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Microsimulation and SCOTSIM: an introduction

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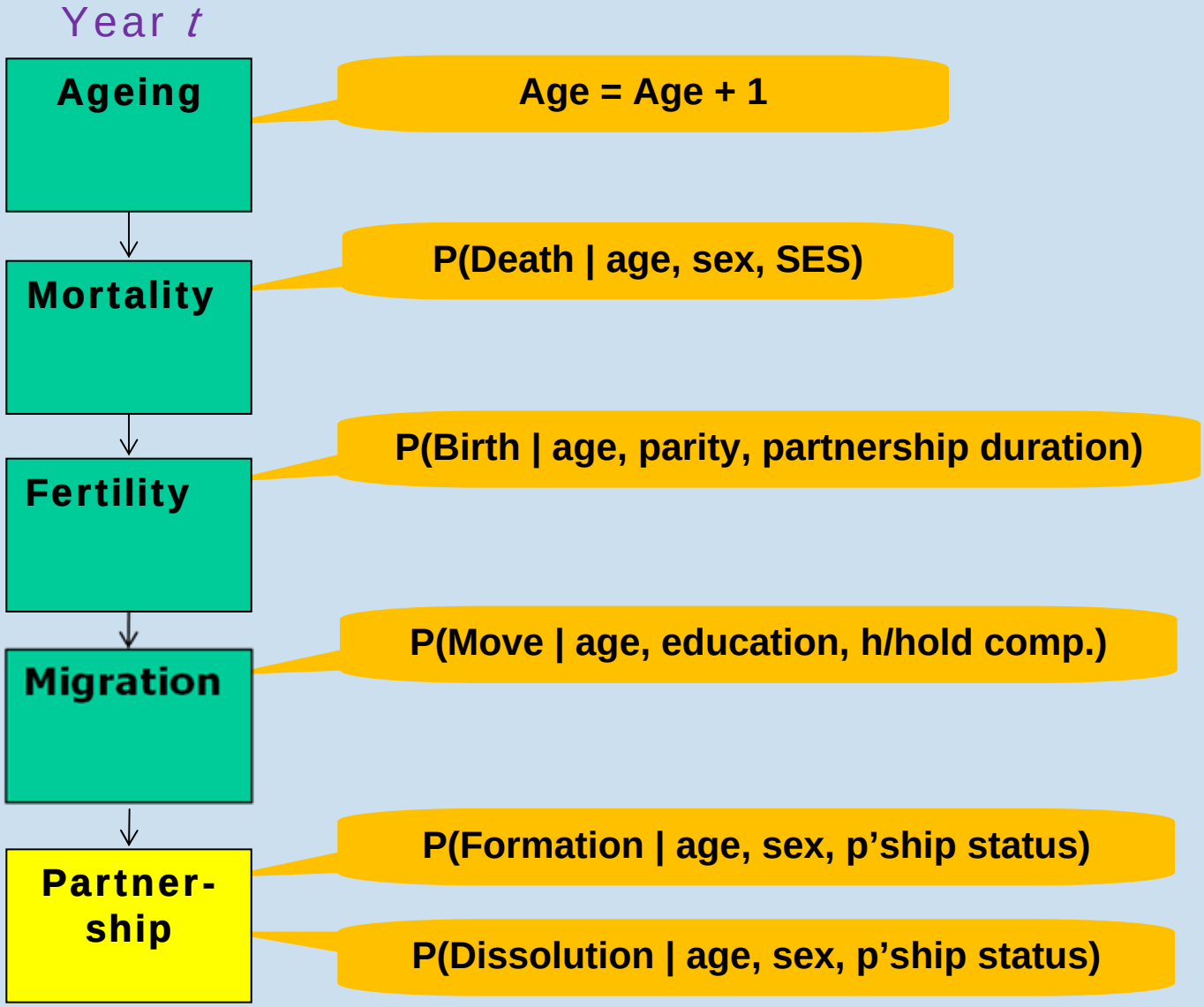
Microsimulation – A Definition

A simulation of individual-level behaviours through time

- Individuals can be classed as persons, families, households etc.

The Microsimulation model used for general register Office for Scotland (GROS) is being built from 'scratch', and is named SCOTSIM

Dynamic Microsimulation



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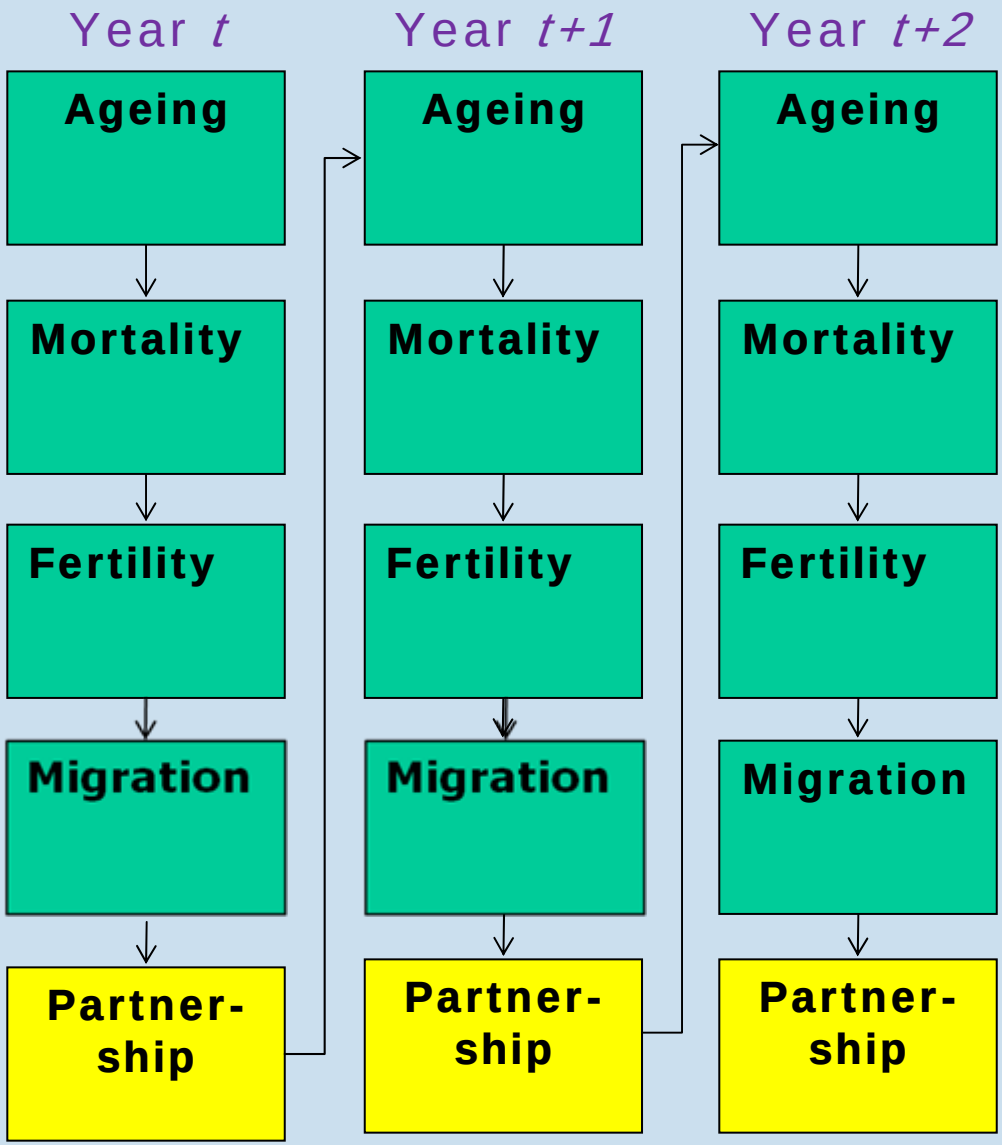
Dynamic Microsimulation



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Microsimulation Data

Individual	Family	Household	Age	Sex	Health Status
1	1	1	35	Male	Healthy
2	1	1	32	Female	Healthy
3	1	1	8	Male	Healthy
4	1	1	5	Female	Healthy
5	2	2	23	Male	Unhealthy
6	2	2	21	Female	Healthy
7	3	2	25	Male	Healthy

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How Data is Calculated

- Logistic Regression

Event	Explained By	
Relationship Formation (Marriage and Cohabitation)	Age Group	Socio-Economic Status
	Sex	Child Presence in HH
	Previous Marital Status	Health Status
	Education Level	Temporal Trends
	Child Presence in HH	

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The next step

All rates are fed into SCOTSIM, which will supply data on:

- Differential experiences of events
- A spatial distribution of events by local authority area

The spread of population change will be captured

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An Added Bonus

‘What if’ scenarios can be modelled

For example, increase/decrease in fertility, mortality and in/out migration can be ‘run’ in SCOTSIM.

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Problems

Microsimulation is ‘data hungry’ and is labour intensive

(a) Access to large enough datasets

(b) Calculating events from data

(c) Correctly scaled data i.e. at Local Authority Level and Sub-Local Authority Level

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Conclusions

Pros

SCOTSIM will provide a wide array of complementary data/analytic results to current GROS projections

'What if' scenarios can be modelled

Cons

Data hungry

Resource intensive

Maintenance

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Thank you, any questions?

For all things microsimulation go to:

www.microsimulation.org