

Time-space convergence

Globalisation is altering the way in which time-space operates and is perceived. The concept of **time-space convergence**, in which 'the travel time required between places decreases and distance declines in significance', was developed by D.G. Janelle in 1968 to examine the changing nature of spatial relationships. Time-space convergence means that the friction of distance is being reduced.

Figure 3 illustrates the way in which time-space convergence has resulted in a shrinking world. It is likely that you have travelled much more than your parents did when they were your age, and far more still than your grandparents at your age!

Figure 4 shows the role of time-space convergence in the process of spatial reorganisation. Time-space convergence

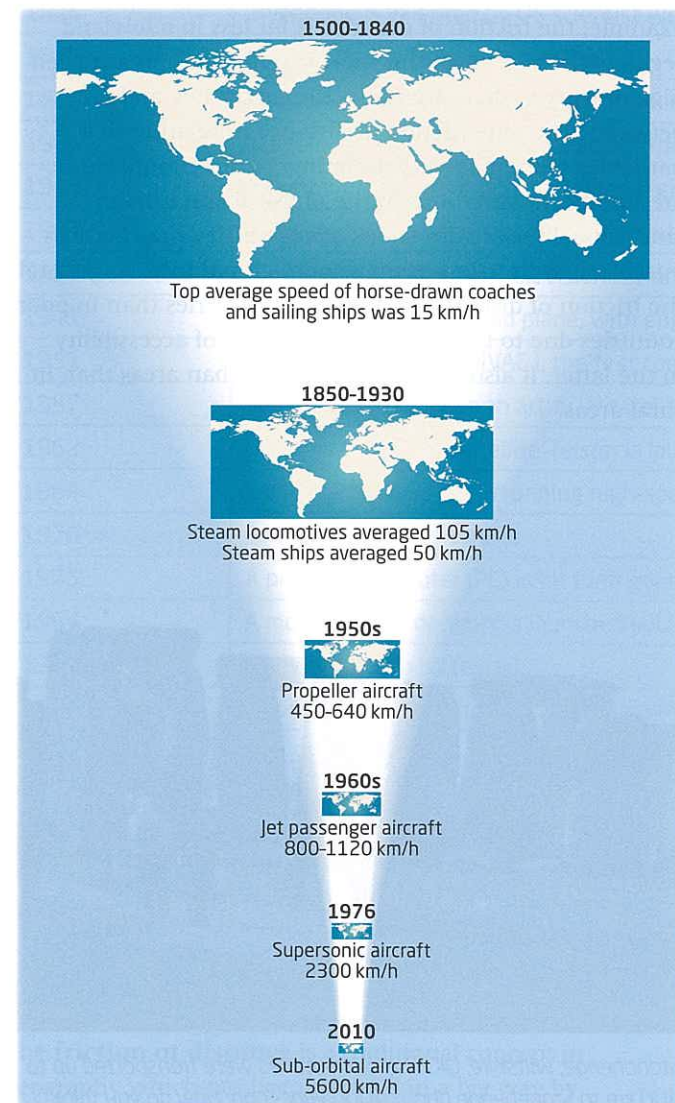


Figure 3 Global shrinkage.

is a direct consequence of transport innovation. This may be in terms of the mode of transport itself or improvements in transport infrastructure that allow the mode of transport to operate more efficiently. Time-space convergence can have an array of consequences for a city, region or country, some positive and some negative. A particular improvement in transport may stimulate demands for even greater improvements in accessibility. People are more aware than ever of what is possible because of their improved knowledge of events elsewhere in the world.

Janelle illustrated how time-space convergence can be calculated. In one illustration of the subject, Janelle used the example of the travel time between Los Angeles and Santa Barbara in the USA, which took 500 minutes in 1901 and only 100 minutes in 2001. This gives a time-space convergence of 400 minutes or an average rate of convergence of 4 minutes per year. Another example researched by Janelle is the distance between Edinburgh and London in the UK. He concluded that the two cities had converged at an average rate of 30 minutes per year over a 200-year period.

Figure 5 provides a hypothetical example of the reduction in travel time between two cities, A and B. The relationship is shown as a curve rather than a straight line because in reality the improvements in transport that would reduce the travel time to such an extent would have occurred at particular points in time, for example on the opening of a motorway or a new rail link.

The last two centuries have witnessed phenomenal rates of time-space convergence. This has been particularly the case since the 1960s with jet air travel and advanced



Greyhound bus, USA.

Geographical skill

Study Figure 5. Produce another example of your own to illustrate time-space convergence. Make sure that you include a calculation to show the average time-space convergence.

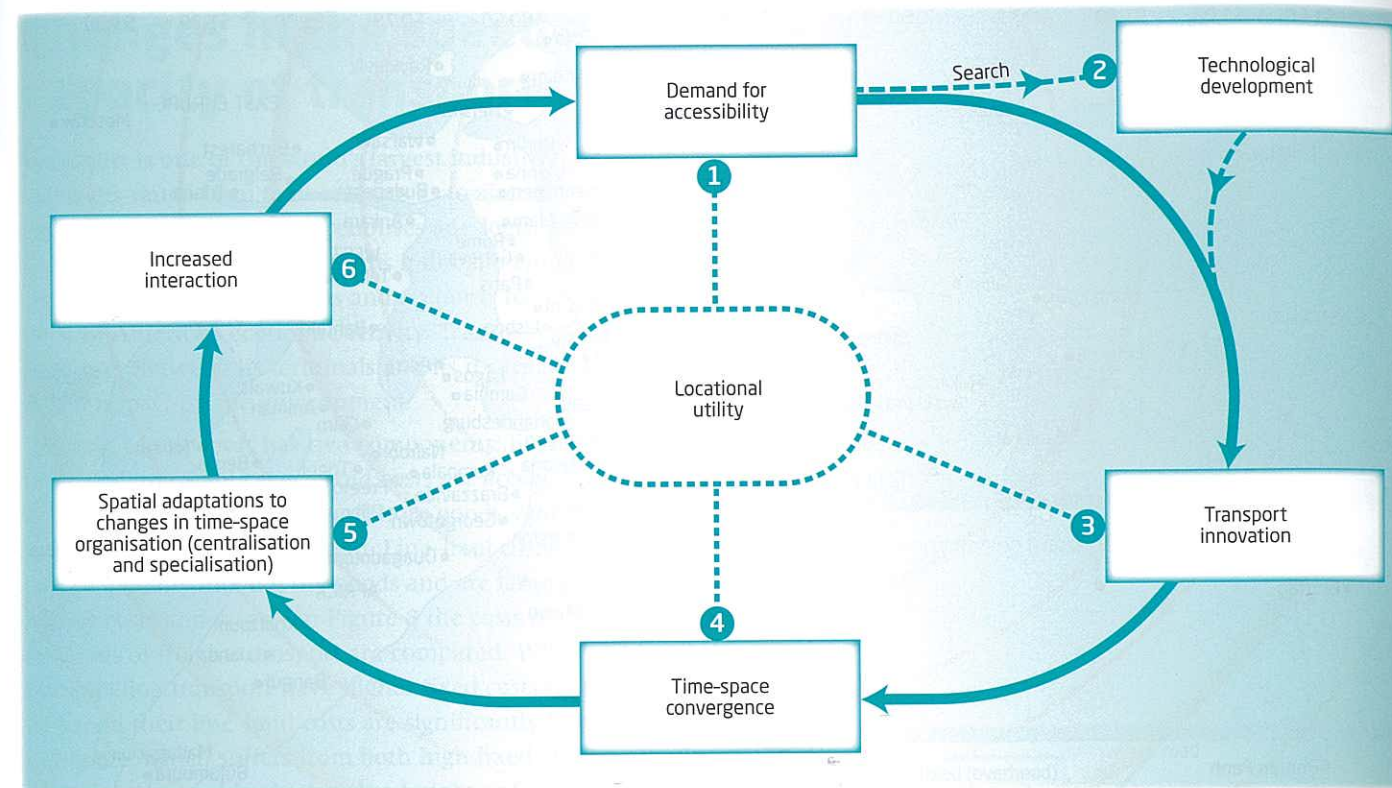


Figure 4 A process of spatial reorganisation.

telecommunications. However, the assumptions of continuing time-space convergence may need to be questioned in a future of almost certain high energy costs. It is also relevant to note the restrictions that societies place on time-space convergence, for example speed limits on motorways and air traffic control limitations. High usage of infrastructure can lead to congestion and increasing travel times, or **time-space divergence**, which can have an impact on different activities and social groups.

Time-space convergence is sometimes viewed in terms of cost rather than time. Figure 6 shows the world measured in terms of the cost of a minute-long phone call from the USA in 2000. The map shows considerable spatial differentiation. For example, London and Tokyo are shown as being 'closer' to the USA than Mexico City. This is perhaps not surprising as New York, London and Tokyo are the world's three most important financial centres with a huge volume of communication between them.

About 60% of the world's population now have mobile phone subscriptions, showing that mobile phones are the communications technology of choice. Figure 7 shows how much fixed-line and mobile subscriptions increased between 2002 and 2008. Mobile subscriptions increased from 1 billion to 4.1 billion over this short time period. This information from a UN report noted that the great surge in

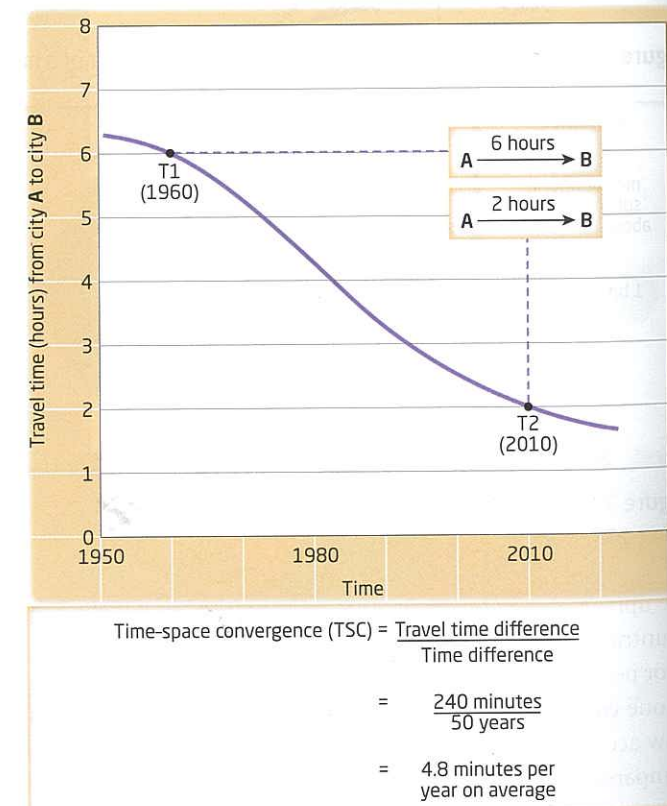


Figure 5 Time-space convergence.

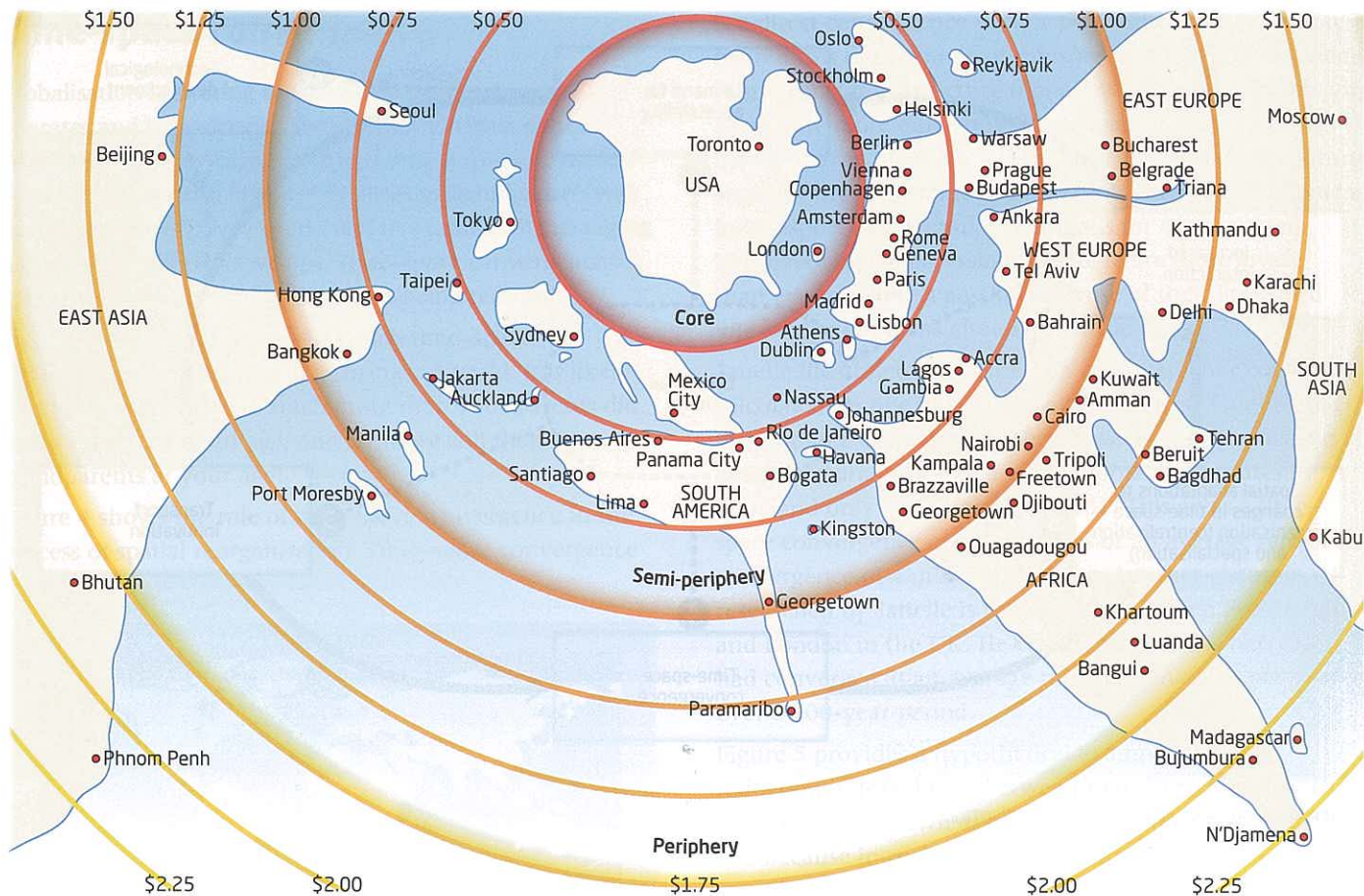


Figure 6 Time-space convergence and divergence – the cost of a minute-long phone call from the USA, 2000.

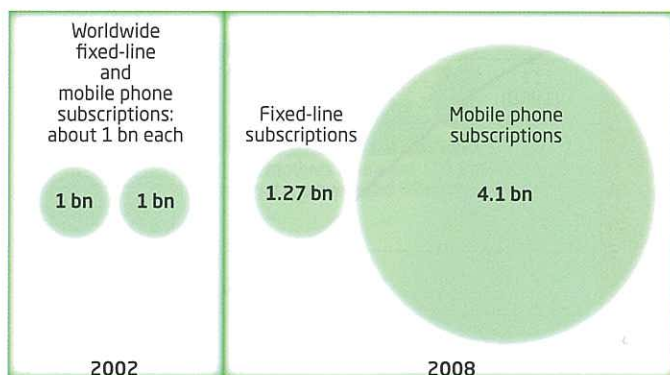


Figure 7 Worldwide fixed-line and mobile subscriptions, 2002 and 2008.

the uptake of mobile phones was most marked in developing countries where they are now an invaluable tool among poor people. In 2008, 28% of people in Africa had a mobile phone compared with just 2% in 2000. Developing countries now account for around two-thirds of mobile phones in use compared with less than half in 2002. An important reason is money transfer services which allow people without bank accounts to send money by text message.



Activities

- 1 What do you understand by the terms (a) 'transport systems' and (b) 'communications systems'?
- 2 What is diffusion?
- 3 Explain (a) friction of distance and (b) distance decay.
- 4 Give two examples of how distance decay might operate in the region in which you live.
- 5 Define 'accessibility'.
- 6 Describe the information presented in Figure 3 (page 30).
- 7 **a** Define 'time-space convergence'.
b Explain the role of time-space convergence in the process of spatial reorganisation shown in Figure 4 (page 31).
- 8 Under what circumstances might time-space divergence take place?
- 9 Look at Figure 6. To what extent is the cost of a minute-long phone call from the USA related to distance from the USA? Suggest reasons for your answer.
- 10 Explain the two different trends shown in Figure 7.