

Fig 1

BOX 1.1
IMPROVEMENTS IN WEATHER FORECASTING RESULTING FROM
SATELLITE OBSERVATIONS

One of the greatest societal benefits provided by Earth sciences in the past 30 years has been the steady improvement of weather forecasts. [Figure 1.1.1](#) shows the monthly moving average of the correlation (a perfect forecast is 100 percent) between observed and forecast weather features for 3-day, 5-day, and 7-day forecasts. The accuracy of forecasts of large-scale weather patterns in both hemispheres has been increasing steadily since 1980. The Southern Hemisphere forecast (bottom curve), which in 1980 was significantly worse than the Northern Hemisphere forecast (top curve), has caught up in accuracy in recent years. This dramatic improvement has been due largely to more and better global satellite data.

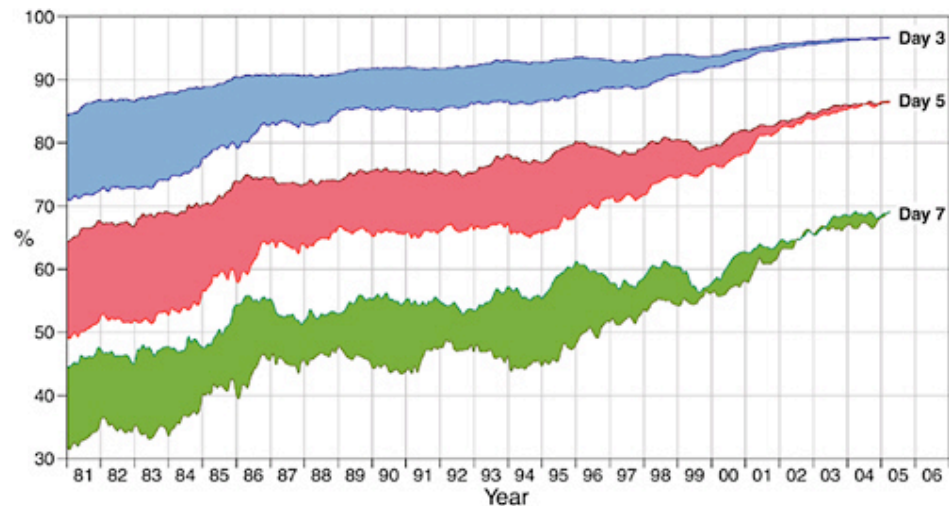
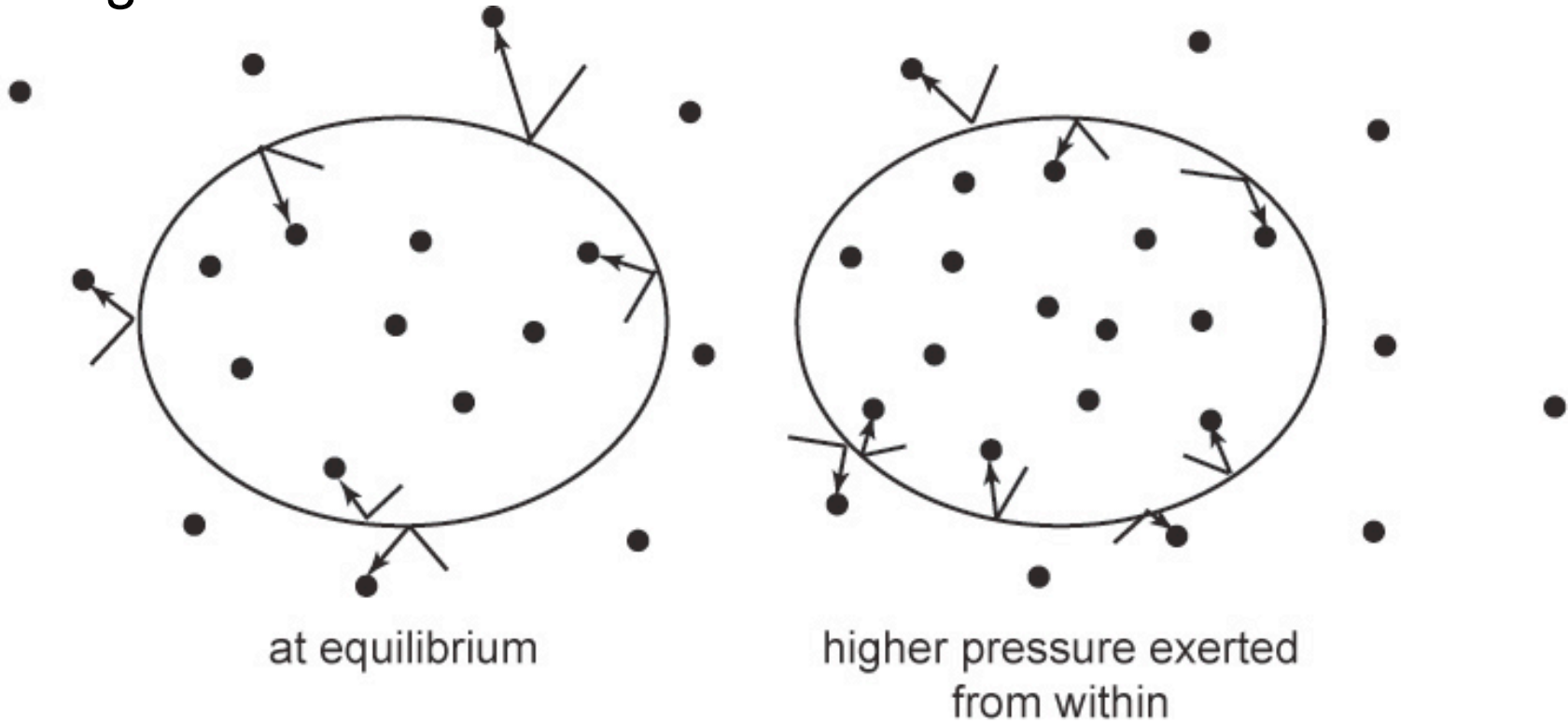


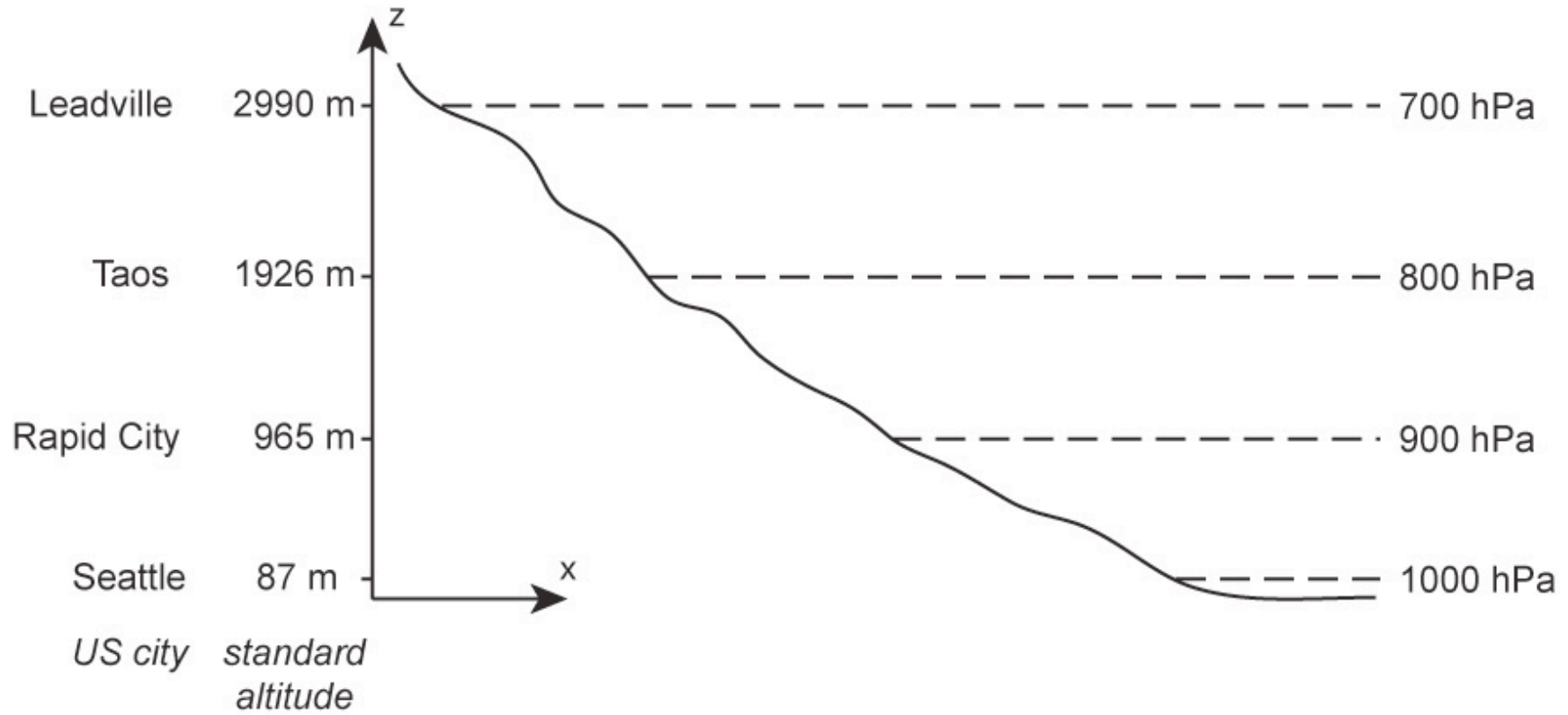
FIGURE 1.1.1 Anomaly correlation of 500 hPa height forecasts. SOURCE: Adapted from A.J. Simmons and A. Hollingsworth, 2002, "Some Aspects of the Improvement in Skill of Numerical Weather Prediction," *Q.J.R. Meteorol. Soc.* 128:647-678. Copyright Royal Meteorological Society. Reprinted with permission.

Fig 2



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Fig 3



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