

演講題目：

The bottleneck of conscious vision

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摘要：

In everyday life, we are constantly surrounded by complex and cluttered scenes. In such cluttered environments, visual perception is primarily limited by crowding, the deleterious influence of nearby objects on object recognition. For the past several decades, visual crowding was assumed to occur only between low-level features or object parts, thus dismantling, destroying, or filtering object-specific information. A large and converging body of evidence has demonstrated that this assumption is false: crowding occurs at multiple stages of visual analysis, and information passes through crowding at each of these stages. This converging empirical evidence points to a seeming paradox: crowding happens at multiple levels, which would seem to impair object recognition, and yet visual information at each of those levels is maintained intact and influences subsequent higher-level visual processing. Thus, while crowding impairs the access we have to visual information at many levels, it does not impair the representation of that information. The resolution of this paradox reveals how the visual system strikes a balance between the limits of object selection and the desire to represent multiple levels of visual information throughout cluttered scenes. Understanding crowding is therefore key to resolving the relationship between the richness of object and scene representations and the limits of conscious object recognition.