QUANTIFICATION OF THE TRANSMISSION RISK OF BOVINE TUBERCULOSIS BY CATTLE TRADE

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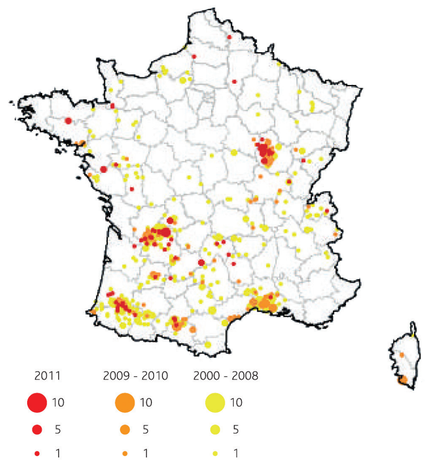
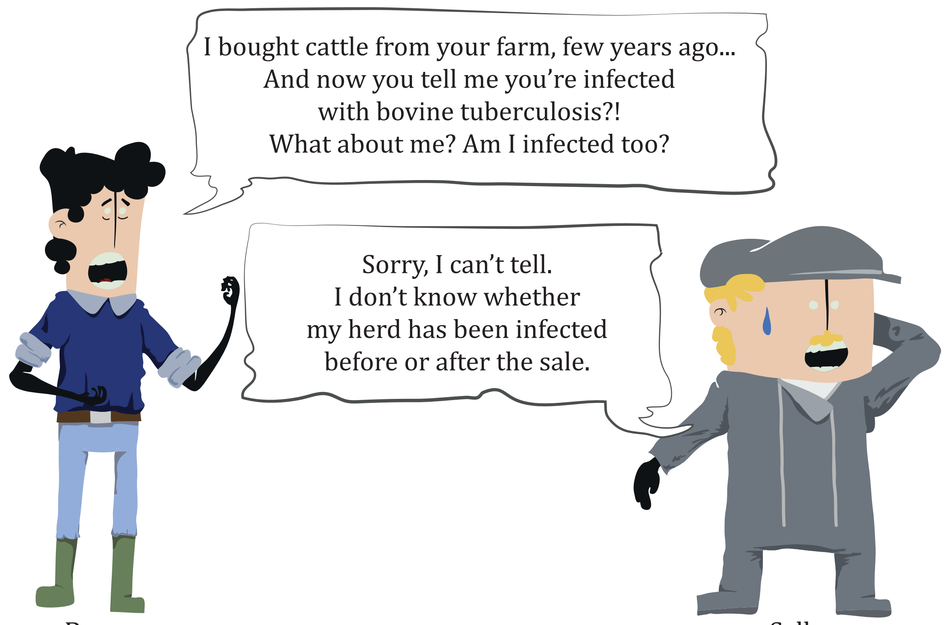
BACKGROUND

France « officially bovine tuberculosis (bTB) free »

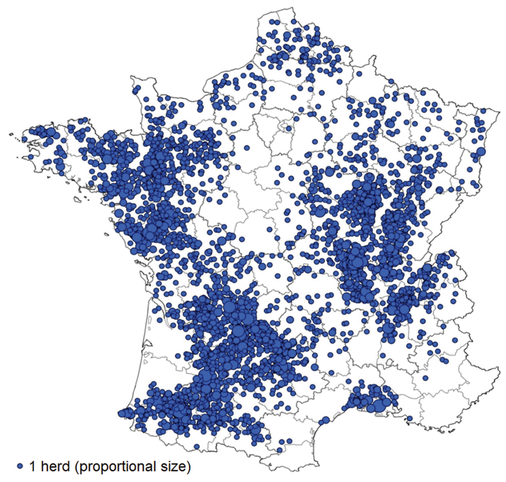


Geographical repartition of bTB breakdowns in France between 2000 and 2011
(Fediaevsky et al. 2012)

QUESTION



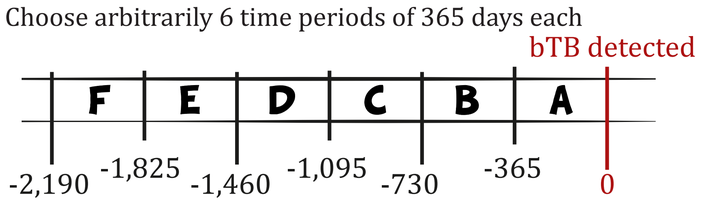
Buyer — Seller



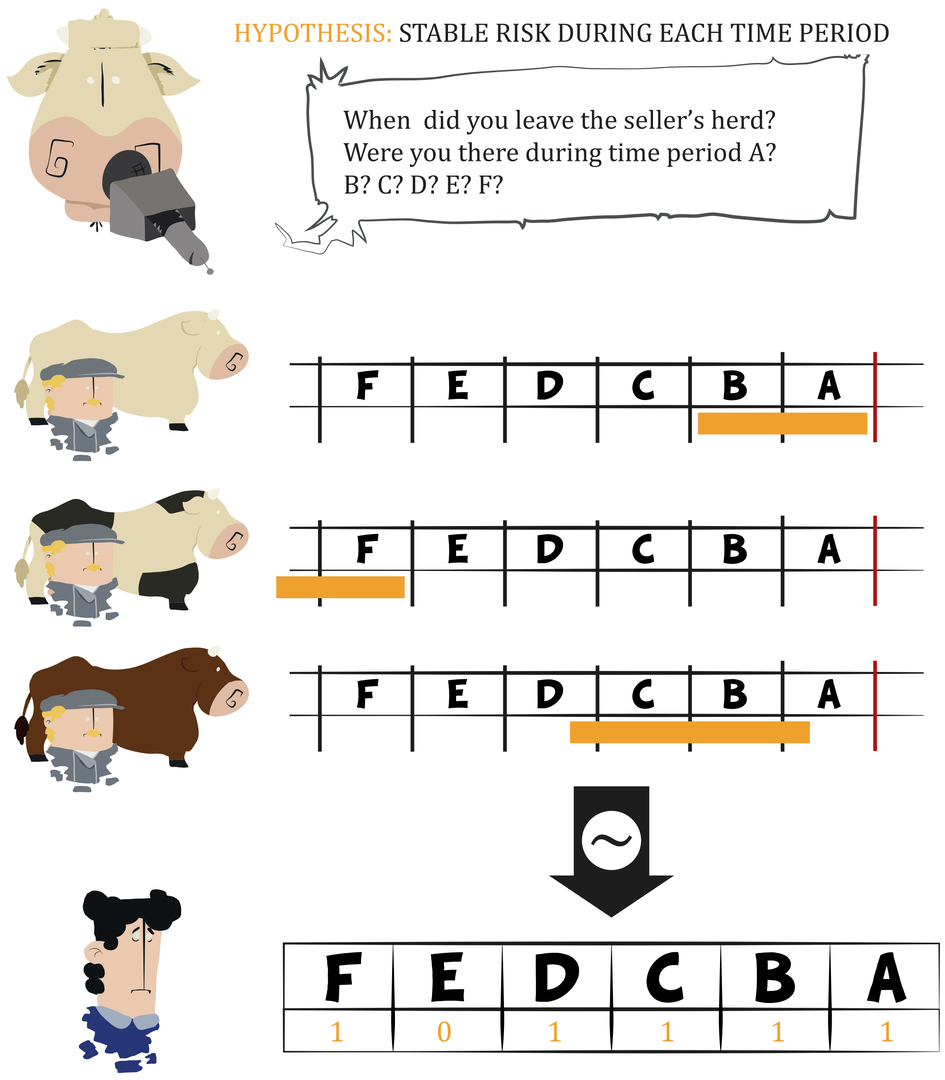
Number of exposed herd by commune

MODEL

Choose arbitrarily 6 time periods of 365 days each

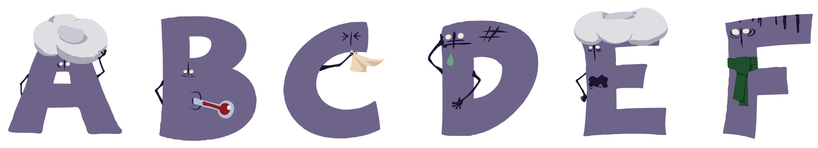


HYPOTHESIS: STABLE RISK DURING EACH TIME PERIOD



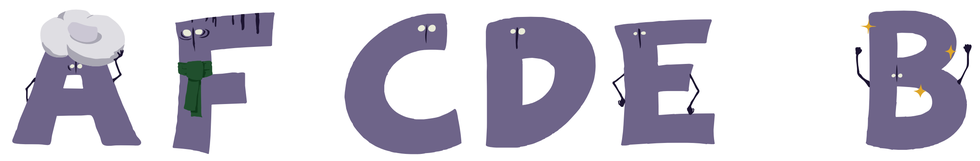
RESULTS

UNIVARIATE ANALYSIS: OR >1 for each time period



MULTIVARIATE ANALYSIS:

Having bought cattle that had lived in infected herd during:	OR	CI 95%	p
Time period A	17.52	[2.66 – 115.32]	0.003
Time period B	0.17	[0.04 – 0.68]	0.012
Time period C	1.04	[0.32 – 3.33]	0.951
Time period D	1.73	[0.60 – 4.98]	0.309
Time period E	1.62	[0.58 – 4.55]	0.362
Time period F	3.24	[1.40 – 7.48]	0.006

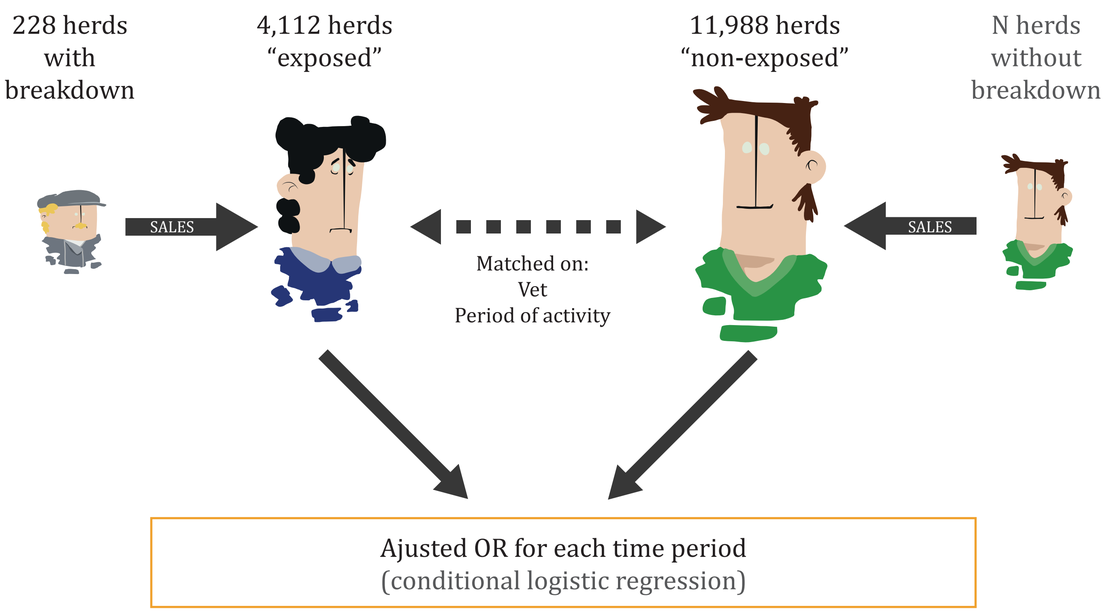


The succession of the 6 time periods induces an intrinsic collinearity between variables

Simplified model with 3 time periods

Having bought cattle that had lived in infected herd during:	OR	CI 95%	p
Time period A	**4.44**	**[1.01 – 19.54]**	**0.05**
Time period D	1.71	[0.81 – 3.62]	0.16
Time period F	**2.89**	**[1.54 – 5.44]**	**0.001**

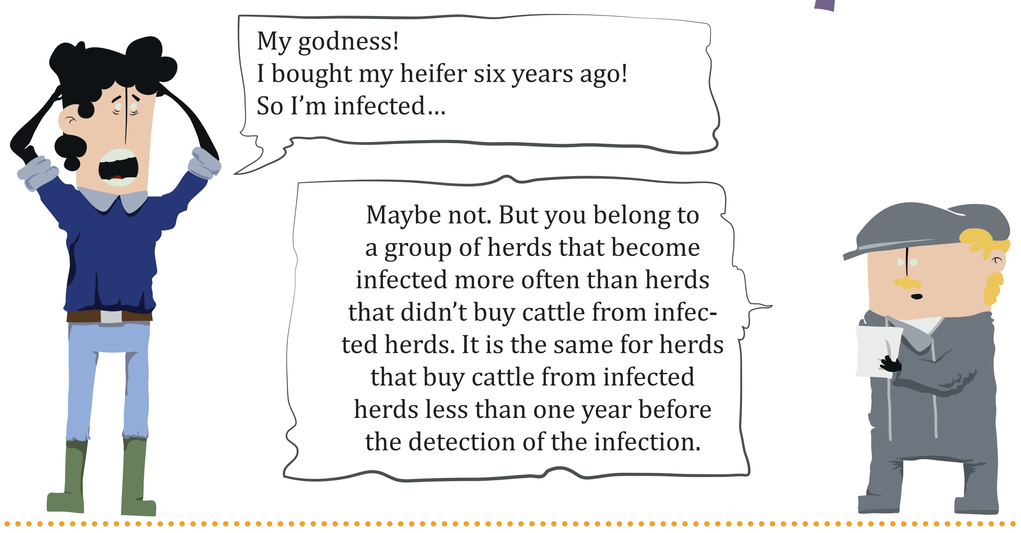
MATERIALS & METHODS



CONCLUSION

Fast within-herd transmission › many lesions › quick detection › A

Slow within-herd transmission › few lesions › late detection › F



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