Both Boyce-Codd Normal Form (BCNF) and Fourth Normal Form (4NF) are higher normal forms that aim to address certain types of anomalies in a relational database. However, they target different types of issues, and their definitions and implications differ.

**Boyce-Codd Normal Form (BCNF):** BCNF is a higher normal form than the Third Normal Form (3NF). In BCNF, a table is considered to be in BCNF if, for every non-trivial functional dependency �→�*X*→*Y*, the determinant (X) is a superkey. In simpler terms, every non-trivial functional dependency in a table should be such that the determinant is a superkey.

The primary motivation behind BCNF is to eliminate redundancy and ensure that there are no overlapping candidate keys within the same table. BCNF helps in avoiding certain update anomalies, particularly those related to insert, update, and delete operations.

**Fourth Normal Form (4NF):** 4NF is a higher normal form than BCNF and is designed to handle multi-valued dependencies. A table is in 4NF if it is in BCNF and has no non-trivial multi-valued dependencies.

A multi-valued dependency occurs when one attribute uniquely determines another attribute, independently of any other attributes in the table. 4NF aims to eliminate redundancy caused by such dependencies and ensures that multi-valued facts are stored in a separate table.

In summary:

* **BCNF** primarily deals with functional dependencies and ensures that no non-trivial functional dependency exists where the determinant is not a superkey.
* **4NF** extends the normalization process to handle multi-valued dependencies, addressing issues related to the storage of multi-valued facts in a table.

It's important to note that achieving higher normal forms comes with trade-offs in terms of complexity and performance. Not all databases need to be normalized to the highest level, and the decision to normalize further should be based on the specific requirements and characteristics of the data and the intended use of the database.