

Distortion

Distortion refers to any **systematic alteration, misrepresentation, or deviation** from accurate or truthful representation of data, structure, signal, or interpretation in a scientific context.

Types of Distortion

- **Data distortion:** Manipulation or misrepresentation of datasets (e.g. selective reporting, cherry-picking).
- **Interpretative distortion:** Drawing conclusions not supported by the data; overgeneralization.
- **Methodological distortion:** Applying a method inappropriately, leading to skewed or invalid results.
- **Imaging distortion:** Artifacts or spatial inaccuracies introduced by equipment or reconstruction algorithms (e.g. in MRI or CT).
- **Statistical distortion:** Misuse of statistical methods that bias outcomes (e.g. improper p-value interpretation).

Consequences

- Misleading readers, clinicians, or policymakers.
- Undermining reproducibility and scientific integrity.
- Eroding public and academic trust in research.

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