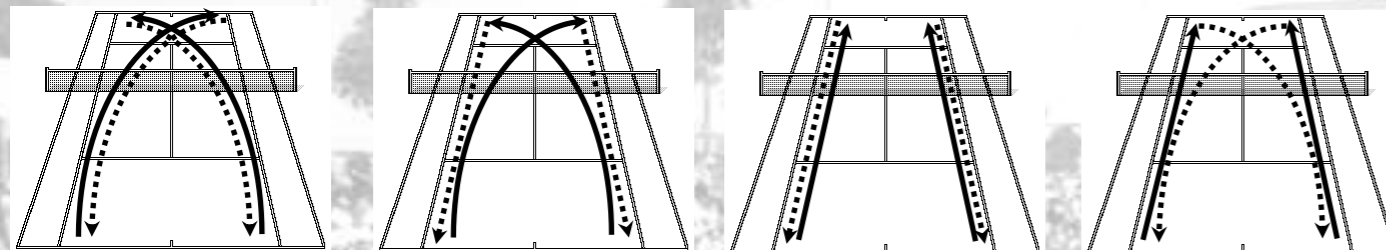


Introduction & Background

The study investigated the connection between outcome type, percentage of point outcomes and gender. The intended use of this study is to establish if tennis is played differently on the ATP and WTA Tour and assist in the tactical development of junior tennis players.

There are essentially two shot directions you can hit in tennis – Cross-Court (X) and Down-the-Line (DTL). These two choices result in four possible shot combinations.



Rule 1

X – X

Rule 2

DTL – X

Rule 3

DTL – DTL

Rule 4

X – DTL

The first shot (first symbol) is considered player A's shot (dotted line) and the subsequent shot is considered the point ending shot (solid line) by player B. E.g. Rule 2: Player A hits Down-the-Line (DTL) then player B responds with a Cross-Court (X) shot.

Methodology

- The study was conducted at Wimbledon (Grass Court) in 2008 on the ATP Tour and Wimbledon (Grass Court) in 2007 on the WTA Tour.
- Six ATP Main Draw matches, (20 sets, 178 games and 587 points) and 8 WTA Main Draw matches (18 sets, 171 games, 648 points) were selected at random. Table 1.1 outlines sample size collected for each Tour.
- The last two shots of each point were recorded to identify the point outcome rule.
- Each point outcome rule was also classified by outcome type – Winner (W), Unforced Error (Ufe) and Forced Error (Fe).

Conclusions

- Grand Slam level tennis is a game of unforced errors. Regardless of point outcome, unforced errors remained the highest outcome type on Both Tours except Rule 2 and Rule 3 for ATP Tour. (Figures 1.1-1.2 & Figures 2.1-2.4).
- Table 1.2 demonstrates there is no significant difference in the percentage of Grass Court point outcomes between the ATP and WTA Tour. Therefore, point outcome is not Tour dependent.
- Rule 1:** The highest number of unforced errors and lowest number of winners for all rules were committed by both Tours. WTA (61 / 27%) and ATP (51 / 22%).
- Rule 2:** Is not surface dependent as there was no significant difference in point outcome type between Tours.
- Rule 3:** Was by far the lowest used point outcome of all rules. ATP Tour made the lowest unforced errors (32%) and the WTA the second highest (49%) behind Rule 1 (61%)
- Rule 4:** The highest point outcome of all rules. Is not surface dependent as there was no significant difference in point outcome type between Tours.
- Tour type does not dictate the point outcome used on Hard Court on the ATP and WTA Tour.

Glossary

- Tour Type:** ATP and WTA Tour.
- Point Outcome:** The final two shots of a point as classified by one of the four rules.
- Outcome Type:** The way in which the point is concluded as classified by one of the three categories.
 - Winner (W):**
 - Clean Winner:** A point won where no touch of the ball is made by opposing player's racquet.
 - Effective Winner:** A point won where a touch of the ball is made by opposing player's racquet, but no competent attempt to return the ball was possible.
 - Unforced Error (Ufe):** A mistake made from a competent attempt where the player is not under significant pressure and is in relative control of the ball.
 - Forced Error (Fe):** A mistake made from a competent attempt where the player is under significant pressure and is not in relative control of the ball.

Discussion: ATP vs. WTA Tour Comparison

- Rule 1:** Figure 2.1 illustrates ATP Tour created on average 15% more forced errors. WTA Tour hit 5% more winners. The highest outcome type of any Rule was unforced errors. WTA Tour committed 10% more unforced errors than ATP Tour.
- Rule 2:** Figure 2.2 illustrates there is no significant difference in point outcome type between Tours.
- Rule 3:** The ATP Tour created 11% more forced errors at the expense of unforced errors. The WTA Tour committed 17% more unforced errors and hit 6% less winners than ATP Tour as illustrated by Figure 2.3. This rule appears to be the most surface dependent for point outcome type.
- Rule 4:** Only a 2% difference separate ATP and WTA Tour in the number of unforced errors committed (Figure 2.4). Speed of surface does not appear to influence point outcome type.

2008 ATP Tour Research Team – Peter McCraw, Andrew Burgess, Mat Obrien, Adrian Muscillo, Chris Johnson, Kevin Woolcott, Nathan Lundy, Michael Tucci, Aviran Reuven.

Results & Graphs

Table 1.1 – Sample Size Comparison

Wimbledon	ATP Tour	WTA Tour
# Matches	6	8
# Sets	20	18
# Games	178	171
# Points	587	648

Table 1.2 – Percentage Point Outcomes for Australian Open 2008

Wimbledon	Rule 1	Rule 2	Rule 3	Rule 4
ATP Tour	25.0	25.0	19.0	31.0
WTA Tour	28.2	23.6	14.5	33.6

* Values in percent (%)

Coaching Applications

- Coaches should train the same point outcome combinations (four rules) for boys and girls on Grass Court, independent of the player's style or specific match strategy or tactic.
- Coaches should prioritise the following when training boys and girls:
 - Rule 1** – Both boys and girls should learn to reduce unforced errors when rallying cross court. This should be reflected in the structure of drills and practice in both their purpose and the time spent hitting cross-court in relation to down-the-line directions for both rallying and point ending situations.
 - Rule 2** - Develop ability to hit winners at the expense of unforced errors on a Grass Court.
 - Rule 3** – Boys to learn to create forced errors and girls to hit winners using Rule 3 as a tactical point outcome on Grass Court
 - Rule 4** – Train decision making of 'right shot at right time' and train hitting down-the-line in the context of this 'change of direction' combination. Both boys and girls to learn to hit winners and create forced errors at the expense of unforced errors for Rule 4 on Grass Court.
- Players should focus on creating forced error outcomes at the expense of unforced errors and not focus on hitting winners at the expense of increased unforced errors.
- An understanding of the four point outcome rules and three outcome types (unforced error, forced error and winner) can serve as a tactical foundation for players through all stages of development.

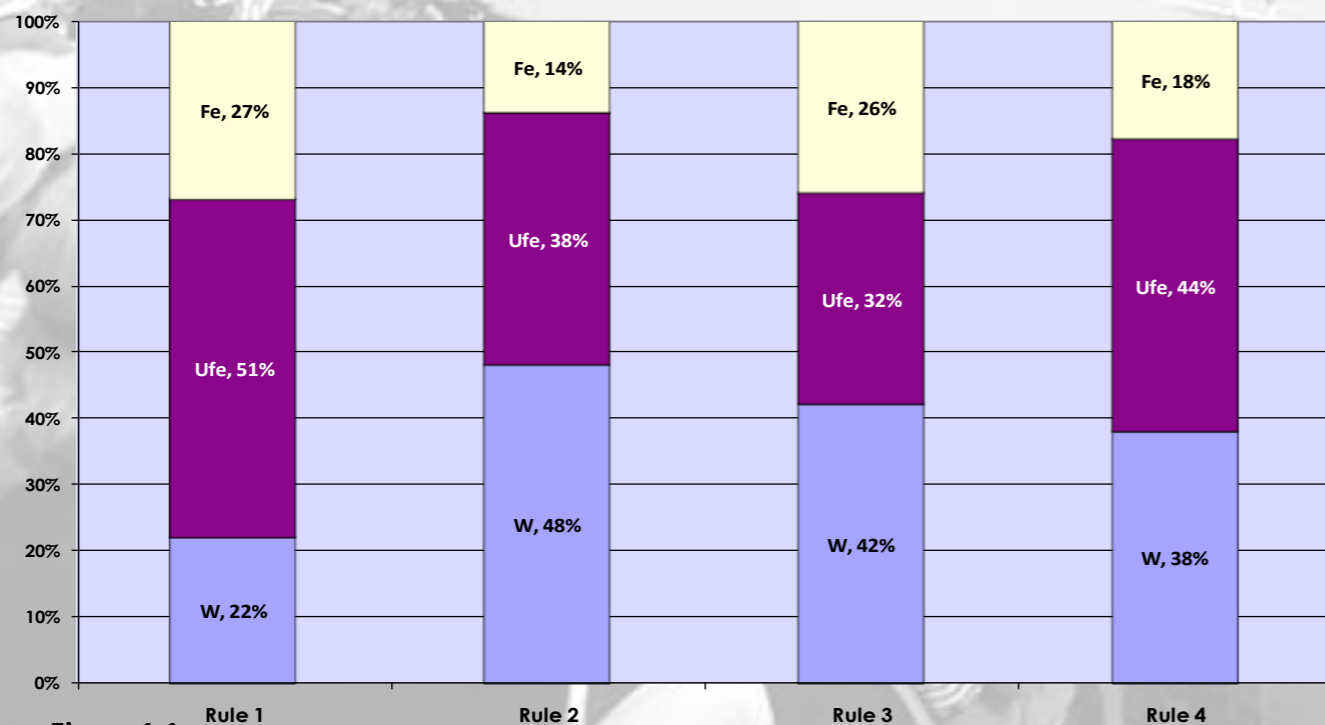
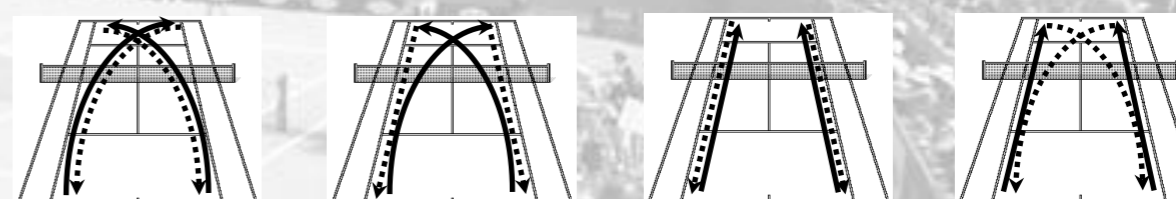
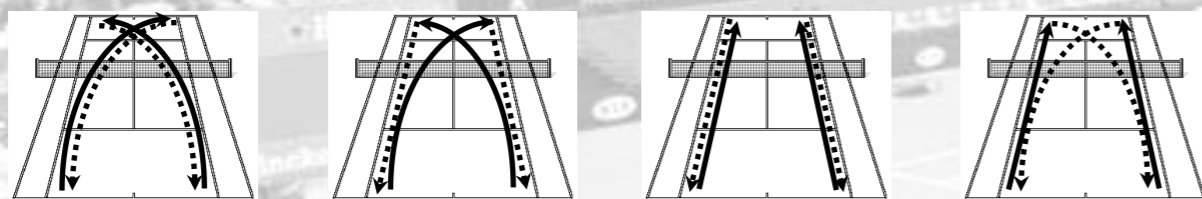


Figure 1.1

ATP Tour 2008 (Wimbledon) - Grass

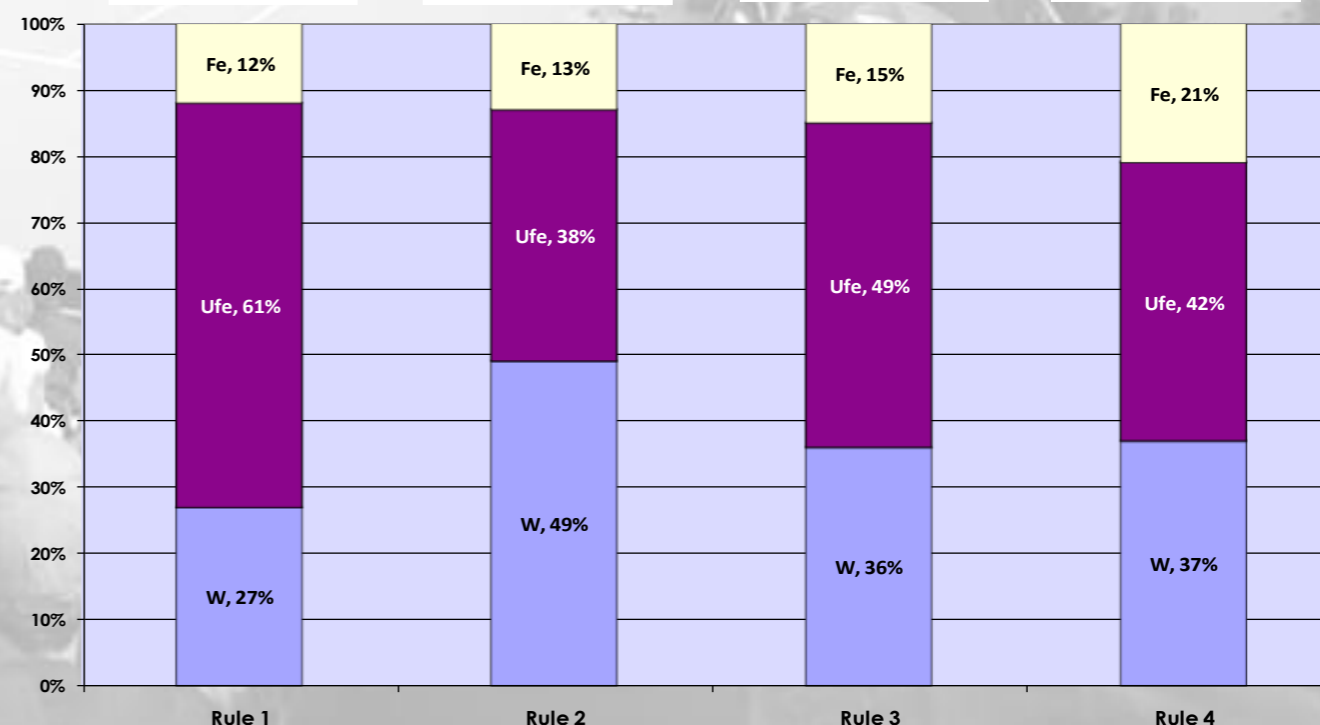


Figure 1.2

WTA Tour 2007 (Wimbledon) - Grass

Rule 1 (X – X)

Results & Graphs (b)

Rule 2 (DTL – X)

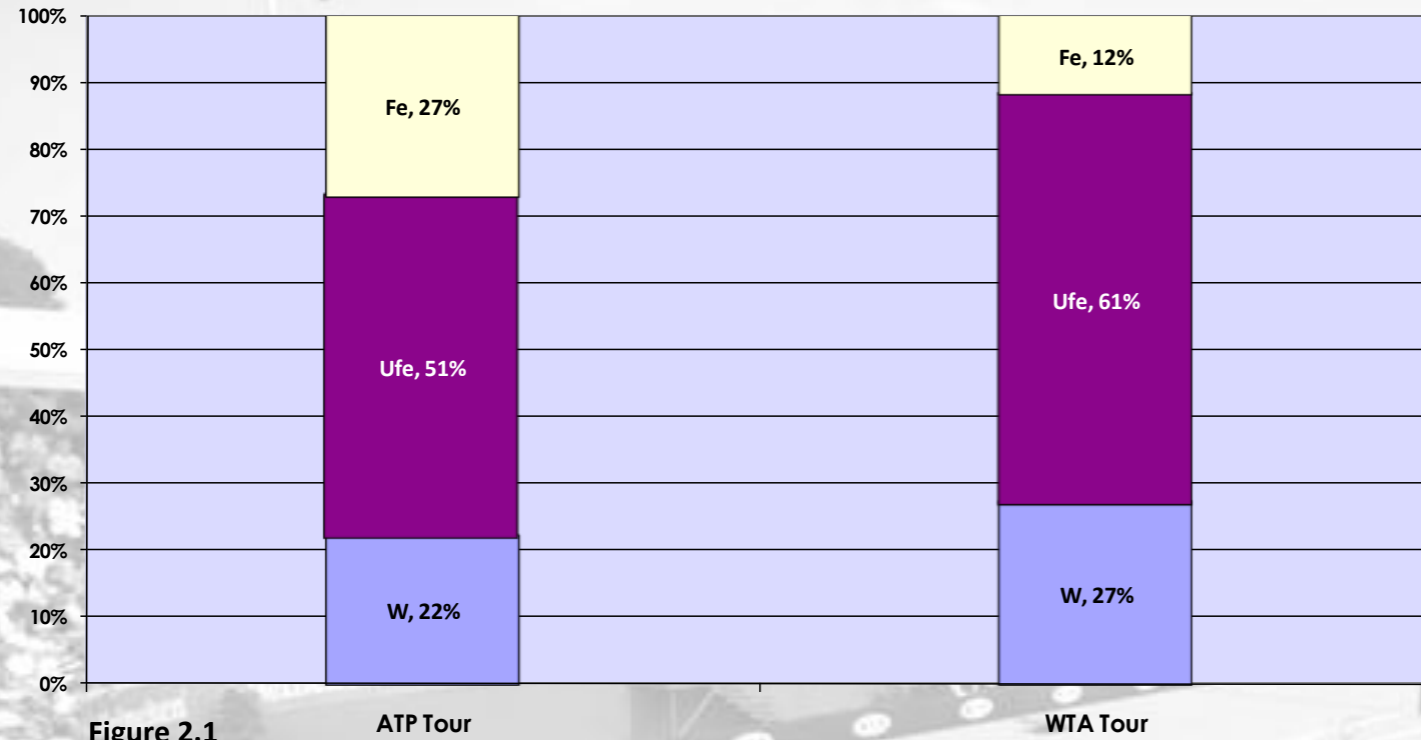


Figure 2.1

ATP Tour

WTA Tour

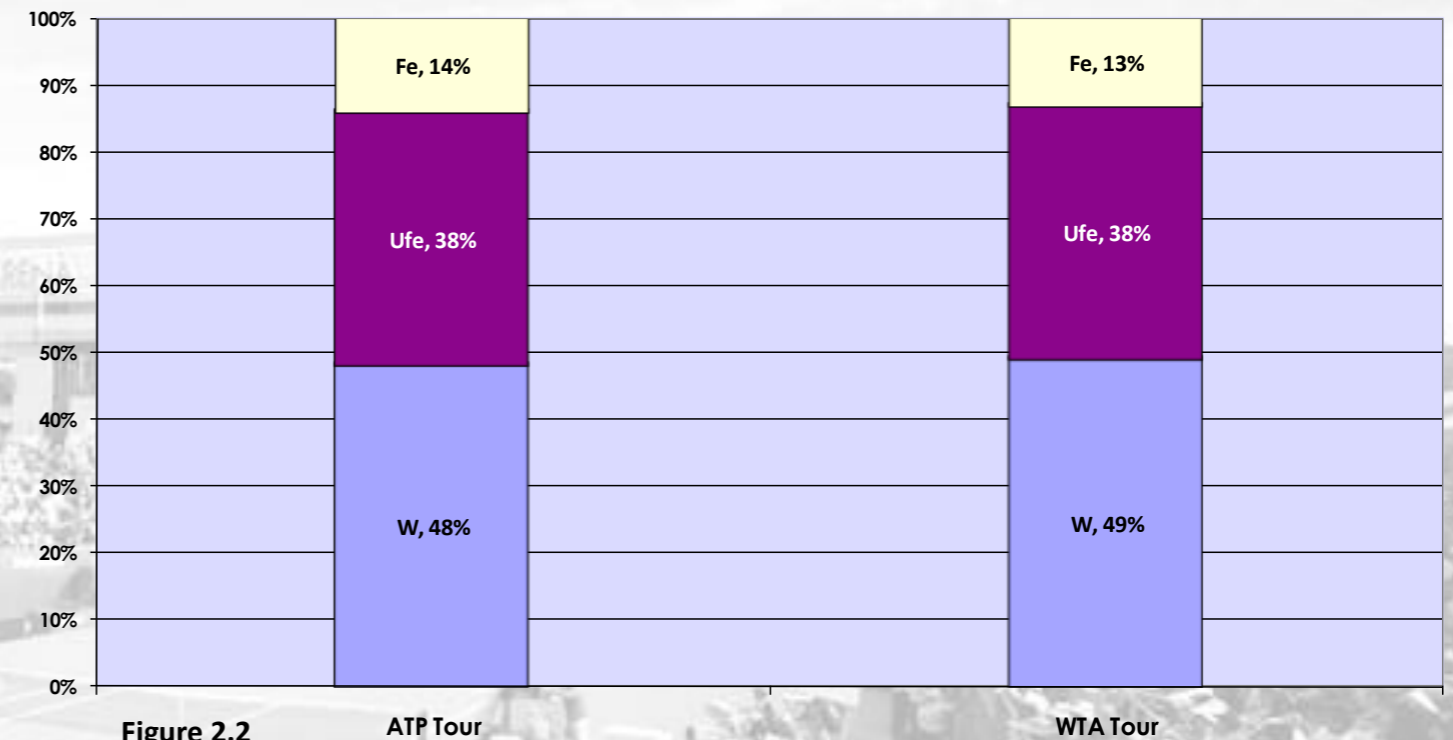


Figure 2.2

ATP Tour

WTA Tour

Rule 3 (DTL – DTL)

Rule 4 (X – DTL)

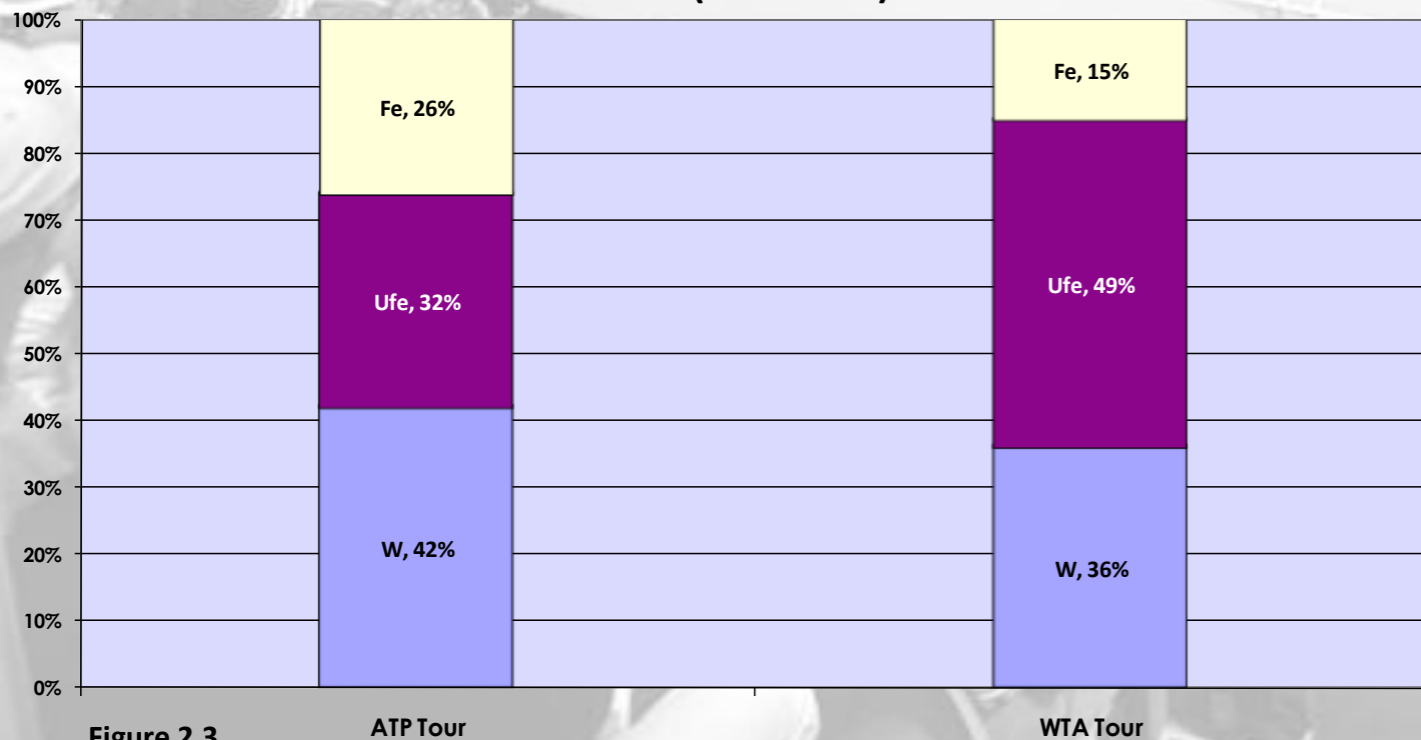


Figure 2.3

ATP Tour

WTA Tour

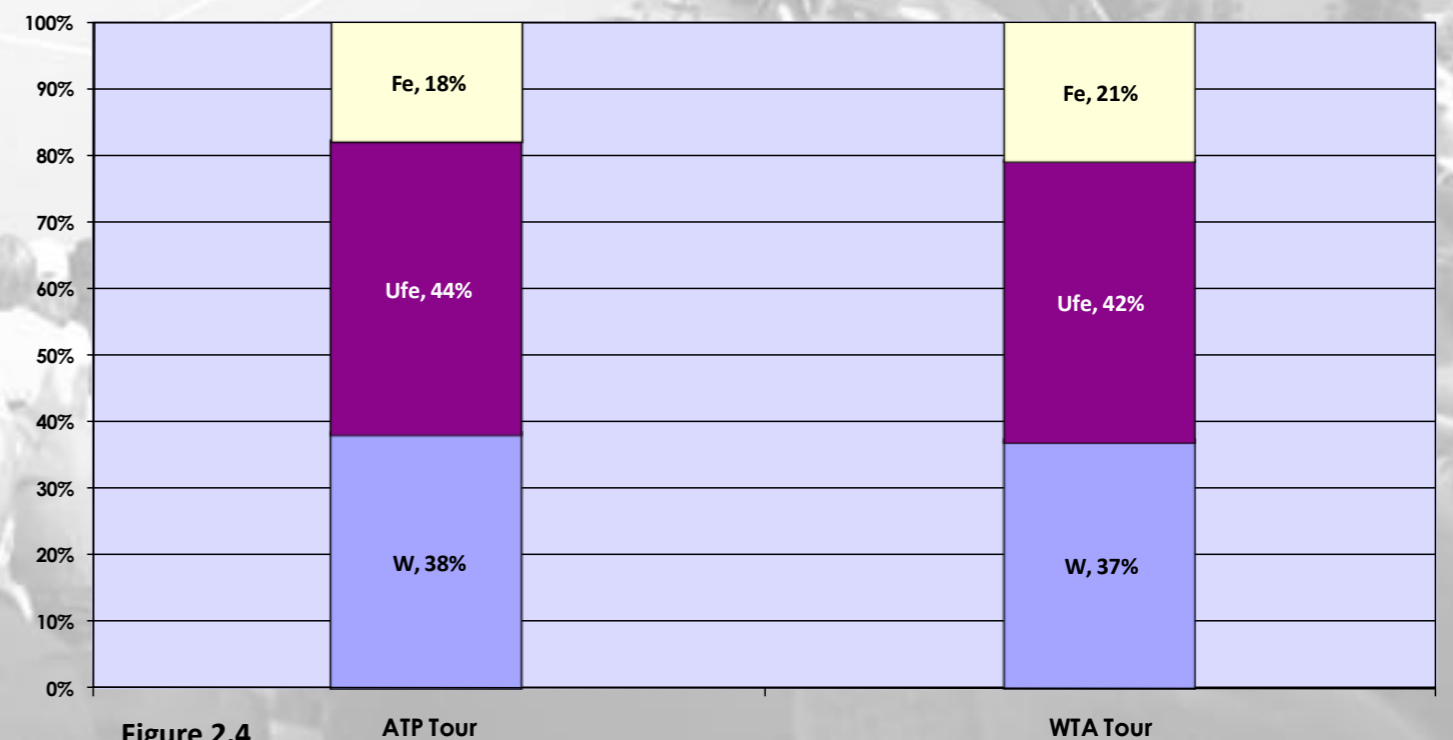


Figure 2.4

ATP Tour

WTA Tour