I. ORTHODONTIC TECHNICS FOR THE HEALTH CENTER PROVIDER

II. DENTAL BIOMETRICS

PARK DuVALLE COMMUNITY HEALTH CENTER
LOUISVILLE, KENTUCKY

LAMONT R. GHOLSTON, DMD, MPH, MSD

OBJECTIVE:

Encourage More Dentists To Provide Orthodontic Care

- A. 'Use What You Got To Get What You Want'
 - -Maximize in-house instruments and supplies
 - -Reduce office overhead in treatment

- B. Focus Your Attention for Enlightened Perspectives
 - -Alexander the Great
 - -Smokey the Bear

DIAGNOSTIC CAST SET-UPS: AN INVALUABLE TECHNIC











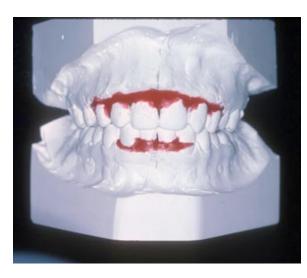




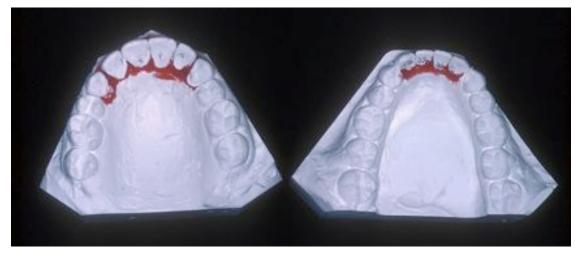












CAST SET-UPS AND STRIPPING 'FINDING THE FOREST AND THE TREES'











Interdental Reapproximation: Stripping

25 - 26 - 27 - 28 - 29 -		=	0.356mm	0.406mm	0.445mm	0.457mm	3.503mm : : : : :	0.533mm	0.503mm	0.635mm
24 - 25 - 26 - 27 - 28 - 29 -	=	=		:			0.300mm		0.503mm	0.835mm
24 - 25 - 26 - 27 - 28 -	=			1	1	0.457mm	u.soumm	U.SJamm	0.509mm	0.635mm
24 - 25 - 26 - 27 -	=	*****		1	1	0.457mm	u.soumm	U.533mm	0.509mm	0.635mm
24 - 25 - 26 -	-	*****		1	0.445mm	0.457mm	u.sosmm	0.533mm :	0.509mm	0.635mm
24 - 25 -				1	0.445mm ;	0.457mm	u.sosmm	U.533mm	0.509mm	0.635mm
24 -	_	20000	0.356mm	0.406mm	0.445mm	0.457mm	g.seemm	0.533mm	0.509mm	0.635mm
							O' ENG.	0.032	A PARK	
		*****			1	1	200		eres Edwa	:
22 -	-	*******	2.		:		1	1	1	
-	_		-	1	1	4			100	
		-		1			-	1	1.	1
19"	-	_		1.	- 4	- 4		4.0	100	1
Lower										
Total -		-	4.272mm	4.872mm	5.340mm	5.484mm	6.095mm	6.401mm	6.706mm	7.620mm
14"			10	:	- 3	1	1	- 1	i	
13 -		-	1	1	- 1			4	:	:
12		*****	:	:				4	1	
11			:		- 1	1.5	2	1	20	:
10				: 7		-	1	T	9	100
. 9				1	1	2.8		-	-	- 1
8		*****		1100	95900	- 3				
7	-	-	0.356 mm	0.406mm	0.445 mm	0.457mm	0.508mm	0.533mm	0.559mm	0.635mm
6	-	-					2		1	
5	-		1	1						- 8
4	-	_	2	= 1			1	1	3	
Upper 3°	and the contract of	_	1	15	- 3		3.5	- 61		#0
	mm	in mm	0.014" aw	-0.016"aw	0.0175"av	v 0.018"aw	0.020" aw	0.021" aw	0.022" aw	0.025" ar
Number To	ooth	Actual Amount of		Guide to an	mount of re	duction by	Archwire	AW) SIDE II	minimoo	

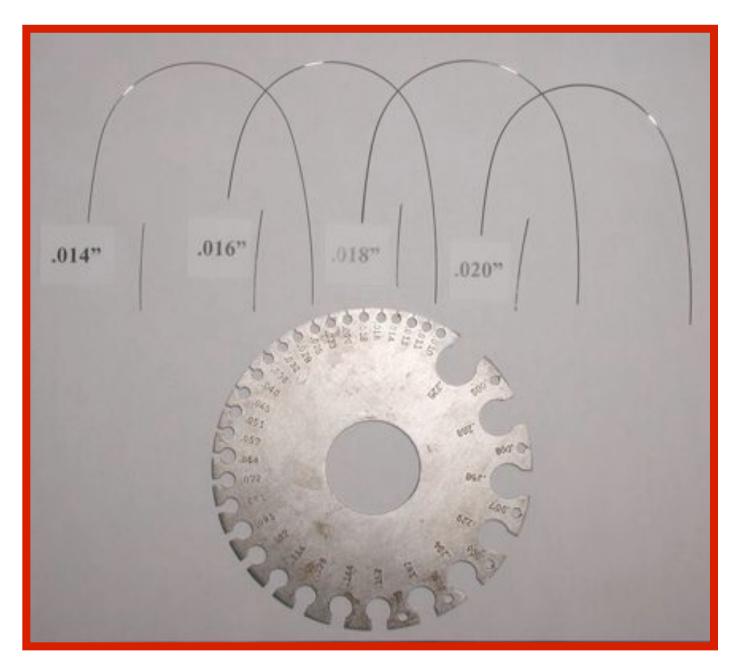
Lamont R. Ghoiston, DMD,MPH,MSD

Remember: The amount of reduction per tooth surface is about one-half the size of the specific archwire.
 This is important if the mesial surfaces of the first molars are stripped or if different size archwires are used.

[&]quot; 0.014" X 25.4mm / 1" = 0.356mm; Example: 12 (stripped tooth areas) X 0.356mm = 4.272mm of total ename! stripped

ARCHWIRE SIZES CAN BE DETERMINED WITH A WIRE GAUGE.

- •ARCHWIRES
 ARE LONGER
 THAN NEEDED.
- •EXCESS WIRE CAN BE USED AS A MEASURING TOOL IN STRIPPING.
- * THE EXCESS WIRE IS AN INEXPENSIVE, RENEWABLE MEASURING TOOL.









BRASSELER #8392.31.016









POST TREATMENT











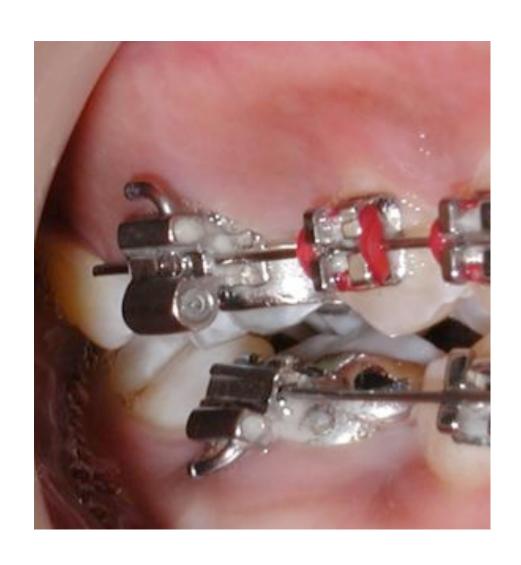
BEFORE TREATMENT



AFTER TREATMENT

Some Solutions To Recurring And Annoying Problems

Calculus Clogged Bracket Slots



REAMING SLOT WITH SMALL #35 ENDO FILE





BENT BRACKET – WIRE ENGAGED



BENT BRACKET – WIRE REMOVED



BENT BRACKET (SIDE VIEW)



SCREWDRIVER IN BRACKET

BENT BRACKET SLOT

& SCREWDRIVER





GOOD BRACKET



MODERATE CROWDING

CROWDING STRIPPING ALIGNERS



RETAINER AND ALIGNER CHEWIE



CHEWIE IN USE



POST-TREATMENT



REMOVING COMPOSITE WITH RONGEURS







CHEAP TRICKS FOR BETTER IMPRESSIONS



LOWER IMPRESSION TONGUE SPACE OBLITERATED WITH PLAY-DOH®



INEXPENSIVE DE-BUBBLIZER

- •1/3 WATER
- •1/3 ALCOHOL
- •1/3 LIQUID SOAP

SHAKE WELL AND SPRAY









SEPARATORS
OVER
BRACKETS



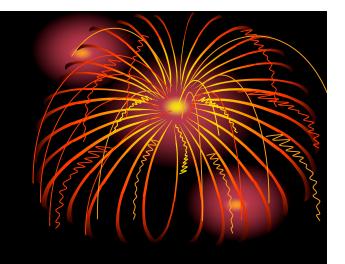




CROWNS ARE MORE VISIBLE

OCCLUSION IS MORE VISIBLE





SOME COMMON DENTAL PROBLEMS IN THE TREATMENT OF CHILDREN AND ADULTS

ANTERIOR CROSSBITES



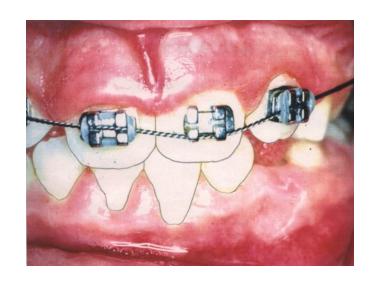
CORRECTION OF ANTERIOR CROSSBITES WITH FIXED APPLIANCES

Type Crossbite	Criteria	Appliance	Auxiliaries
G – 1		2 X 4 strap up, Preferred pattern. 2 X 2 strap up, If necessary. Flexible archwire (twist; NiTi: .014" or .016")	Usually none
G – 2	> ½ overlap (overbite of upper centrals, laterals)	2 X 4 strap up, Preferred pattern. 2 X 2 strap up, If necessary. Flexible archwire (twist; NiTi: .014" or .016")	 Bite plate Occlusal composite Incline planes(s) Guray Bite Raiser (GAC International Inc.)

Lamont R. Gholston, DMD, MPH, MSD 1983

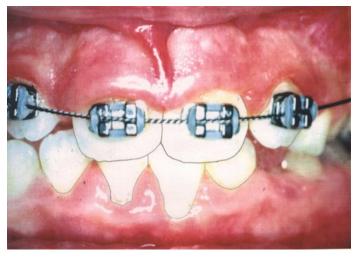


PRETREATMENT



LIFT AND
SEPARATE

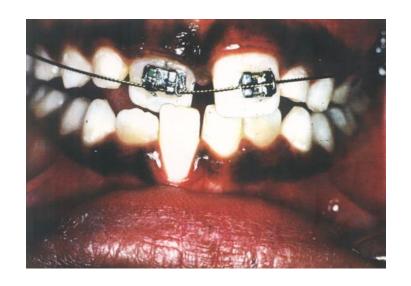
1 MONTH LATER



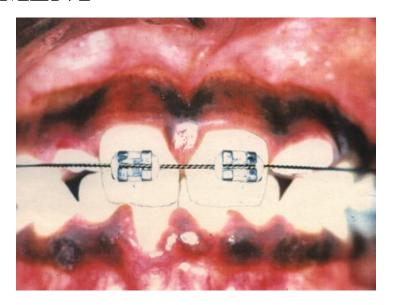
LEVELING CENTRALS



PRETREATMENT



LIFT AND SEPARATE

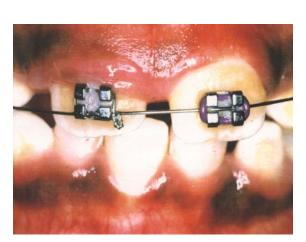


LEVELING CENTRALS

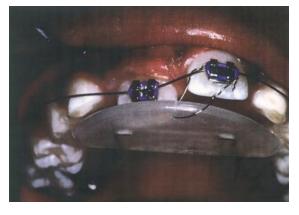
1 MONTH LATER



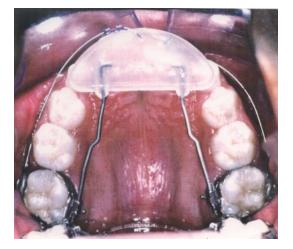
PRETREATMENT



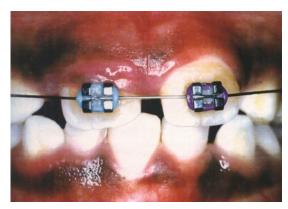
LIFT AND SEPARATE



STRAP-UP & BITE PLATE



BITE PLATE



LEVELING CENTRALS





GURAY BITE RAISER











G-1
ANTERIOR
CROSSBITE
WITH A
TWIST













INITIAL APPLIANCE

FLEXIBLE ARCHWIRE

BITE OPENING

GURAY BITE RISER

PROGRESS PHOTO:

CORRECTED ANTERIOR CROSSBITE





15 MONTHS AFTER CROSSBITE CORRECTION







NO ADDITIONAL ORTHODONTIC TREATMENT



ANTERIOR CROSSBITE CORRECTION SOME COST CONSIDERATIONS

	APPLIANCE		
ISSUES	REMOVABLE	FIXED	
ISSULS	(Hawley Spring)	(2 X 4 Strap Up)	
LOSS OF APPLIANCE	Great potential	Minimal potential	
COMPLIANCE	Patient Control	Provider Control	
APPLIANCE	MUCH DOWNTIME	SHORT DOWNTIME	
BREAKAGE	LAB TIME, MAILING	-CHAIR TIME, -INVENTORY	
APPLIANCE	ALGINATE IMPRESSION(S)	SEPARATORS, BANDING, BONDED BRACKETS,	
PREPARATION	POUR MODELS, LAB TIME	ARCHWIRE PLACEMENT	
COSTS			
-Initial	\$ 70 – 140	\$ 40 – 60	
-Repairs	\$ 20 – 50	\$20 - 40	
TIME FOR CORRECTION	3-6 MOS. WITH ADJUSTMENTS	1-2 MOS. WITH ADJUSTMENTS	
	3-0 IVICS. WITH ADJUSTIVIENTS	1-2 WICS. WITH ADJUST WIEN 15	

CAUTION: In some states, Medicaid may only pay for a removable appliance.

DIASTEMAS

'THE WIDE OPEN SPACES'

NON-ORTHODONTIC DIASTEMAS

- A. NORMAL IN PRIMARY DENTITION EVEN WITHOUT HABITS
- **B. PRIMATE SPACES**
 - DISTAL TO MAXILLARY LATERALS
 - MESIAL TO MANDIBULAR CANINES
- C. MIDLINES DIASTEMAS NORMAL AT AGE 7 12
- D. "UGLY DUCKLING" DEVELOPMENTAL STAGE
 - -TENDS TO SELF CORRECT
 - -AFTER PERMANENT CANINES ERUPT

Apr	Incidence of Diastema
. 6	97 C
6 - 7	88%
10-11	48%
12-18	79

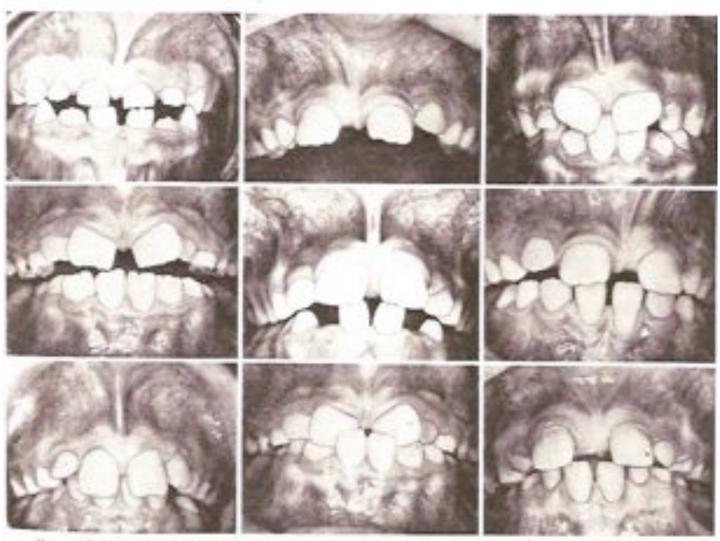


Figure 7-39 Anterior diastemas associated with various shapes and sizes of labial frena. The formum is not necessarily the cause of the spacing. (Courtesy W. R. Mayne.)

THE CAUSES OF DIASTEMAS

- **A.DEVELOPMENTAL**
- B. GENETIC FACTORS: (1) INTERARCH AND
 - (2) INTRA-ARCH DISCREPANCIES
- C. ETHNIC OR RACIAL GROUP PREDISPOSITION
- D. THICK, FIBOUS FRENA WITH INCOMPLETE BONE SUTURES
- E. ROTATED TEETH

THE CAUSES OF DIASTEMAS

- F. PATHOLOGICAL CONDITIONS: DECAY, CYSTS, PERIODONTITIS
- G. HABITS
- H. MACROGOSSIA
- I. ENDOCRINE IMBALANCE ACROMEGALY
- J. CONTINUED MANDIBULAR GROWTH

WHY SHOULD I TREAT DIASTEMAS?

•SPEECH OR ESTHETIC CONCERNS •EFFECTS SELF ESTEEM •SPACE IS SOURCE OF FOOD IMPACTION

SUCCESSFUL TREATMENT OF DIASTEMAS

•REMOVE THE CAUSE(S)

•CORRECT TOOTH POSITIONS – REMOVE OR REDUCE SOFT TISSUE INFLUENCE

•CREATE NEW BALANCE BETWEEN OCCLUSION
AND MUSCULATURE

ORTHODONTIC DIASTEMAS

AFTER TREATMENT

•TIPPED TEETH

• 'WINDOW' SPACES MESIAL TO CANINES

DIASTEMA TREATMENT FOR STABILITY

•MAINTAIN PRETREATMENT INTERCANINE WIDTH

•INTRUSION OF INCISORS

•LINGUAL CROWN TORQUE

•DISTAL ROOT TIPPING – 'ARTISTIC BENDS'

•OVERSIZED CROWNS, COMPOSITE ADDED

DIASTEMAS DIFFER!!! SO DOES THEIR MANAGEMENT

- DIFFERENTIAL DIAGNOSIS
- COOPERATION & COMMUNICATION
 BETWEEN PATIENT AND PROVIDER
- LONG TERM RETENTION



VERSATILITY OF NONEMERGENCY SPLINTS



10 YEARS PRETREATMENT



INITIAL VISIT



SEVEN YEARS
AFTER
INITIATION OF
ORTHODONTIC
TREATMENT





ELEVEN YEARS AFTER
INITIATION OF
ORTHODONTIC
TREATMENT

TWO PHASE PLAN OF TREATMENT

(1) ENDODONTIC THERAPY

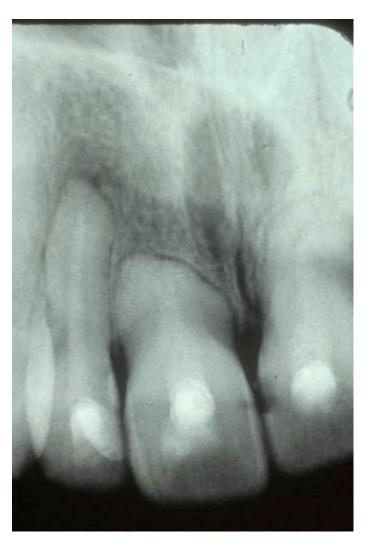
(2) SPLINT STABILIZATION



GROOVING OF TEETH AND WIRE ADAPTATION



ENDODONTIC FILLS





COMPLETED ENDODONTIC THERAPY







ONE YEAR RECALL, SUGGESTING CONTINUED ARREST OF APICAL ROOT RESORPTION

An endodontic-orthodontic technique for esthetic stabilization of externally resorbed teeth



Dr. Gholston

Lamont R. Gholston, D.M.D., M.P.H., M.S.D., and Gordon D. Mattison, D.M.D., M.S.** Louriville, Ky.

Previous studies reveal that external root resorption is often coincident with orthodortic therapy. Some investigators have reported that root resorption ceases when orthodortic therapy is terminated. However, this is not always the case. The purpose of this article is to present an 11-year history of an unusual case in which tool-resorptive processes continued for 3 years after orthodortic treatment had been discontinued. The article also describes and discusses a combined endodortic-orthodortic approach to halt external root resorption and stabilize mobile maxillary anterior teeth. Calcium hydroxide therapy was instituted to inhibit inflammatory apical root resorption. A rectangular orthodortic wire was adapted and inserted intracoronally to splint the teeth esthetically. The advantages and disadvantages of this intracoronal splinting technique are compared with other extracoronal splinting methods. Examination of one-year recall radiographs suggested continued inhibition of the root recorption. Masticatory function was restored for the patient. Considerations for monitoring patients with this problem are discussed.

Key words: Tooth mobility, external root resorption, calcium hydroxide therapy, splint, esthetics

AM J ORTHOD, 83(5): 435-440, May 1983





WIRE LIGATION



INTRACORONAL WIRE





CIRCUMCORONAL COMPOSITE



RESIN BONDED RETAINER

OUR SOLUTION: RESIN BONDED RETAINER (MODIFIED)







Table I. Fulfillment of criteria for acceptable anterior splints

Technique and author	Endedentic therapy	Extretics	Immobili- zation	Fixa- tion	Hard or soft tissue health	No trauma to teeth
Rein-bonded retainers						
Grobton et al. (piesess study)	**	++	**	44	**	++
Howe and Deneby	90.00	++	**	**	++	
Rochette ²		**	++		**	**
Wood*		**	**	* *	++	**
Livaditis and Thompson ¹⁶	in in	**	++	++	**	++
Intracoronal wire						
Mattings, et al.16	44	++	++	++	++	
Choiston and Matteon®	++	++		++	++	
Klassman and Zucker ^{te}	*	+	++	++		-
Circumcoronal composite acid etc	fied					
Stoller and Goven ¹⁶		*		-		++
Wire ligation					733	**
Stoller and Green ¹⁷	+"		4.6	**	+	**
Greenfield and Nathanian ¹⁴	-	400			**	**
Bonded orthodontic grid/wize pa	nd)					
Eccenberg**	-	**		6+		4+
Acrylic aplians						
Huget et al.*	-			++	1.00	
Stowart*	-	-	++	++		++

 ^{* *} Acceptable; ++ * sery acceptable; - * underivable; -- * very underivable.

Endodontic considerations in the design of acid-etched anterior splints for patients with reduced periodontal support

J. Prosthetic Dentistry 54(1):29-33, July 1985

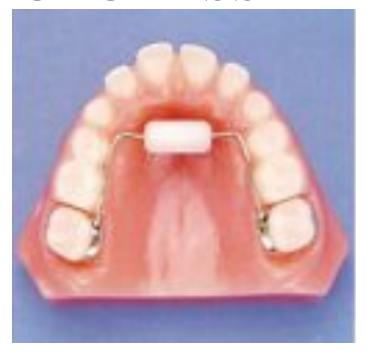
Lamont R. Gholston, D.M.D., M.P.H., M.S.D., Gordon D. Mattison, D.M.D., M.S., and Vivian C. McCann, D.M.D.

University of Louisville, School of Dentistry, Louisville, Ky.

"DO BAD HABITS LINGER?"

TONGUE THRUSTING

THE BLUEGRASS APPLIANCE



TONGUE THRUSTS, STRIPPING, SPLINTS









5 YEARS POST INITIAL TREATMENT





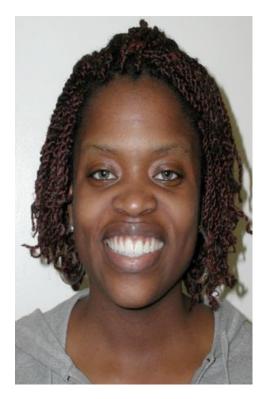
PATIENT FELT TEETH WERE FLARING.











SYSTEMIC

CONSIDERATIONS

THE MOUTH REALLY IS PART OF THE BODY.

GINGIVAL HYPERTROPHY

A CHALLENGE TO TOOTH MOVEMENT

SOME CAUSES:

DILANTIN PREGNANCY

ORAL CONTRACEPTIVES MENSES

CYCLOSPORINE PUBERTY





14 YEARS OLD PRETREATMENT





14 YEARS OLD PRETREATMENT





ALLERGIC REACTION
TO ANTIBIOTICS –
STEVENS-JOHNSON
SYNDROME





14 YEARS OLD PRETREATMENT





ALLERGIC REACTION
TO ANTIBIOTICS –
STEVENS-JOHNSON
SYNDROME





MID ORTHO TX, POST STEVENS-JOHNSON SYNDROME

POST TREATMENT







STEVENS-JOHNSON SEQUELAE

•NO APPARENT ALVEOLAR BONE LOSS





•GINGIVA TENDS TO RECOVER WITH GOOD ORAL HYGIENE

GUIDING PRINCIPLES

- Not every space can be closed or should be.
- Every occlusion with crowding does not need extraction(s).
- Recognition of Unplanned Benefit can be as Beneficial as Planned Rigidity.

DENTAL BIOMETRICS: IDENTIFICATION AND FORENSICS

THE UNDERAPPRECIATED POTENTIAL OF THE DENTAL PROFESSION

WHAT IS BIOMETRICS?

 THE STUDY OF METHODS TO RECOGNIZE THE UNIQUE INTRINSIC PHYSICAL OR BEHAVIOR TRAITS IN HUMANS

DENTAL BIOMETRICS?

STUDYING UNIQUE DENTAL TRAITS

Biometric Traits

























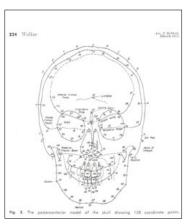






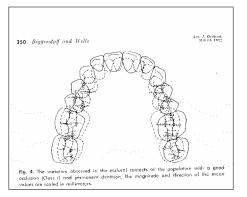
1972 SYMPOSIUM: USE OF COMPUTERS IN ORTHODONTIC ANALYSIS & DIAGNOSIS

DR. GEOFFREY WALKER
U of Michigan



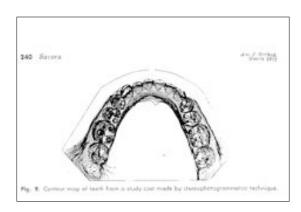
DR. ROBERT BIGGERSTAFF

U of Kentucky



AM. J. ORTHOD. MARCH 1972

DR. BHIM SAVARA
U of Oregon



THE
DENTAL
CLINICS
OF
NORTH
AMERICA

IN 1977, FORENSIC DENTISTRY AND ANTHROPOLOGY WERE LINKED. SINCE THEN, THE CONNECTION MAY HAVE BEEN DE-EMPHASIZED.

Vol. 21, No.1

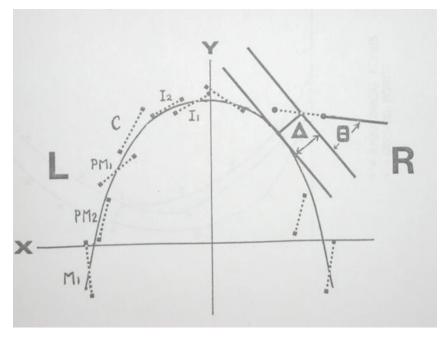
Jan. 1977

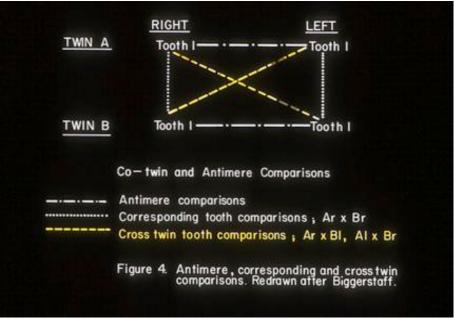
FORENSIC DENTISTRY: LEGAL OBLIGATIONS...FOR THE PRACTITIONER

Craniofacial Characteristics as Determinants of Age, Sex and Race in Forensic Dentistry	85
Robert H. Biggerstaff	
APPENDICES 1. Forensic Deutistry and the Assessment of Skeletal Ago Using Hand-Wrist Film Standards Robert H. Biggersteff	159
II. Foresaic Dentistry and the Human Dentition in Individual Age Estimations	167

THE PROMISE OF DENTAL BIOMETRICS MAY COMBINE:

- 1. WALKER'S BIOMETRIC OCCLUSAL MODEL (MODIFIED)
- 2. BIGGERSTAFF'S TWIN MODEL





THE MATHEMATICAL DEFINITION OF A 'FORM' HAS A QUALITY OF PRECISION WHICH WAS QUITE LACKING IN OUR EARLIER STAGE OF MERE DESCRIPTION; IT IS EXPRESSED IN FEW WORDS OR STILL BRIEFER SYMBOLS, AND THESE WORDS OR SYMBOLS ARE SO PREGNANT WITH MEANING THAT THOUGHT ITSELF IS ECONOMIZED.

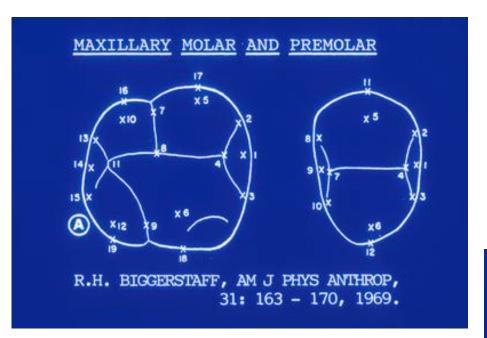
D'ARCY THOMPSON (1942)

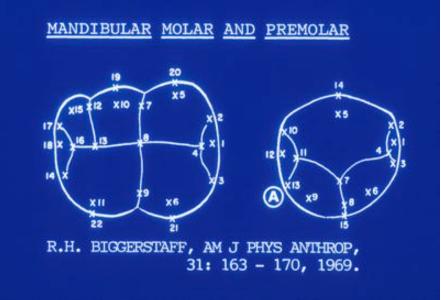
MY CHOICE OF A BIOMETRIC TRAIT IS:

FOURTH DEGREE POLYNOMIAL EQUATIONS ARE OF THE FORM:

$$Y = a_0 + a_1 X + a_2 X^2 + a_3 X^3 + a_4 X^4$$

THIS APPROACH REQUIRES RELIABLE MEASUREMENTS ON TEETH





TWINS

NATURE'S CONTROLLED EXPERIMENT















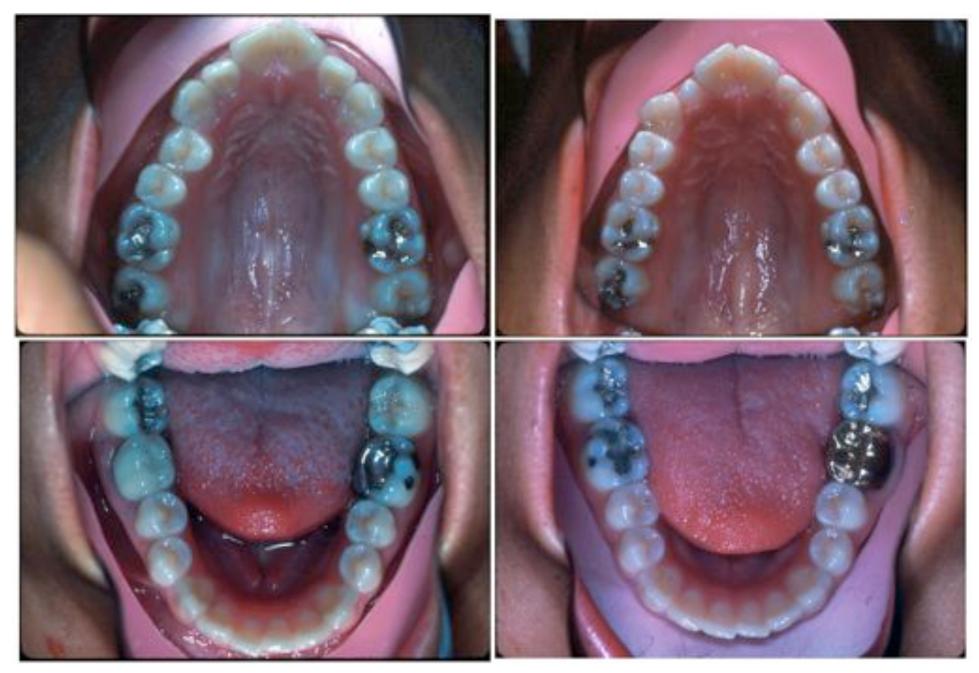






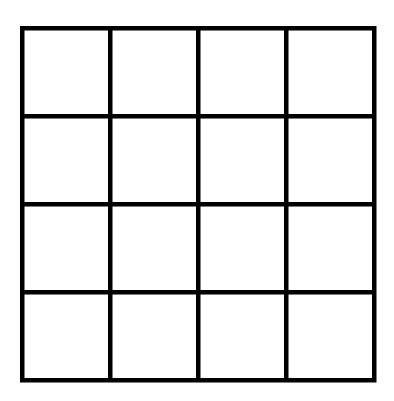






ARCH FORMS ARE UNIQUE

SOMETIMES WE MISS THE OBVIOUS. HOW MANY SQUARES ARE THERE?



TOOTHPRINTS IS BASED ON THIS PREMISE OF UNIQUE DENTAL ARCH FORMS

Emergency Contacts

Local Police

State Police

E.B.I. Headquarters

202-324-3000

Individual FBE Field Offices serve as primary points of costact for persons requesting FBI assistance. For further information shout FIII services or to request assistance, contact a Crimes Against Children Coordinator at your local FBI Field Office. To locate the office in your area, see the Wish sits www.Mager.

National Center for Missing and Exploited Children (NCMEC)

In the U.S. and Canada, cell 1-800-843-5678. When dialog from Mexico, call 001-800-843-5678. When dialog from Europe, cell 00-800-0843-5678.

The NCMEC also has a Web site that can be reached via www.missingkids.com or www.ncmec.org. The Web site has valuable information and a Hotline where you can report a missing child or the sighting of one.

America's Missing: Broadcast Emergency Response (AMBER)

In 2011, NCMEC launched America's AMBRER Plan.
To date, "At states have adopted the AMBRER Plan.
To date, "At states have adopted the AMBRER Plan.
The AMBRER Plan is a woluntary partnership between
law-embreroment agreacies and broadcasters to activate
an urgout bulletin (AMBRER Alort) in the most serious
child-abduction cases. Broadcasters was the Emergency
Alort System (EAS), formerly called the Emergency
Broadcast System, to air a description of the abductod
child and suspected abductor. The goal of AMBRER Alort
in to instantly galvanion the entire community to assist in
the search for and safe return of a lost child. You can get
more information about the AMBRER Alort Emergency
Plan via www.miseingkids.com or www.netmoc.org.



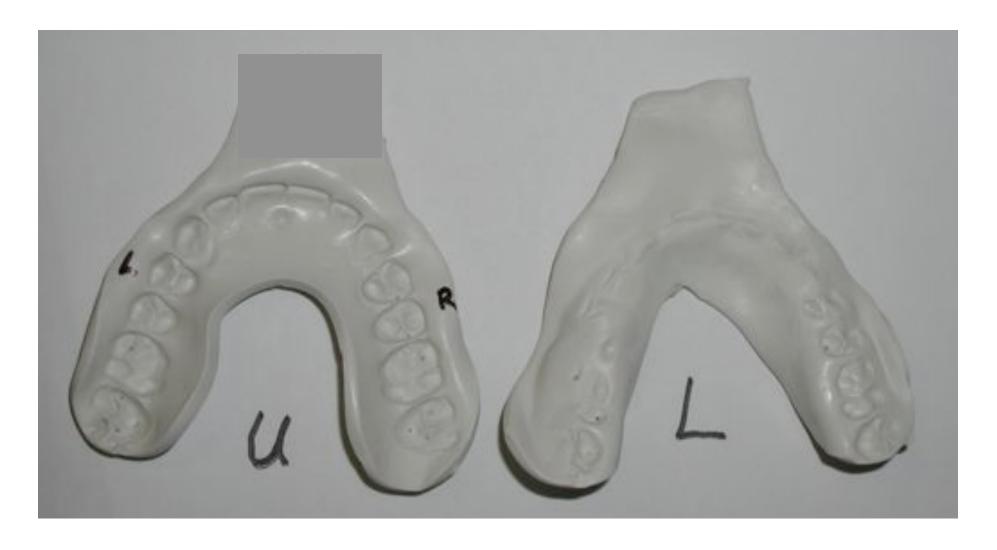
0200 Kerr Corporation

Lb. No. 32417 Rev. 0

A Toothprints
dental ID takes
only a few minutes.
It's comfortable for
your child and gives
you peace of mind.
Hopefully, you'll
never need to use it.



FOLLOWING THE MANUFACTURER'S INSTRUCTION



DETAILED UPPER - INSUFFICIENT LOWER

JADA, 138(9): 1234-40, SEPT. 2007 RESEARCH An evaluation of DNA yield, DNA quality and bite registration from a dental impression wafer Mark A. Ellis, DDS, MSD; Fengyu Song, DDS, MS, PhD; Edwin T, Parks, DttD, MS; George J. Eckert, MAS; Jeffrey A. Dean, DDS, MSD; L. Jack Windsor, PhD aw enforcement agencies regularly ask dentists for assistance in identifying unknown living and **Background.** The authors determined the deceased children. Tradiamount and quality of the DNA captured by a

in the impression wafer.

CONCLUSION.

tionally, they have used radi-

ographs and patient files. However,

with the decrease in dental caries

owing to rigorous preventive pro-

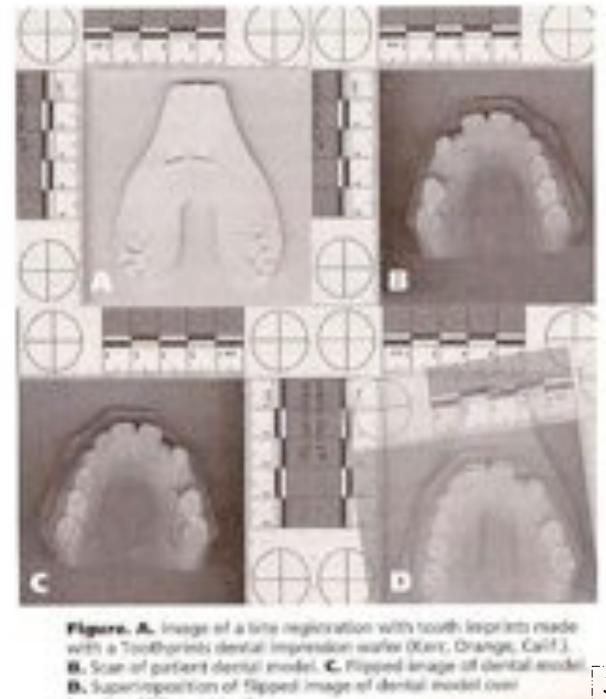
grams, many children do not have

The dental impression wafers captured DNA but not in high quantities. They did not produce an accurate representation of the dentition.

bite impression wafer and analyzed any inaccuracies

Methods. The authors made bite registrations for

subjects aged 7 to 12 years by using a dental impression wafer (1



imprinted bits registration.

JADA, 138(9): 1234-40, SEPT. 2007

TESTING THE RELIABILITY OF THE WAFERS



BITE WAFER

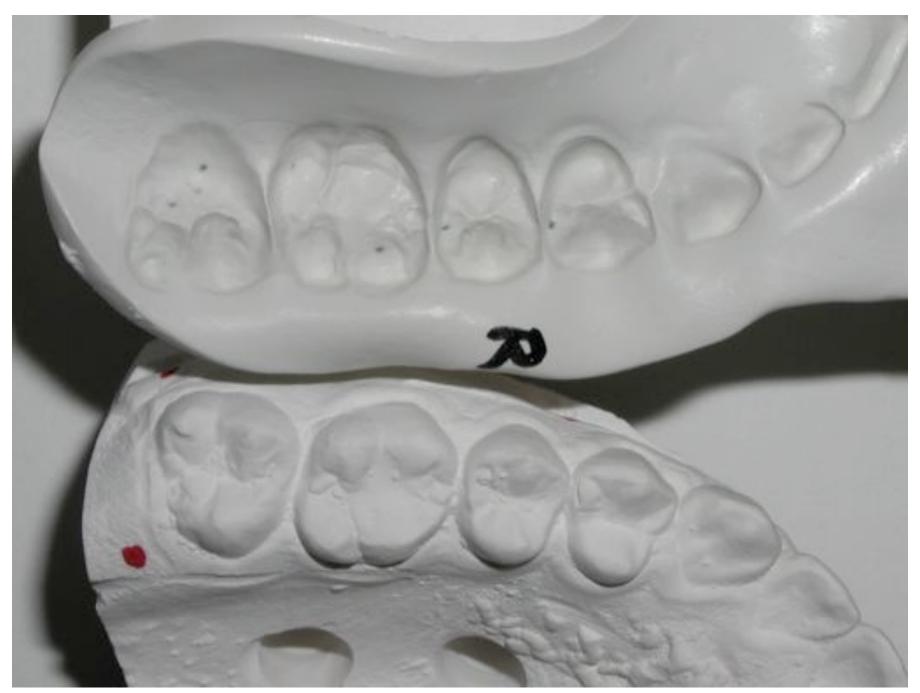
CAST



PLASTER CAST



BITE WAFER



WAFER MIRRORING CAST

WAFER DISTORTED ON ONE SIDE: ONE WAFER FOR BOTH UPPER AND LOWER TEETH

WAFER IMPRESSIONS ARE RELIABLE: TWO WAFERS USED, ONE FOR UPPER TEETH AND ONE FOR LOWER TEETH

IN LIGHT OF MORE MEASUREMENT PRECISION AND DIFFERENT IMPRESSION TECHNIC, THE RELIABILITY OF THE TOOTHPRINTS WAFERS IS BEING RE-EXAMINED



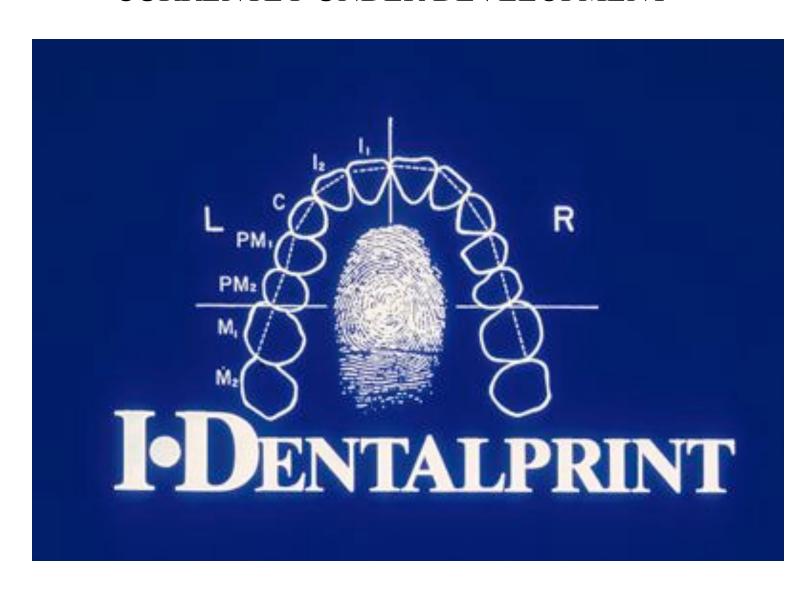


THIS BIOMETRIC ARCH FORM APPROACH MAY BE FEASIBLE FOR:

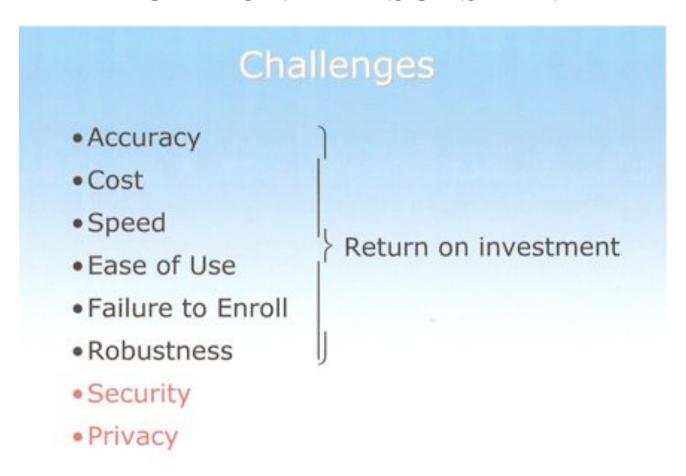
BITE MARK ANALYSIS

HUMAN DATABASE CONTRUCTION

THE USES OF THESE BIOMETRIC TECHNICS ARE CURRENTLY UNDER DEVELOPMENT



THE CHALLENGES OF ANY BIOMETRIC APPLICATION ARE SUBSTANTIAL



I HOPE THERE IS A BETTER APPRECIATION FOR THE PROMISE OF DENTAL BIOMETRICS

- **♦ LENGTHY HISTORY**
- **♦ LEGACY IN PEER-REVIEWED RESEARCH**
- ♦ NEW DENTAL MATERIALS ARE MAKING NEW APPROACHES
 MORE COST-EFFECTIVE

