What Factors Affect the Viscosity of Gases?

Although gases, in general, flow much more easily than liquids, the viscosity of gases can vary too. The size and shape, (or bulkiness) of gas particles and temperature are factors that affect the viscosity of gases as well as the viscosity of liquid. Just like liquid particles, as gas particles get larger and bulkier, their viscosity increases.

The effect of temperature on gas particles is different, however, from the effect on liquid particles. While an increase in temperature reduces viscosity in liquids, the opposite is true for gases. Why? Gas particles do not depend on an increase in energy (a rise in temperature) to move apart, as is the case for liquids. The particle theory suggests that has particles are already very far apart. Extra energy increases the internal friction of gas particles because the particles speed up and collide with each other more frequently. Cooler temperatures in gases keep internal friction (and therefore viscosity) low.