Lewis' theory consists of the ideas in the following list. You can jump directly to a detailed essay by clicking on the appropriate title,

- **Valence electrons**
  Atoms contain two kinds of electrons, core and valence. Valence electrons, by definition, are the only ones affected by chemical bonding and chemical reactions.

- **Inert gas electron configurations (Lewis octets)**
  Inert gas atoms are chemically unreactive because their valence electrons are configured in a way that is unresponsive to other atoms. This electron pattern is called a Lewis octet. Other atoms exchange electrons and form bonds because this reconfigures their valence electrons into inert gas-like patterns, in other words, into Lewis octets.

- **Ions and ionic bonds**
  Some atoms create Lewis octets by transferring electrons to or from other atoms. If an atom gains an electron, it becomes a negatively charged anion. If it loses an electron, it becomes a positively charged cation. Oppositely charged ions form compounds that are held together by ionic bonds.

- **Covalent bonds**
  Other atoms create Lewis octets by sharing pairs of electrons with other atoms. The shared electron pair is "seen" by both atoms and creates an attractive force between them. This attraction is called a covalent bond.

- **Transfer or share? Energy decides**
  Whether an atom transfers or shares electrons is dictated by the change in atom energy. Electrostatic forces make electron transfer most favorable for singly charged ions, like Na+ and Cl-. More highly charged ions are hard to make, and electron sharing becomes a more favorable option.

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