

## *Matter versus Light*

Although wave and particle duality has been considered using light, it was predicted by de Broglie that matter also has wave properties, which was subsequently verified by Davisson and Germer between 1923-1927. Hence the concept of wave-particle duality is not only applicable to light and photons but also to matter. For example, an electron could be substituted for the photon in [Figure 1.1](#). Assuming the photon detectors are replaced by electron detectors, both wave interference as in [Figure 1.4](#) as well as measurement as in [Figure 1.12](#) will exhibit similar behavior.

Whether or not light or matter is utilized in a quantum experiment appears to be inconsequential to resolving the issue as to whether the projection postulate is really needed above and beyond Schrödinger's equation. A *potential* resolution of this problem was to be proposed very quickly with the discovery by Heisenberg of his uncertainty relationships.