Sasquatch and the Intermembral Index

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Abstract:

The intermembral index (IM) for the sasquatch subject (Patty) seen in the Patterson/Gimlin (PG) film is calculated using Jeff Glickman's 1998 detailed NASI report. This paper applies his specific arm and leg measurements. In determining the actual IM index for the PG film subject, we found an unexpected result which provides previously unknown scientific evidence. This resulting novel evidence significantly increases our understanding of sasquatch quadrupedal locomotion and the apparent ease with which it is performed. **Bold text** is used for focused emphasis.

Discussion/Analysis

Sasquatch arm and leg length has to date been the subject of extremely limited analysis. The ratio of arm length to leg length in all primates to include sasquatches is known as the intermembral index (IM). Mathematically it is the total length of the bones of the arm (from shoulder to wrist) divided by the length of the bones of the leg (from hip to ankle) x 100. Or:

> arm bone length ÷ leg bone length X 100 = IM index

It is important to understand that an IM index of less than 100% means that arms are shorter than legs. An index greater than 100% means that the arms are longer than legs. Thus the 100% figure represents a boundary between greater arm length and lesser arm length.

The IM index for humans is 70% to 72 %. The IM index for chimpanzees is 106%. In gorillas the IM index (from the measurements of many subjects) varies between 117% and 120%. In orangutans the IM index is between 134 to 138%. What then can a comparison with the calculated IM index for the Patterson/Gimlin (PG) film subject tell us about that particular sasquatch? Let's find out.

One estimate of the IM index for the Patterson/Gimlin film sasquatch (Patty) was speculated as between 80 and 90 percent by Dr. Jeffery Meldrum of Idaho State University. His suggested IM numbers for the PG film subject are quoted below:

> The intermembral index is a significant measure of a primate's locomotor adaptation. The forelimb-dominated movements of the chimp and gorilla are reflected in their high IM indices of 106 and 117 respectively. Identifying the positions of the joints on the film subject can only be approximate and the limbs are frequently oriented obliquely to the plane of the film, rendering them foreshortened to varying degrees. However, in some

frames the limbs are nearly vertical, hence parallel to the film plane, and indicate an IM index somewhere between 80 and 90, **intermediate** between humans and African apes. In spite of the imprecision of this preliminary estimate, it is well beyond the mean for humans.

Dr. Meldrum correctly acknowledges that "...the positions of the joints on the film subject can only be approximate…", which is confirmed by the broad estimate he gives for Patty's IM index. However, his statement that Patty's IM of between 80% to 90% is **intermediate** needs revision. It also means that Patty's arms would be shorter than her legs.

It is appropriate that we redress Dr. Meldrum's indicated **"intermediate"** IM index. To accomplish this, we will use his African gorilla's IM index, and that of a modern human in the below calculation. However, we must first understand the term **"intermediate".** According to Merriam-Webster **intermediate** means "being or occurring at the middle place", that is in the middle, or divided by 2. Thus, if we use Dr. Meldrum's 117% (low side) for an African gorilla, and 70% (low side) for humans, the following calculations apply:

117% IM (gorilla) - 70% IM (human) = 47% (difference) ÷ 2 ("the middle place" between extremes) = 23.5%.

Thus, the correct equations to be **"intermediate**" are:

23.5% + 70% = **93.5% IM** OR 117% - 23.5% = **93.5% IM**

The resulting **93.5%** is truly intermediate between humans and African apes, rather than Dr. Meldrum's indication of between 80 and 90 percent.

While an IM of 93.5% is intermediate, it is still in the range where legs are longer than arms. As such, one must ask whether shorter arms would make sasquatch quadrupedal locomotion more difficult. Certainly, human primates with our shorter arms are not capable of such locomotion. Yet eyewitnesses of sasquatch quadrupedal locomotion report that such appears very natural and easily performed. It has also been reported by eyewitnesses that sasquatches can run with great speed in this form of locomotion. Is there a specific reason why sasquatch quadrupedal locomotion appears easy? The answer is a resounding yes!

A significantly more accurate measurement of the PG film subjects arm and leg lengths was provided by Jeff Glickman in his North American Science Institute (NASI) report. Jeff is a board-certified forensic examiner and A Fellow with the College of American Forensic Examiners. His analysis of the PG film subject provides the most precise measurements of Patty's arm and leg lengths to date. He determined, in a very detailed analysis, that the length of Patty's arms were 35.33" (43" if hand length is included), and her leg length was 34.31" (40" if foot height is included). Using Glickman's measurements, Patty's IM (without hand and foot) is calculated as:

35.33" (arm length) ÷ 34.31" (leg length) = 1.029 X 100 = 102.90% IM

The finding of 1.029 inches in arm length results in a corrected index of basically 103% for

the PG film sasquatch. Based on the accepted and standard methodology for determining a primates IM index, 103% is the correct IM for the PG film subject. This means that **arms are longer than legs** by approximately **one inch**.

Of even more interest, if we calculate Patty's IM index to include the hand length (43") and the foot height (40") we get an even greater IM percentage:

43" (including hand) ÷ by 40" (including foot height) = **107.5% IM**

This means that the hominin in the PG film has arms that are **3" longer than her legs**. For this biologist, I firmly recommend and find that science is better served using the greater IM index. The IM index of 107.5% is a more accurate index because it indicates the totality of arm and leg measurements. The greater IM index provides a much clearer understanding of sasquatch quadrupedal locomotion based on the totality of their arm and leg measurements. It also helps us understand the ease with which it is used when they determine it to be necessary.

This anatomical variation from other human-like characteristics means that while Patty and other sasquatches possess bipedal locomotion, it is their **arms longer than legs** that facilitate their quadrupedal locomotion. Thus, they are very capable of virtually horizontal (*flat back*) quadrupedal locomotion. The below photo (Fig.1) is from an analogue video of a **repeatedly seen sasquatch** moving through several rows of corn on private property in Texas. Although this was quadrupedal locomotion, it was of normal walking speed.

Fig. 1

Conclusion

For field researchers and academics alike, the greater IM index of 107.5% is new anatomical evidence. While my own research has revealed that sasquatches possess numerous anatomical characteristics which are virtually homologous with extant humans, an IM index of 107.5% is

not one of them. However, we must also acknowledge that this single characteristic does not of itself make a sasquatch some form of nonhuman primate as many have been influenced to believe. Such is not possible due to the many other human-like characteristics documented for this extant primate species.

Quadrupedality likely contributes to sasquatches ability to remain concealed in their wooded environment by lowering their visual profile. And with their reportedly high-speed running in this mode, they can rapidly disappear when they find it necessary.

References

The NASI Report: Toward the Resolution of the Bigfoot Phenomenon, Jeff Glickman, Diplomat American College of Forensic Examiners, June 1998.

Response to the Intermembral Index Issue, Bobbie Short, 2010.

Merriam Webster Online Dictionary, 2021 edition.