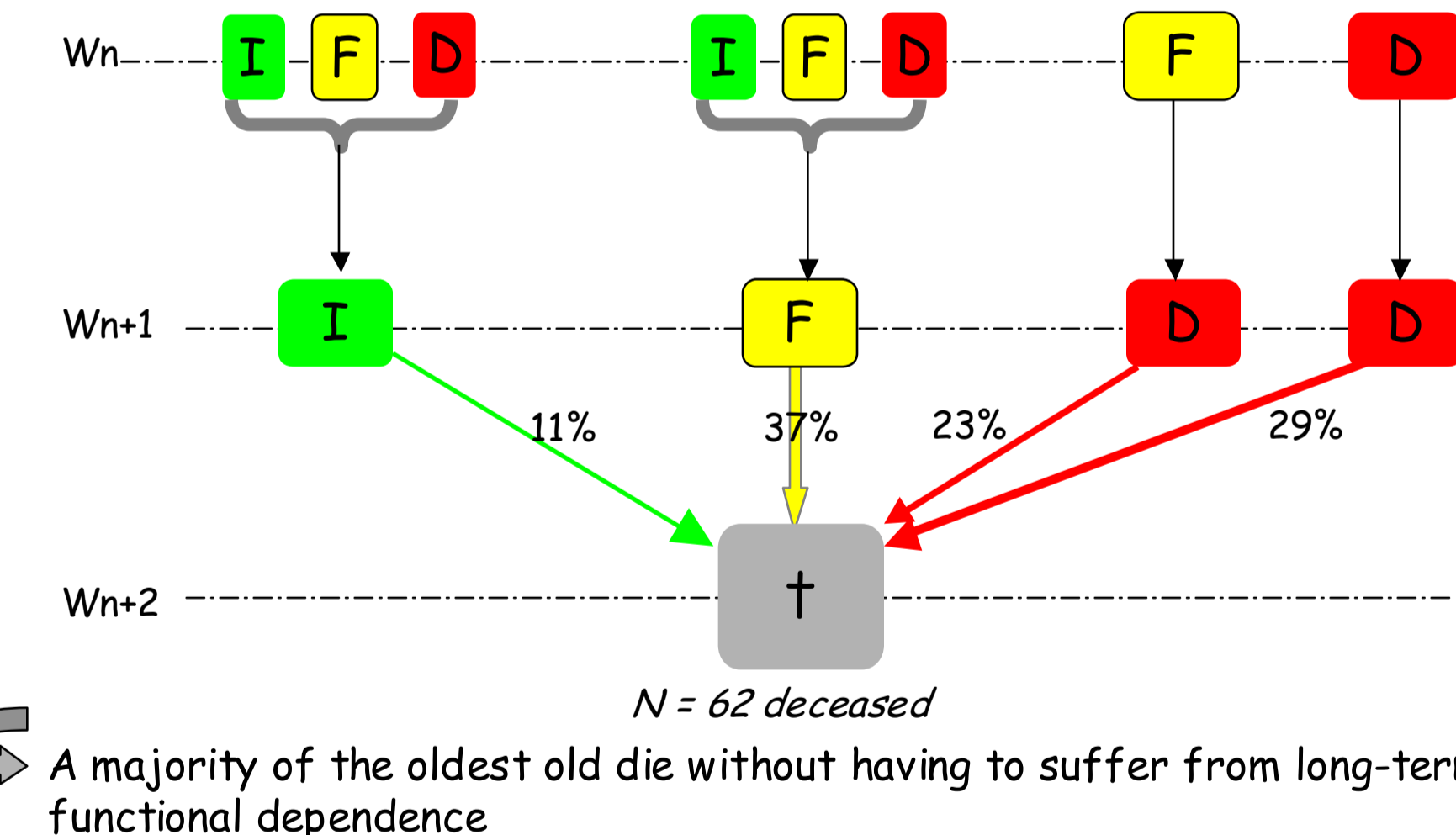


Result 4. Frailty is a lasting situation

The 3 most frequent trajectories	3 successive waves		4 successive waves		5 successive waves	
	Sequence	N	Sequence	N	Sequence	N
○ Stability in frailty is one of the two most frequent trajectories (with independence)	F-F-F	134	I-I-I	69	I-I-I-I	28
	I-I-I	127	F-F-F	61	F-F-F-F	16
	D-D-D	84	I-F-F	25	I-F-F-F	14

○ Frailty does not necessarily lead to a rapid decline towards functional dependence

Result 5. Long-term dependence is not necessarily the last (health) stage of life



Conclusions and perspectives

Frailty is a leading and lasting situation in late life, from which ameliorations are rare and often of short duration. Frail people are at increased risk of dependence. A majority of the oldest old die without having to suffer from long-term dependence.

These results, combined with the fact frailty influences the oldest old well-being (see Girardin M., Poster Session BSS 11/20/04) and leads to arrangement of their daily life (e.g. social relationships, activities), could demonstrate that frailty - not long term dependence - is the last stage in late life.