The parity transformation reverses the signs of all three coordinate axes, and is equivalent to a reflection in a mirror followed by a rotation of $\pi$ about the axis perpendicular to the mirror. Although rotation is a continuous operation, reflection is not, so a parity transformation is not a continuous transformation.

An ordinary vector (that is, one not obtained from a cross product) reverses under parity, so that $\mathbf{v} \rightarrow -\mathbf{v}$. The cross product of two ordinary vectors is therefore unchanged by parity; since both its constituent vectors change sign, the cross product is unchanged. An ordinary vector (one that does change sign under parity) is a polar vector; a cross product-type vector is a pseudovector or axial vector.

An ordinary scalar (such as temperature or density) remains unchanged by parity. However, a scalar formed by a triple product of 3 polar vectors, as in $\mathbf{A} \cdot (\mathbf{B} \times \mathbf{C})$, does change sign under parity, and is known as a pseudoscalar. A dot product of a polar with an axial vector also gives a pseudoscalar.

Some examples:

- Magnetic flux $\mathbf{B}$ is a pseudovector, since it is formed from the curl of the magnetic vector potential: $\nabla \times \mathbf{A}$. The curl operator $\nabla$ behaves like a polar vector, since it contains the derivatives with respect to the three coordinates, and these all change sign under parity.
- Angular momentum $\mathbf{L}$ is a pseudovector, since it is the cross product of two polar vectors: $\mathbf{L} = \mathbf{r} \times \mathbf{p}$.
- Charge $q$ is a scalar, as it is an intrinsic property of a particle, and not the result of a vector triple product.
- The scalar product of a vector and a pseudovector is a pseudoscalar, since the vector changes sign but the pseudovector does not. Thus the scalar product does change sign.
- The scalar product of two polar vectors is an ordinary scalar, since both vectors change sign and their product therefore does not.
• The scalar product of two pseudovectors is also a scalar, since neither pseudovector changes sign.