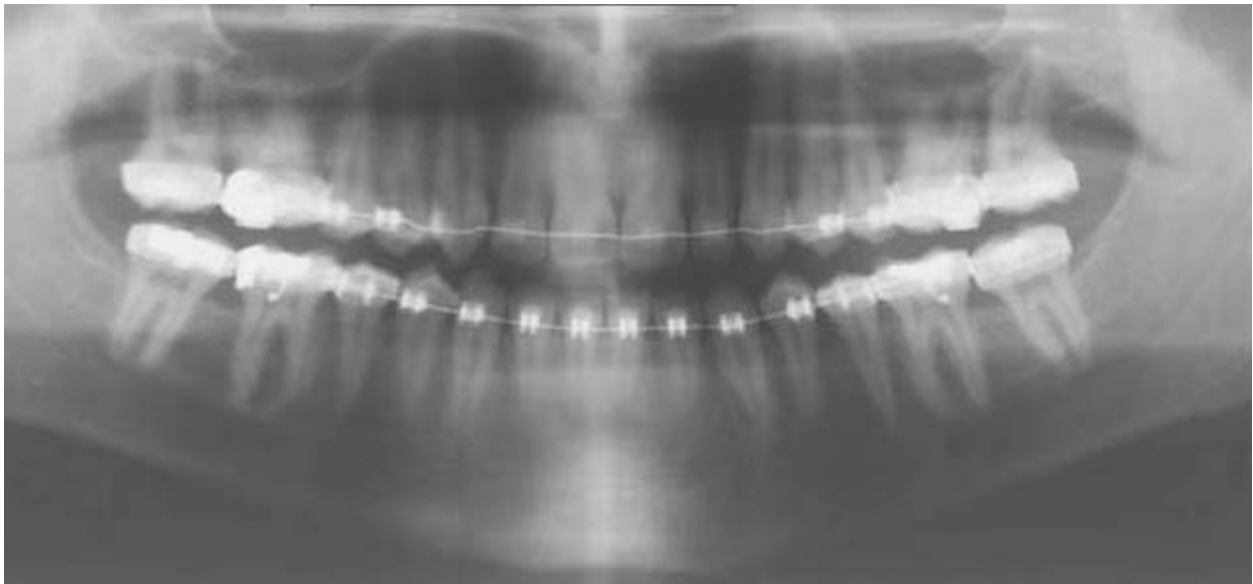# Organization of the J. K. Economides Orthodontic Collection
Instruction Manual

Dr. Heather Edgar
Principal Investigator

Dr. Edward Harris
Co-Principal Investigator

Dr. Phil Kroth
Co-Principal Investigator

Compiled by
Anna Rautman, Research Assistant
Shamsi Daneshvari, Chief Orthodontic Project Assistant

Table of Contents

List of Figures

I.   Getting Set Up to Work on the Orthodontic Project
   A. On-line training
      1. To login to *Learning Central*
         a. Go to: https://learningcentral.health.unm.edu/plateau/user/login.jsp
         b. Use your *UNM Net ID and Password*
      2. Training required
         a. **HIPPAA** training for the current year (needs to be repeated yearly)

   B. HSC ID username and badge
      1. HSC username and password
         a. All employees on this project need a HSC username and password
         b. Form to fill out online
            i. https://hscssl.unm.edu/HEAT/accountRequest/index.cfm
            ii. Click: "I agree" on the first screen
            iii. Select: "Faculty/Staff Account" as type of account requesting
            iv. See **Figure 1.1: HSC ID Request Form**
            v. Fields to fill in:
               - <u>UNM ID (SS#)</u>: either your UNM ID <u>or</u> your SS#
                  - This is required to verify your identity
               - Your first, middle and last names
               - *Osteology Lab* phone number as the <u>Office Phone</u> number
               - Leave the section beginning with <u>Job Title</u> blank
               - <u>Contact Information</u>: Enter Dr. Heather Edgar as the contact
               - <u>Comments</u>: "Student employee with the Maxwell Museum Orthodontic project. Access is needed to the orthodontics database. Please see Gayle for additional information."
            vi. Click: "Submit Form"
      2. HSC ID badge
         a. If you will be helping to scan images, you will also need a HSC ID badge
         b. HSC contact: Analyst Radiology Information Specialist
            i. See **Appendix A: Directory** for contact information
            ii. Daniel will provide you with the necessary forms to get approved for a HSC ID badge.
            iii. Get badge from *Hospital Security*
               - Photo ID required
         c. Replacement HSC ID badge
            i. Got to hospital security and request a new badge
            ii. Replacement form needs to be filled out
            iii. Pay $15 fee
            iv. Option: Retake photo, or they can use the photo on file

   C. Logging onto the computers in the Osteology Lab
      1. User name and password
         a. Username and Password will be provided
      2. This allows you to log onto any of the computers in the lab
      3. To access to the N:\ drive

        a. You will need to also log onto VPN client

        b. See **Section IV: Logging onto VPN Client**

D. Orthodontic database *reporter*

   1. Every research assistant who will be entering data will need to have their name added to the Orthodontic Database as a reporter for ancestry estimation

   2. See **Section IV-B: At the Osteology Lab** for direction on computer log on

   3. To add a new reporter

       a. Open the database

          i. Location: N:\Database

         ii. File: "Orthodontics.mdb"

        iii. File type: Microsoft Access

       b. Click "Open" if you get a "Open File – Security Warning" window

       c. If you get a "Securing Warning" bar across the top of the screen

          i. Click: "Options…"

         ii. Window pops up "Microsoft Office Security Options"

        iii. Select: "Enable this content"

        iv. Click: "OK"

       d. From "Form View"

          i. Click "Reporters" button within Ancestry Estimates window

         ii. Window pops up "Reporters"

        iii. Add a new record

        iv. Enter your name (first and last)

         v. Report your self-identified race

        vi. Exit out of the window

Figure 1.1: HSC ID Request Form

Screen view of requesting an HSC User ID. See **Section IB1: HSC Username and Password** for specifics on how to fill out this form.

II. Labeling of Physical Records
   A. Order of records for labeling
      Note: The transfer patients were the first patients to be accessioned. After the transfer patients, the new patients who joined Dr. Economides' practice in 1999 were accessioned. These new patients were accessioned in reverse order, such that the higher *patient number* assigned by Dr. Economides correlates to a lower *accession number*. Patient's who joined Dr. Economides' practice in December of 1998 were accessioned after the patients who joined in January. After all 1998 patients were accessioned, then the 1997 patients were accessioned, etc.

   B. Accession number (unique identifier)
      1. Example: "2005.19.70"
      2. Accession number: "2005.19."
      3. *Object number*: last number of the unique identifier
         a. Every Patient must have their own, unique object number.
         b. In one or two cases, multiple patients were in one folder.
            i.   In these cases, "A" and "B" were added to the object number.
            ii. Example: 2005.19.70A and 2005.19.70B

   C. Label the patient *folder* with the patient's accession number
      1. Label with "Sharpie® Permanent Marker Ultra Fine Point"
      2. Label in the upper right hand corner, under then patient number

   D. EVERY paper, photo, and x-ray needs to be labeled with the patient's accession number
      1. Papers:
         a. Label with "Sharpie® Permanent Marker Ultra Fine Point"
         b. Label upper, right hand corner
         c. Not too close to the top of the page – number gets cut off when photocopying
      2. Photos:
         a. Label with "Sharpie® Permanent Marker Ultra Fine Point"
         b. Label on the backside of the photo, not on the image
      3. X-Rays:
         a. Label with "Z↑G® Photo Signature, black, 5 point"
         b. Label in one of the lower corners, near the patient's name if possible
      4. Transparency:
         a. Transparencies are traces of lateral x-rays which were used to take cephalometric measurements.
         b. See **Figure 2.1: Sample X-Ray with Cephalometric Transparency Trace**
         c. Remove tape from transparency and x-ray
         d. Label transparency with "Sharpie® Permanent Marker Ultra Fine Point"
         e. Place both transparency and x-ray in "Perma Dur Envelope"
         f. Label envelope with "Sharpie® Permanent Marker Ultra Fine Point"

Figure 2.1: Sample X-Ray with Cephalometric Transparency Trace

X-Ray with transparency

Transparency
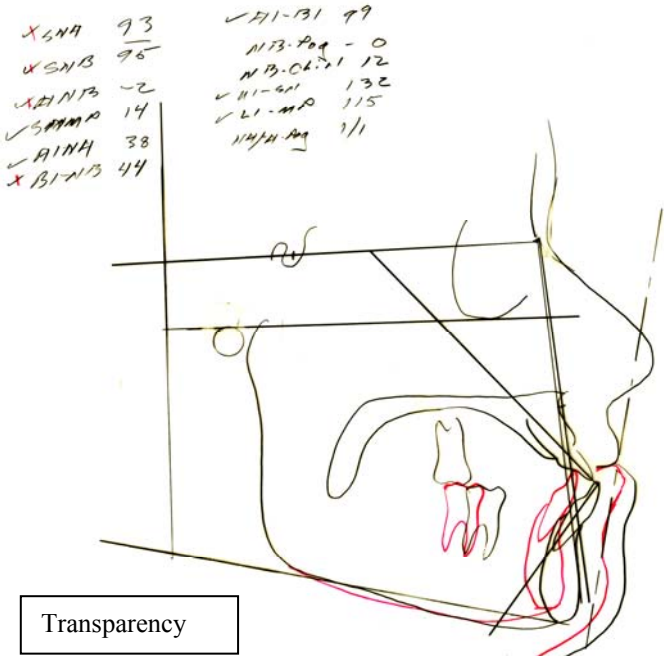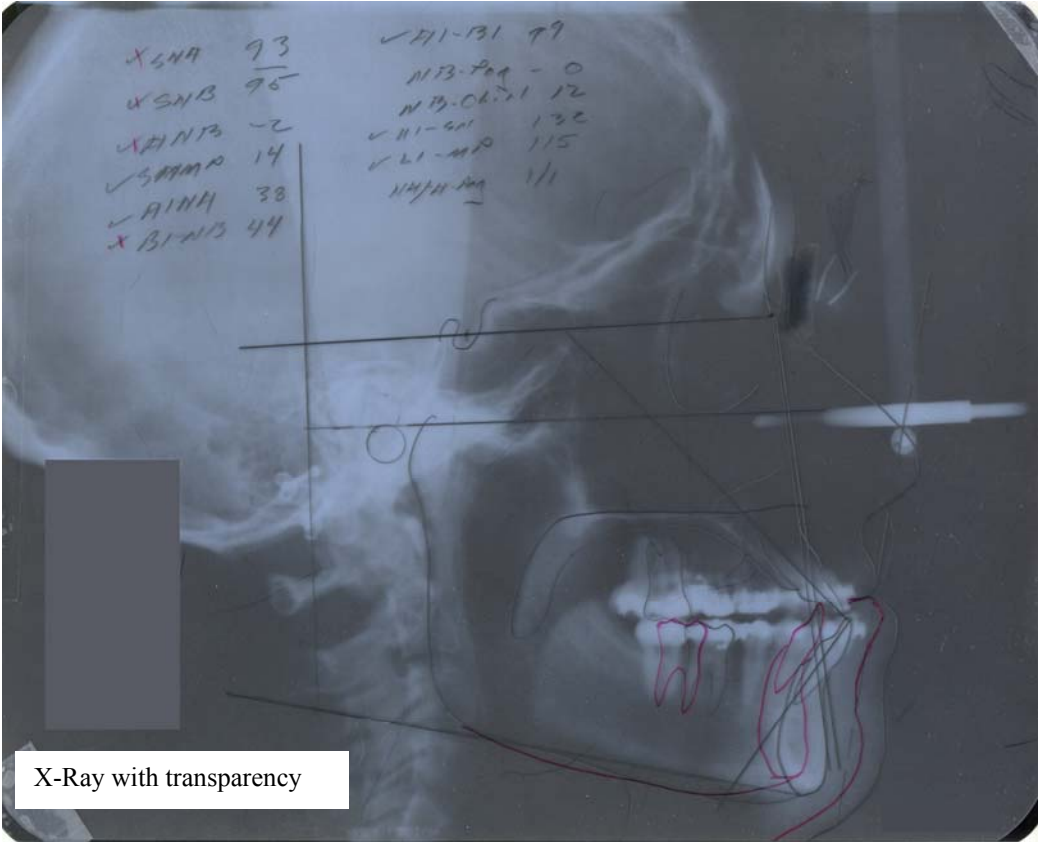
III. **Labeling and Deidentifying Dental Casts**
   A. Match patient's number
      1. On patient's *cast* to the patient's folder
      2. Have the box of patient folders with you for easier matching

   B. Label the box holding the casts with the corresponding accession number
      1. Use a "Sharpie® Permanent Marker Ultra Fine Point" to label the box
         a. Label at the bottom of the box, below the drawer pull
      2. Remove any *patient identifier* from Dr. Economides or other dentist
         a. Specifically remove the paper in the front of the box

   C. Label the cast
      1. Use a "Sharpie® Industrial Super Permanent Ink Fine Point" to label the cast
         a. Write the label on the bottom of the cast at the widest point
      2. Remove any Patient Identifiers, such as
         a. Name
         b. Patient number
            i. Remove from cast
            ii. And from the box if present
         c. Date of birth
      3. Do NOT remove
         a. Date cast was taken
         b. Age of the individual when the cast was taken

   D. Notes for successfully removing patient identifiers
      1. Some labels are easy to remove
      2. Labels with dates can be carefully cut to remove patient identifiers while leaving dates
      3. Erasers can sometimes remove patient identifiers written in pencil without having to use an "X-ACTO®"
      4. A "Sharpie® Industrial Super Permanent Ink Fine Point" can be used to color over patient identifiers
      5. Use an "X-ACTO®" knife to scratch the surface of the cast if needed to remove patient identifiers
         a. Uses of an "X-ACTO®" knife to scratch the surface of the cast should be a last attempt
         b. This does damage the cast and should be avoided as much as possible.

   E. NOTE: If cast is present but do not have the corresponding patient folder
      1. Make a note of this patient
      2. Do NOT de-identify these casts
      3. These casts will be dealt with at a later time

IV. **Logging onto VPN Client**
- A. Purpose: This will allow you to access the database and all images pertaining to the Orthodontic Project, as well as other relevant files.

- B. At the Osteology Lab:
  1. See **Section I-C: Logging onto the computers in the Osteology Lab**
  2. To log onto VPN Client in the Osteology Lab:
     a. Go to: Start \ All Programs \ Cisco Systems VPN Client \ VPN Client
     b. Select: "HSC-Network_VPN"
     c. Click: "Connect"   (upper left corner)
     d. Enter: Your HSC username and password
     e. Press: "Enter"
  3. To access the (N:) Drive
     a. If you can see the (N:) Drive
        i. From "My Computer"
        ii. Click on: "Orthodontic Imaging on 'hsc-truchas\departments' (N:)"
        iii. Enter: Your HSC username and password
        i. For HSC Login: "health\username"
        iv. Press: Enter
     b. If you cannot see the (N:) Drive
        i. From "My Computer"
        ii. Tools → "Map Network Drive…"
           - Drive: "N: \\hsc-truchas\departments"
           - Folder: "\\hsc-truchas\departments\Orthodontic Imaging"
        iii. Click: "Finish"

- C. At the hospital:
  1. Hospital login passwords are required to be changed every 180 days
  2. If computer says "saving settings," turn it off, and then back on
  3. To login:
     a. Novell Client Login
        i. Enter: Your HSC username and password
     b. Windows Workstation Login
        i. Enter: *PACS username and password*
           - Username and password will be provided
        ii. This is NOT the same as your HSC username and password
        iii. The PACS password will be shared with you when you join the Orthodontic Project. Everyone uses the same PACS username and password to log onto the computers in the *Radiology Department*.

- D. DO NOT FORGET TO LOG OUT WHEN YOU ARE DONE!
     This is important in order to protect patient privacy.

V.   Scanning Images
    A. General notes:
        1. There are two sources of images for patients. The physical photos and x-rays located within the patient's folder, and electronic photos received from Dr. Economides.
            a. Physical photos and x-rays addressed in **Section V. Scanning Images** and **Section VI. Photo and X-Ray Editing**
            b. Electronic photos are addressed in **Section VII. Editing Electronically Received Photos**
        2. Scan photos and x-rays at the hospital
        3. Scanned images are to be saved to patient specific e-folders
        4. For each patient, create an e-folder for the images
            a. Location: "N:\Images\Orthodontics\Need to be Deidentified and edited"
            b. Every patient needs to have its own e-folder within the above e-folder
                i. Name the e-folder according to the patient's accession number
                ii. Example: "2005_19_xxxx"
        5. Once images have been scanned, they will be edited to remove confidential information
            a. See **Section VI. Photo and X-Ray Editing**

    B. Scanning photos
        1. Notes:
            a. Only the inter-oral photos get scanned.
            b. None of the full face photos get scanned.
            c. For examples of inter-oral photos, see **Figure 5.1 Sample Inter-Oral Photos**
        2. Open Photoshop
            a. Icon on desktop
            b. Or from "Start Menu"
        3. File → Import → "Epson twain Pro"
        4. Click: "Preview"
        5. Select: Area of preview to scan
        6. Click: "Scan"
        7. Close window: "Close"
        8. See **Figure 5.2 Screen Shot for Scanning Photos**
        9. Save image
            a. Location: "N:\Images\Orthodontics\Need to be Deidentified and edited"
            b. Every patient needs to have its own e-folder within the above e-folder
            c. For image naming, see **Appendix B: Image Naming Convention**
                i. For more efficient scanning
                    - Save all images of a single treatment date as one file
                    - Use "ALL" for the *ViewCode*
                ii. During photo editing this single e-file will get saved into numerous e-files, one for each image
            d. Click: "Save"
        10. When done for the day, do a "preview" scan of a blank screen. Otherwise the computer will retain the previously scanned inter-oral photos.

C. Scanning x-rays
   1. Notes:
      a. All x-rays, except for bite-wings, need to be scanned.
      b. X-Ray scanning is done at the hospital on the Vidar Twain Scanner there
      c. Most commonly encountered:
         i. Lateral x-rays
         ii. Panaview x-rays
      d. Less common views occasionally encountered:
         i. Anterior-posterior x-rays
         ii. Hand x-rays
         iii. TMJ centered lateral x-rays
         iv. Waters View x-rays
      e. Additional x-rays may be included in the patient's folder and do require scanning
      f. For examples of x-rays, see **Figure 5.3: Sample X-Rays**
   2. Open Photoshop
      a. Icon on desktop
      b. Or from "Start Menu"
   3. File → Import → "Vidar Twain 32 Version 5.2.1."
      a. See **Figure 5.4A: Window for Scanning using the Vidar Twain**
   4. Settings for scanning:
      a. Image Properties:
         i. Resolution: 300
         ii. Depth: 12
         iii. Num. Films: 1 (or number of films being scanned)
      b. Scan Size: "Auto Size"
      c. Select: "Multi-Film Mode"
   5. Click: "Scan"
      a. See **Figure 5.4B: Window for naming the scanned file**
   6. Click: "Browse"
      a. See **Figure 5.4C: Window for selecting the file's location**
   7. Select the location of the file export
      a. Every patient needs to have its own e-folder within the above e-folder
      b. Select or create a folder for the patient. But do not enter file name here.
      c. Location: "N:\Images\Orthodontics\Need to be Deidentified and edited"
         i. Choose specific e-folder with the patient's accession number
   8. Click: "Save"
      a. This will return you to the window in **Figure 5.4B**
   9. Enter file name in "Save Images as:"
      a. See **Appendix B: Image Naming Convention**
   10. Load x-ray into the scanner
      a. Orientation of images
         i. See **Figure 5.5: Sample X-Ray Scanning Orientation**
         ii. Notes:
            - Description of x-ray orientation is based on your view, not what is facing the machine.

- Orientation differs depending on how the image is saved (TIF or Bitmap).
- Must be scanned at a depth of "12," which requires file type TIF .
   iii. Panaview x-rays:
- Superior side is on the left
- "R" on the image needs to be superior
   iv. Lateral x-rays
- Anterior portion of the skull is on the left
- Inferior portion of skull faces superior
11. Click: "OK" – machine will feed the film though
12. After scan is complete, open the image to verify that it scanned correctly
13. If unable to scan x-ray using the Vidar, scan using the Epsion scanner
   a. Quality will not be as good, but is better to have poorer quality than to lack the image for the database.

D. After scanning delete these files:
1. i9999.dat   (or may be named "i9999")
2. imgs.lst
3. These files are not important, and they take up room on the server.

Figure 5.1: Sample Inter-Oral Photos with View Codes

Right Lateral Bite
View Code: "rlb"

Anterior Bite
View Code: "antb"

Left Lateral Bite
View Code: "llb"

Maxillary Occlusal
View Code: "mxo"

Mandibular Occlusal
View Code: "mdo"

All five inter-oral photos as scanned
View Code: "ALL"
(Will get edited into five separate images during photo editting)

Figure 5.2: Screen Shot for Scanning Photos

- Use this window to select desired images to be scanned.
- Note: At the end of the day, do a "Preview" scan without photos. Otherwise anyone trying to scan photos will be able to see the patient's photos.
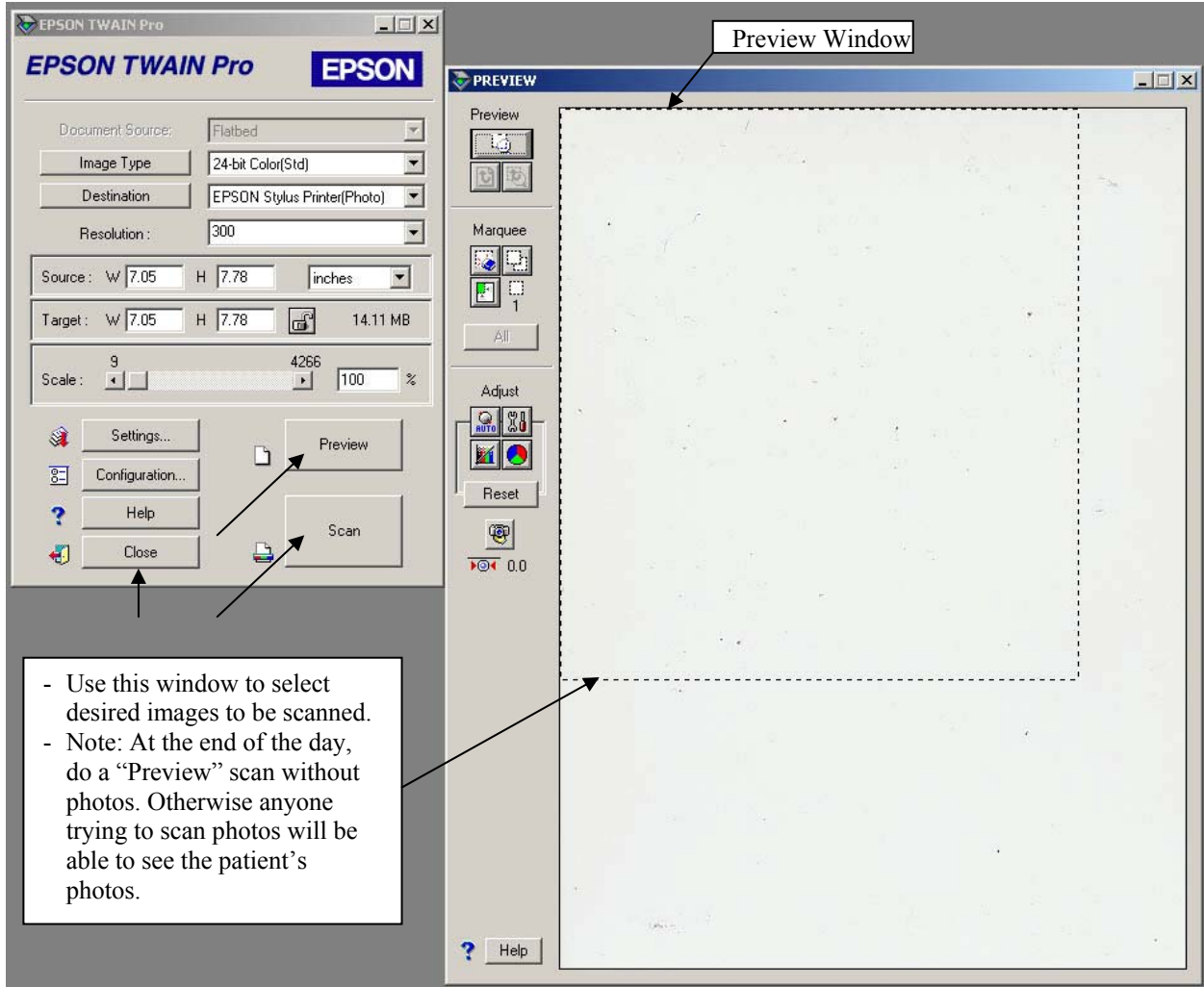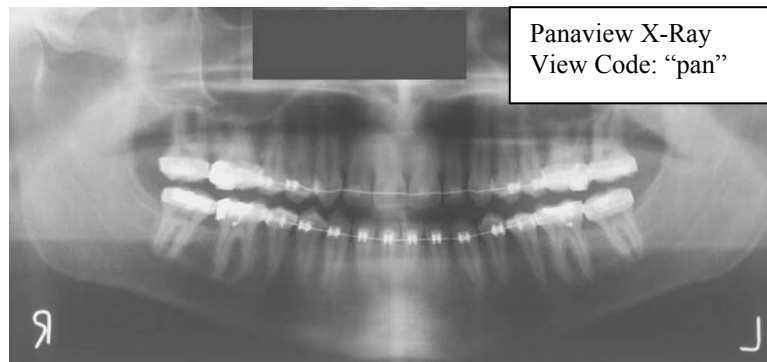
Figure 5.3: Sample X-Rays with View Codes
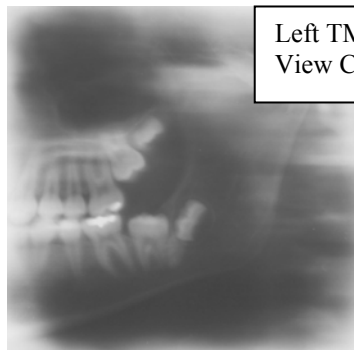

Lateral x-ray
View Code: "lat"

Anterior-Posterior x-ray
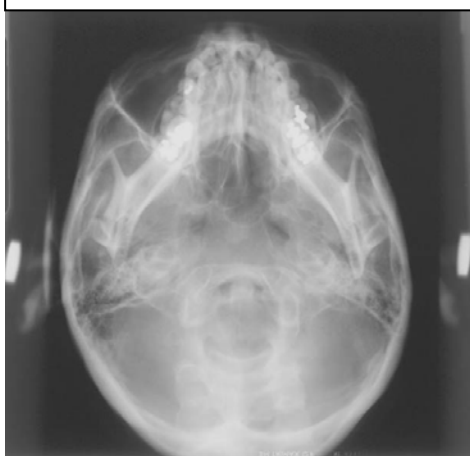View Code: "AP"

Panaview X-Ray
View Code: "pan"

Hand x-ray
View Code: "hd"

Left TMJ x-ray
View Code: "LTMJ"

Waters View x-ray
View Code: "waters"

Right TMJ x-ray
View Code: "RTMJ"

Figure 5.4: Screen Shots for Scanning X-Rays

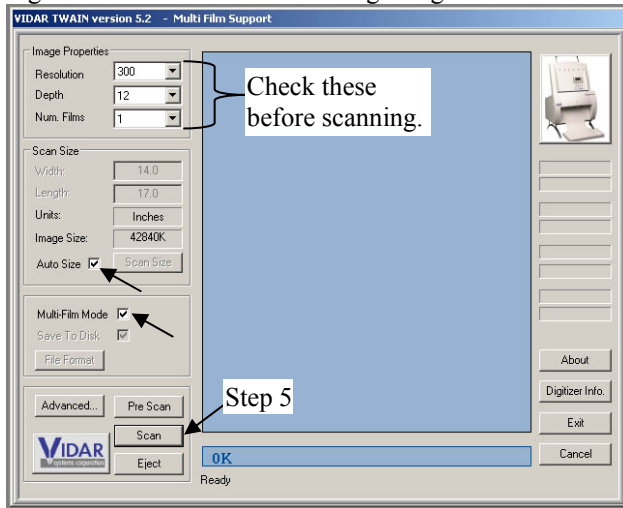Figure 5.4A: Window for scanning using the Vidar Twain

Figure 5.4B: Window for naming the scanned file
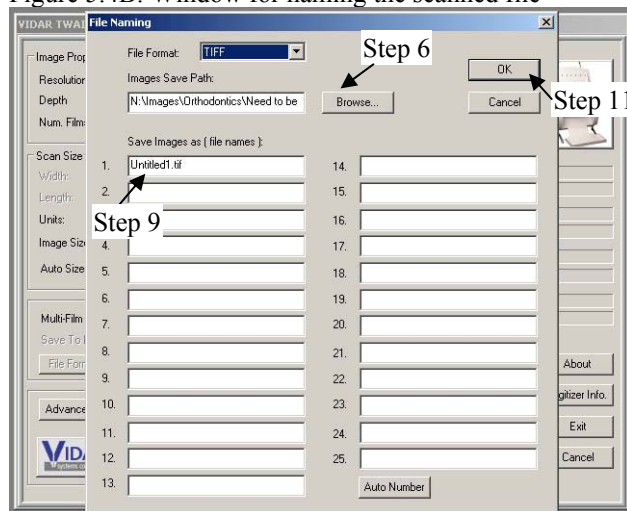
Figure 5.4C: Window for selecting the file's location
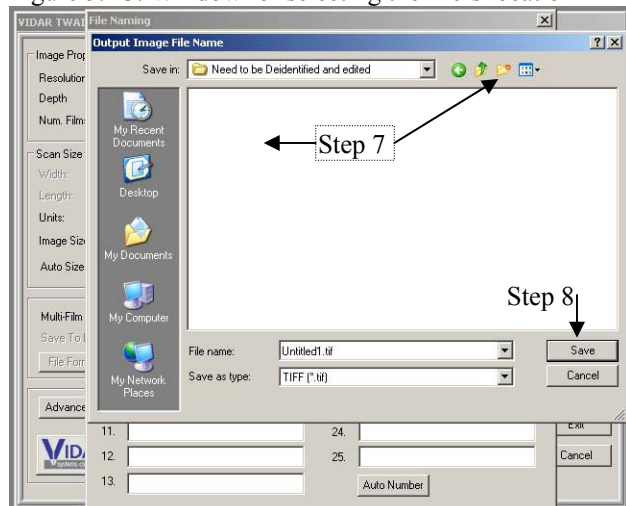
Figure 5.5: Sample X-Ray Scanning Orientation

Panaview x-rays:
- Superior side is on the left
- "R" on the image needs to be superior

These images are how you should see the x-ray as you are looking at it sitting in the x-ray scanner. This side faces out from the machine.

These are correct when image is saved as a TIF file. Check type of file before correcting orientation.

Other x-ray images are not as common. Therefore, they are not the focus of orientation descriptions.

Lateral x-ray
- Anterior portion of the skull is on the right
- Inferior portion of skull faces superior

VI. **Photo and X-Ray Editing**
   A. See **Section V: Scanning Images**
      1. Images scanned
      2. Saved in e-folder "Need to be Deidentified and edited "
         a. Location: "N:\Images\Orthodontics\Need to be Deidentified and edited"
         b. All images for one patient are in one e-folder

   B. For editing of photos and x-rays
      1. For images of tools, see **Figure 6.1: Adobe Photoshop CS3 Tools**
      2. Check EVERY image: photos and X-Rays
      3. Check that these files have been deleted
         a. i9999.dat   (or may be named "i9999")
         b. imgs.lst
      4. For photo e-files containing multiple images (ViewCode: ALL)
         a. Need to be saved as individual e-files (save as)
         b. See **Appendix B: Image Naming Convention**
      5. Use "Eyedropper Tool (I)" to match color near patient identifier
         a. Any area on image that includes: (includes, but not limited to)
            i. Patient name
            ii. Patient age
            iii. Patient number
            iv. Data image taken
            v. Orthodontist
      6. Select area to fill in
         a. For photos, use "Quick Selection Tool (W)" for best results
         b. For x-rays, use "Rectangular Marquee Tool (M)" for neat square
      7. Fill in area selected
      8. Crop, flip, and rotate image as required
         a. See **Figure 6.2: Sample Images with final orientation**
         b. Crop to include only the image desired
            i. Crop x-rays and photos if there is excess area included in the image
            ii. Crop photos when there is a duplicate image so that only one image remains
            iii. Use the "Crop Tool (C)" for easy cropping
         c. Flip (mirror image) if x-ray is not oriented correctly
            i. Lateral x-rays – facing to the right of the screen
            ii. Panaview x-rays – patient's left on the right side of the screen
            iii. AP x-rays – patient's left on the right of the screen
            iv. Water's x-rays – patient's left on the right of the screen, chin pointing up
         d. Rotate images as needed
            i. Photos: should be oriented as if looking at the person
            ii. X-Rays: panaview x-rays should be oriented horizontally
      9. Addition of x-ray rulers
         a. Template rulers need to be added
            i. Varies by image view
            ii. In e-folder "N:\Images\Orthodontics\Need to be Deidentified and edited"

- "LatRuler.tif"
- "PanRuler.tif"
b. To add template ruler to x-ray:
   i. Open template
   ii. Select entire image using "Rectangular Marquee Tool (M)"
   iii. Copy
   iv. Open x-ray that requires template ruler
   v. Paste ruler on x-ray (will paste on a new layer)
   vi. Use "Move Tool (V)" to position ruler template into the correct position
10. Once all images in e-folder have been edited
   a. CUT and paste e-folder with edited images to appropriate location
      i. Location: "N:\Images\Orthodontics\Scanned photos"
   b. Images organized by accession number
     → N:\Images\Orthodontics
      → E-Folder with groups of 500 Patients
         Example: "2005_19_1-2005_19_500"
      → E-Folder with groups of 50 Patients
         Example: "2005_19_51-2005_19_100"
      → E-Folder for each Patient
         Example: "2005_19_70"

C. Final image modification
   1. See **Section VIII: Batch Image Processing for Image Conversion to JPEG**
   2. After batching,
     a. Sort images into folders
     b. Location: "N:\Images\Orthodontics\all images-ready for web"
   3. These folders will also contain images received electronically
     a. See **Section VII: Editing Electronically Received Photos**
     b. When multiple copies of same image on the same date exist, change the last number "Ordinal."
       i. See **Appendix B: Image Naming Convention**
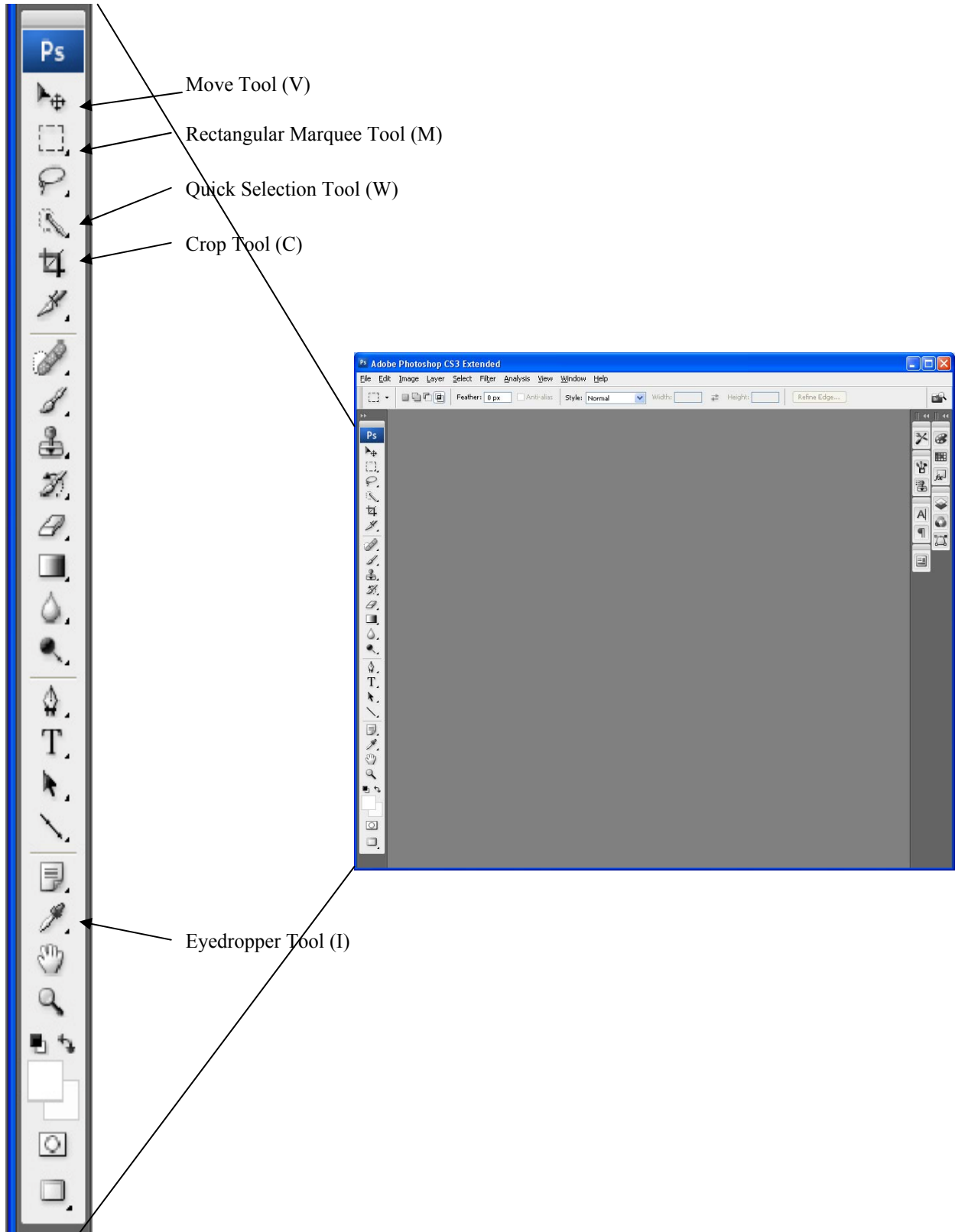
Figure 6.1: Adobe Photoshop CS3 Tools

Move Tool (V)

Rectangular Marquee Tool (M)

Quick Selection Tool (W)

Crop Tool (C)

Eyedropper Tool (I)

Figure 6.2: Sample Images with final orientation

Right Lateral Bite
View Code: "rlb"

Anterior Bite
View Code: "antb"

Left Lateral Bite
View Code: "llb"

Maxillary Occlusal
View Code: "mxo"

Mandibular Occlusal
View Code: "rlb"

Lateral x-ray
View Code: "lat"

Panaview x-ray
View Code: "pan"

Figure 6.2: continued

Anterior-Posterior x-ray
View Code: "AP"

Waters View x-ray
View Code: "waters"

Left TMJ x-ray
View Code: "LTMJ"

Hand x-ray
View Code: "hd"

Right TMJ x-ray
View Code: "RTMJ"

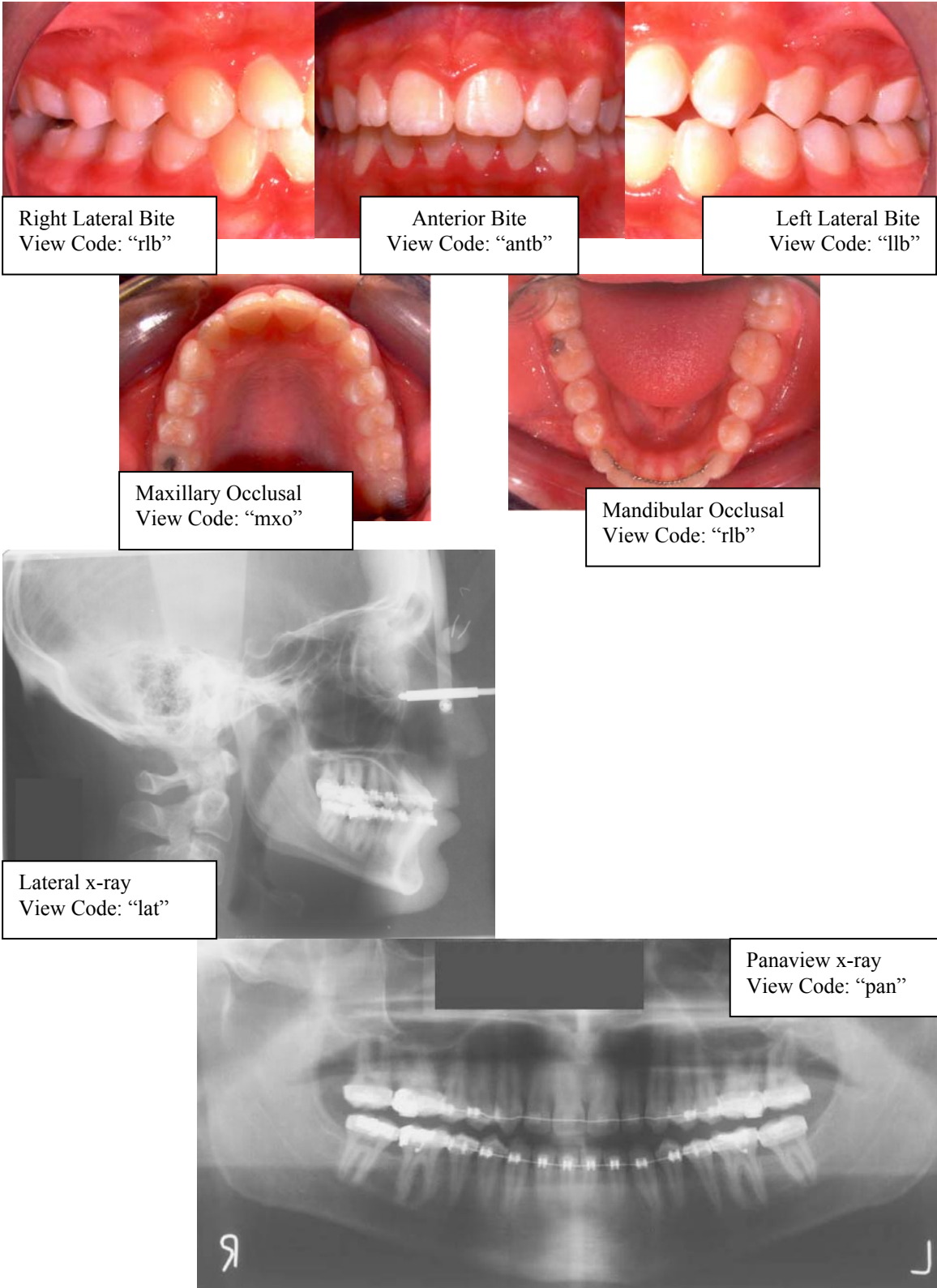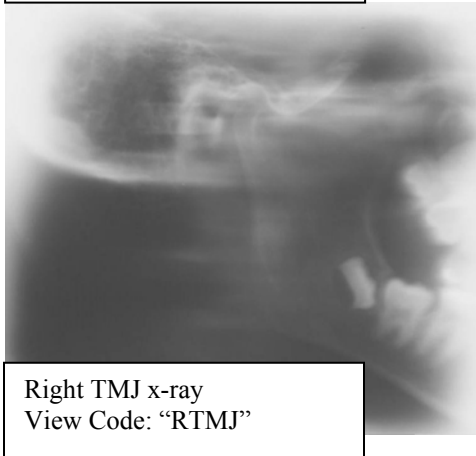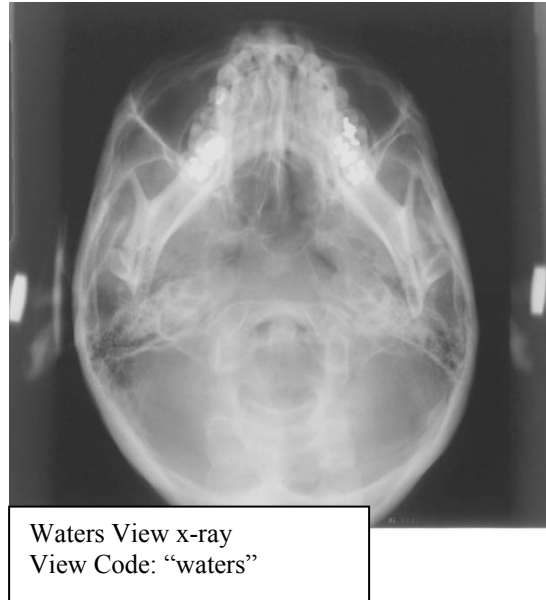**VII.** **Editing Electronically Received Photos**
    A. General notes:
        1. These photos were retrieved from Dr. Economides' computer.
        2. Some are duplicates of those photos in the patient's folder. However, these photos include images taken during treatment that are not included in the folder.
        3. All inter-oral photos (and x-rays when present) will be included. Full face photos, random photos, and ".cmt" files will not be included in the final results.
        4. Location: "N:\Images\Economides\Image"
            a. Are organized by the year the patient joined.
            b. Year joined indicated by the patient number
        5. Editing process is comprised of 8 stages of steps

    B. Example used to describe stages
        1. As this is a complex series of steps, a fictitious patient has been created to use as an example.
        2. Patient 2005.19.00 is not a valid accession number. None of the images used in this section as an example are associated with their real accession number.

    C. Stage 1: Change folder name from patient number to accession number
        1. Location: "N:\Images\Economides\Image"
        2. Patients are organized by the year (first few numbers of the patient number)
        3. Check the face photos in the folder to the face photos in the e-folder
            a. Occasionally multiple patients have been found in one e-folder
        4. Change the e-folder name from the patient number to the accession number
            a. Format e-folder name with "_" instead of "."
            b. Example: "2005_19_00" instead of "2005.19.00"

    D. Stage 2: Adding accession number to file name
        1. Open Photoshop
        2. File → Browse
            a. See **Figure 7.1: Browsing Images**
        3. In browse window, locate the first e-folder to begin editing
            a. Example: 2005_19_00
            b. Select all images and right click over the images
            c. Click on "Batch Rename…"
            d. See **Figure 7.2: Preparing to Batch Rename**
        4. See **Figure 7.3: 'Batch Rename' Window – Stage 2**
            a. "Destination Folder" – by selecting "Copy to other folder," the e-files selected will be copied, the e-file names will be changed, and pasted into the selected e-folder.
                a. "Browse…" – select e-folder "N:\Images\Economides\to edit\to crop"
            b. "New Filenames" – as it is set up in **Figure 7.3** the patient's accession number will be correctly added to the e-file name
                i. To change, select from the pull down menus (menu to the left affects options in menus to the right)
                ii. Add or delete lines of options by the "-" or "+" buttons

c. "Preview" – shows an example of how the new e-file names will appear
d. Click "Rename"
5. Repeat Steps 4 and 5 for the next patient, continuing for as many patients as will be renamed at the time.

E. Stage 3: Sort files
1. All e-files renamed in **Stage 2** will be copied to "N:\Images\Economides\to edit\to crop"
a. See **Figure 7.4: 'N:\Image\...\to crop' – Unsorted**
b. **Figure 7.4** includes examples of the types of e-files
2. Move all "CMT Files" into e-folder "N:\Images\Economides\ext cmt"
3. Move image files from "N:\...\to crop" into subfolders:
1. E-folder: "N:\…\to copy\face" – any image that contains only the face of the patient without including inter-oral images. Also include random photos of any non-tooth focused image.
i. After verifying that no images of teeth were accidentally moved here, delete all images.
2. E-folder: "N:\...\to copy\i1" – any image that contains only one inter-oral view
3. E-folder: "N:\...\to copy\i3" – any image that contains three inter-oral images. These usually are "antb," "llb," and "rlb" but may include "mdo," "mxo" or any other image.
4. E-folder: "N:\...\to copy\i9" – any image that has 8 or 9 images organized in a 3x3 grid. The top row usually includes three face photos, with the remaining 5 or 6 images being inter-oral photos. The middle square of the grid may either be an inter-oral image or else black. Inter-oral images include "antb," "llb," "mdo," "mxo," "rlb," and may include another, non standard, image.
5. E-folder: "N:\...\to copy\other" – other images such as x-rays or other images of teeth that do not fit into one of the previous three folders.
6. See **Figure 7.5: 'N:\Image\...\to crop' - Sorted**

F. Stage 4: Change date format in file name
1. E-file names include the date they were taken. The received format is "MMDDYY," but as discussed in **Appendix B: Image Naming Convention**, dates need to be in the format "YYYYMMDD."
2. Open "Bulk Rename Utility"
a. See **Figure 7.6: Bulk Rename Utility**
b. Notes:
i. This program works by identifying text within e-file names and modifying the text as instructed.
ii. The three renaming options indicated (letters C, D, and E) are the options most likely to be used.
3. Select sub e-folder of images to rename
4. See **Figure 7.7: Examples of Bulk Renaming**
5. Additional text to remove:
a. All ".i#" suffixes
i. ".i1"

   ii. ".i3"

   iii. ".i9"

  b. Any stage of treatment information

   i. "-pret"

   ii. "-postt"

   iii. "-pres"

 6. Do not remove "a" suffixes at this point. This will be deal with later in **Stage 7**.

  a. Example: "103096.i3<u>a</u>" or "19961030<u>a</u>"

G. Stage 5: Add view code and ordinal number to file name

 1. Notes:

  a. Uses the same program described in **Stage 2**

  b. For each of the three types of files (i1, i3, and i9) similar, but different steps are required.

 2. For "i1" Images

  a. Location: "N:\Images\Economides\to edit\to crop\i1"

  b. Sort single images into subfolders according to view of teeth

  c. See **Figure 7.8: Sorting ".i1" Images**

  d. Open Photoshop's Browsing window

   i. Refer to **Figure 7.1** and **Figure 7.2**

  e. In browse window, locate the "i1" e-folder

  f. Select all images and right click

  g. Click on "Batch Rename…"

  h. See **Figure 7.9: 'Batch Renaming' Window – Stage 5: i1**

   i. "Destination Folder" – by selecting "Rename in same folder," the e-file names will be changed, without a copy of the e-file being made.

   ii. "New Filenames" – as it is set up in **Figure 7.9** will add the view code and ordinal number to the end of the e-file name. Enter the appropriate view code based on the images selected.

   iii. "Preview" – shows an example of how the new e-file names will appear

  i. Repeat for all sub e-folders

  j. All images should have view code and ordinal number added. No copies of images are necessary.

 3. For "i3" Images

  a. Location: "N:\Images\Economides\to edit\to crop\i3"

  b. Open Photoshop's Browsing window

   i. Refer to **Figure 7.1** and **Figure 7.2**

  c. In browse window, locate the "i3" e-folder

  d. Select all images and right click

  e. Click on "Batch Rename…"

  f. Repeat batch rename for all three view codes

   i. View codes: "antb," "llb," and "rlb"

   ii. These will be edited in **Stage 6**

  g. See **Figure 7.10: 'Batch Renaming' Window – Stage 5: i3**

    i.   "Destination Folder" – by selecting "Copy to other folder," the e-file selected will be copied; the e-file names will be changed, and pasted into the selected e-folder.
- Location: "N:\Images\Economides\to edit\to crop\i3"

e-folder destination	add view code
N:\...\i3\0-antb-crop	antb
N:\...\i3\0-llb-crop	llb
N:\...\i3\0-rlb-crop	rlb

    ii. "New Filenames" – as it is set up in **Figure 7.10** will add the view code and ordinal number to the end of the e-file name.
- It is crucial that the destination e-folder and the view code match!

    iii. "Preview" – shows an example of how the new e-file names will appear

    iv. Check that the view code noted on destination e-folder matches the view code being added to the e-file name.

4. For "i9" Images
  a. Location: "N:\Images\Economides\to edit\to crop\i9"
  b. Open Photoshop's Browsing window
    i. Refer to **Figure 7.1** and **Figure 7.2**
  c. In browse window, locate the "i9" e-folder
  d. Select all images and right click
  e. Click on "Batch Rename…"
  f. Repeat batch rename for all five view codes
    i. View codes: "antb," "llb," "mdo," "mxo," and "rlb"
    ii. These will be edited in **Stage 6**
  g. See **Figure 7.11: 'Batch Renaming' Window – Stage 5: i9**
    i. "Destination Folder" – by selecting "Copy to other folder," the e-file selected will be copied; the e-file names will be changed, and pasted into the selected e-folder.
- Location: "N:\Images\Economides\to edit\to crop\i9"

e-folder destination	add view code
N:\...\i9\0-antb-crop	antb
N:\...\i9\0-llb-crop	llb
N:\...\i9\0-mdo-crop	mdo
N:\...\i9\0-mxo-crop	mxo
N:\...\i9\0-rlb-crop	rlb

    ii. "New Filenames" – as it is set up in **Figure 7.11** will add the view code and ordinal number to the end of the e-file name.

    iii. "Preview" – shows an example of how the new e-file names will appear

    iv. Check that the view code noted on destination e-folder matches the view code being added to the e-file name.

  h. E-files with a sixth inter-oral image (see **Figure 7.4** for example)
    i. Copy from "N:\Images\Economides\to edit\to crop\i9"
    ii. Paste in "N:\Images\Economedies\ to edit\ to crop\i9\other"
    iii. Add view code as appropriate. If view is unclear, use view code "other."

5. For "other" images
  a. Location: "N:\Images\Economides\to edit\to crop\other"

       b. Edit e-file name as required depending on image.
          i. If image is of an x-ray:
             - Change the "P_" to "X_"
             - Add the appropriate view code ("lat," "pan," etc.)
          ii. See **Appendix B: Image Naming Convention**

H. Stage 6: Batch edit photos for single images
    i. Notes:
       a. The actions for batch editing the images have already been created. See **Section 8B: To create/ record an action** for an example of creating an action
       b. There is one action that is for the ".i1" images that require rotating, specifically "mdo" and "mxo." For the ".i3" images, there are three actions, and there are six actions for the ".i9" images.
       c. See **Figure 7.12: 'Orthodontic Actions' for Photo Editing**. This figure shows the different actions that have been created for editing the electronically received images.
    ii. Open first image (in Photoshop) within the e-folder to be edited
   iii. File → Automate → Batch
       a. See **Figure 7.13: Batch Photo Editing**
       b. Steps use the "antb" view of the ".i3" images as an example.
       c. The same steps will be required for all ".i3" and ".i9" views.
    iv. "Play" box
    b. "Set: Orthodontic Actions"
    c. "Actions: i3 – crop antb"
    i. "Source" box
       a. Select: "Source: Folder"
       b. "Choose…" – e-folder selected needs to match the action selected
          i. Location: "N:\Images\Economides\to edit\to crop\"
    ii. "Destination" box
       a. Select "Destination: Save and Close"
   iii. Click "OK"
    iv. Visual check of images for correct views, and change e-file name as needed.
       a. Notes: "Orthodontic Actions" for batch editing actions crop to specific portions of the original images. However, not all original images have the same views in the same locations. Change e-file names if view does not match view code.
       b. See **Figure 7.14: Example of cropped images requiring name changes**

I. Stage 7: Move and sort edited images to final location
    1. Edited images in e-folders: ("N:\Images\Economides\to edit\")
       a. N:\...\to crop\i1
          i. All images should be final
       b. N:\...\to crop\i1\antb
       c. N:\...\to crop\i1\mdo-rotate
       d. N:\...\to crop\i1\mxo-rotate
       e. N:\...\to crop\i1\other

f.   N:\...\to crop\i3\0-antb-crop
g.   N:\...\to crop\i3\0-llb-crop
h.   N:\...\to crop\i3\0-rlb-crop
i.   N:\...\to crop\i9\0-antb-crop
j.   N:\...\to crop\i9\0-llb-crop
k.   N:\...\to crop\i9\0-mdo-crop
l.   N:\...\to crop\i9\0-mxo-crop
m.   N:\...\to crop\i9\0-rlb-crop
n.   N:\...\to crop\i9\other
2.   Scan through all images in all e-folders (a-n) to ensure that images are correctly edited and have the correct view code.
3.   Remove any "a" associated with dates
     a.   See **Stage 4, step 6**
     b.   Use "Bulk Rename Utility" to search for e-files containing "a_"
          i.   Searching this way will no pick up on the "a" in the view code "antb"
          ii.   Delete "a"
          iii. If attempting to delete the "a" returns the error message that there is already an e-file with this name, change the ordinal number, and then remove the "a".
4.   Cut and paste all images from e-folders (a-n)
     a.   Paste to: "N:\Images\Orthodontics\all images-ready for web"
5.   Sort all e-files into the patient's individual e-folders

J.   Stage 8: Delete copies created during editing
1.   Copies located in e-folders
     a.   N:\Images\Economides\to edit\to crop\i3
     b.   N:\Images\Economides\to edit\to crop\i9
2.   These e-files were copied and view codes added to the copies.
     a.   It is best to wait to delete these e-files until all images have been batch edited in case mistakes are made.
3.   All ".i1" images were edited without additional copies being made. Therefore, there are no copies of ".i1" images which require deleting.

Figure 7.1: Browsing Images

This option will cause this window to open.
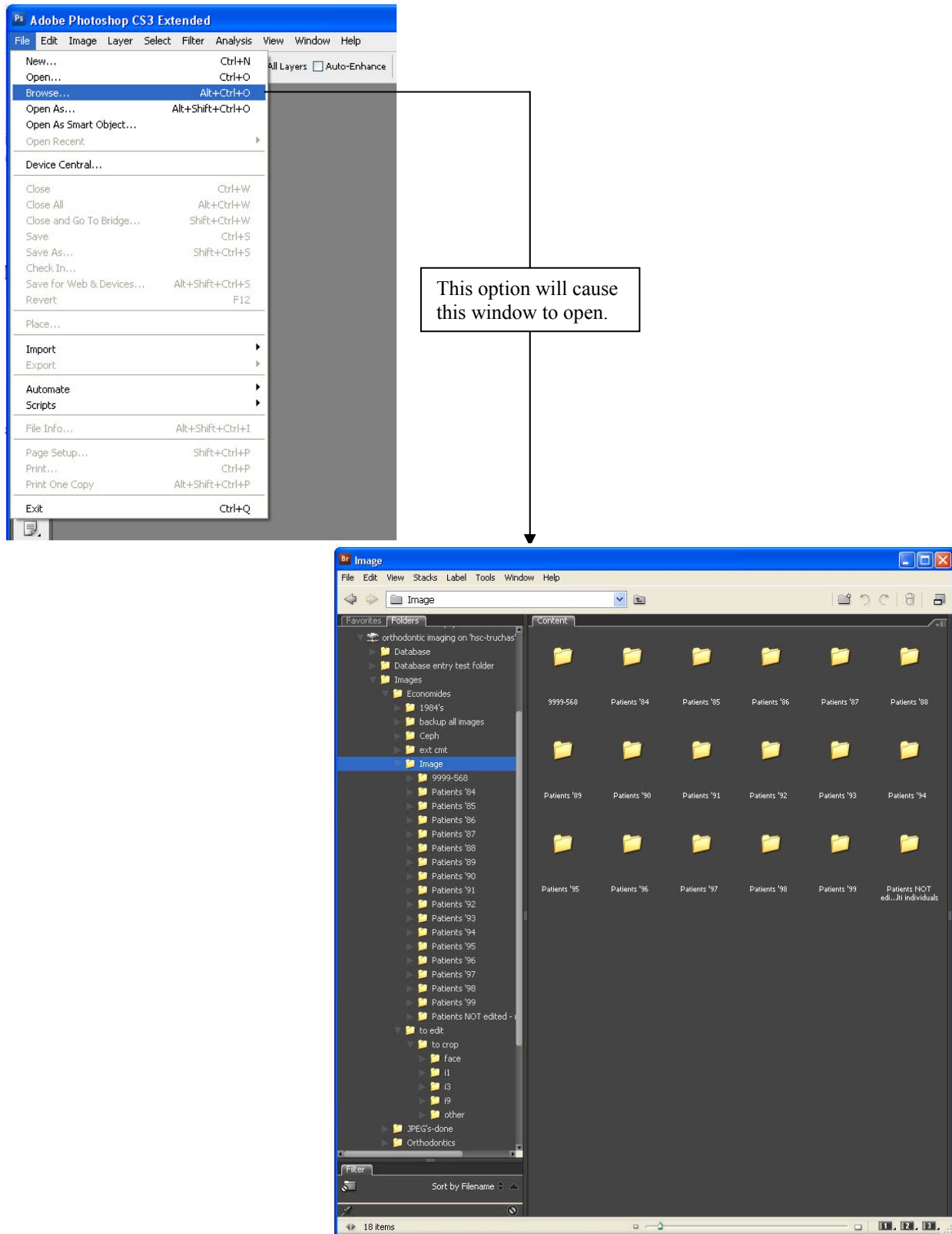
Figure 7.2: Preparing to Batch Rename
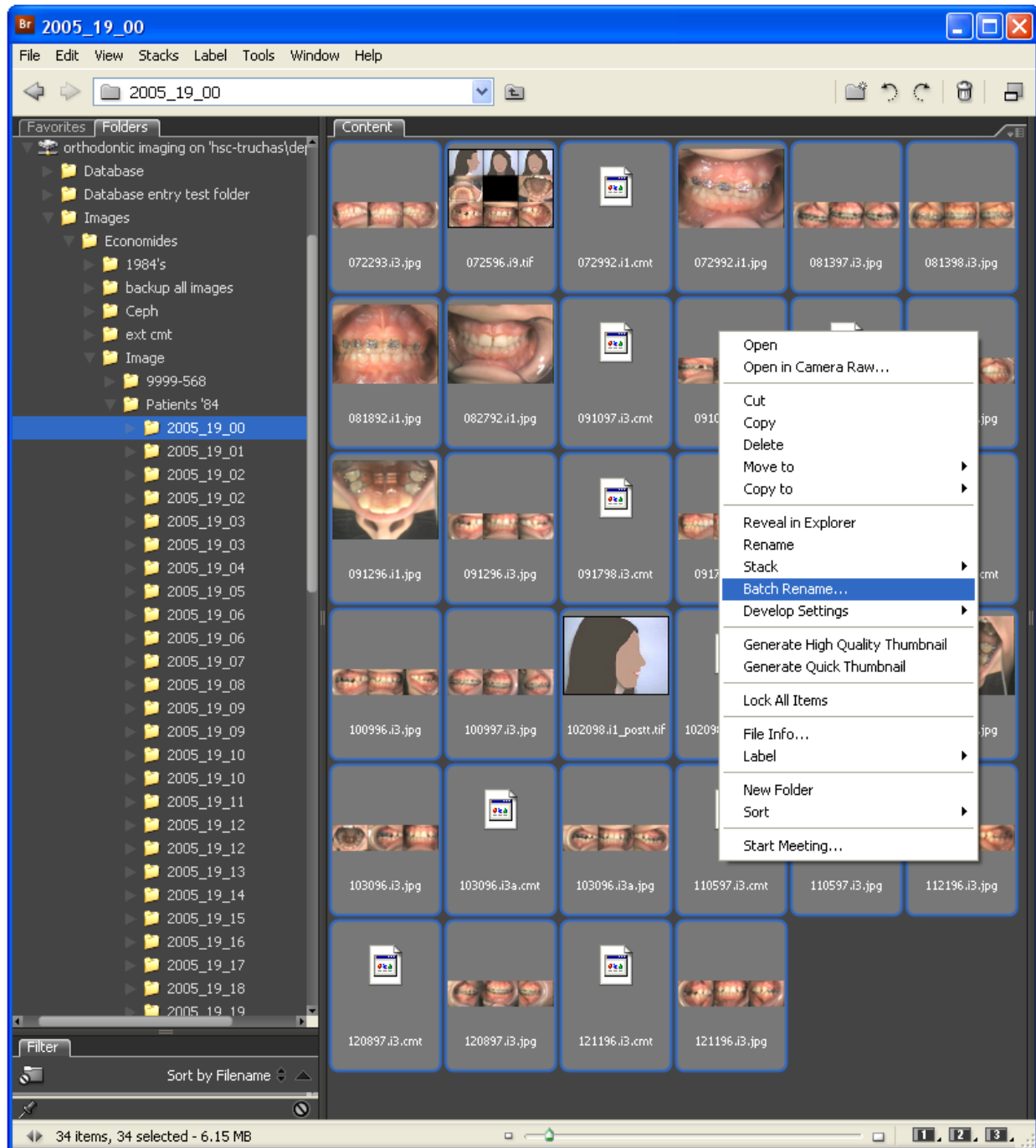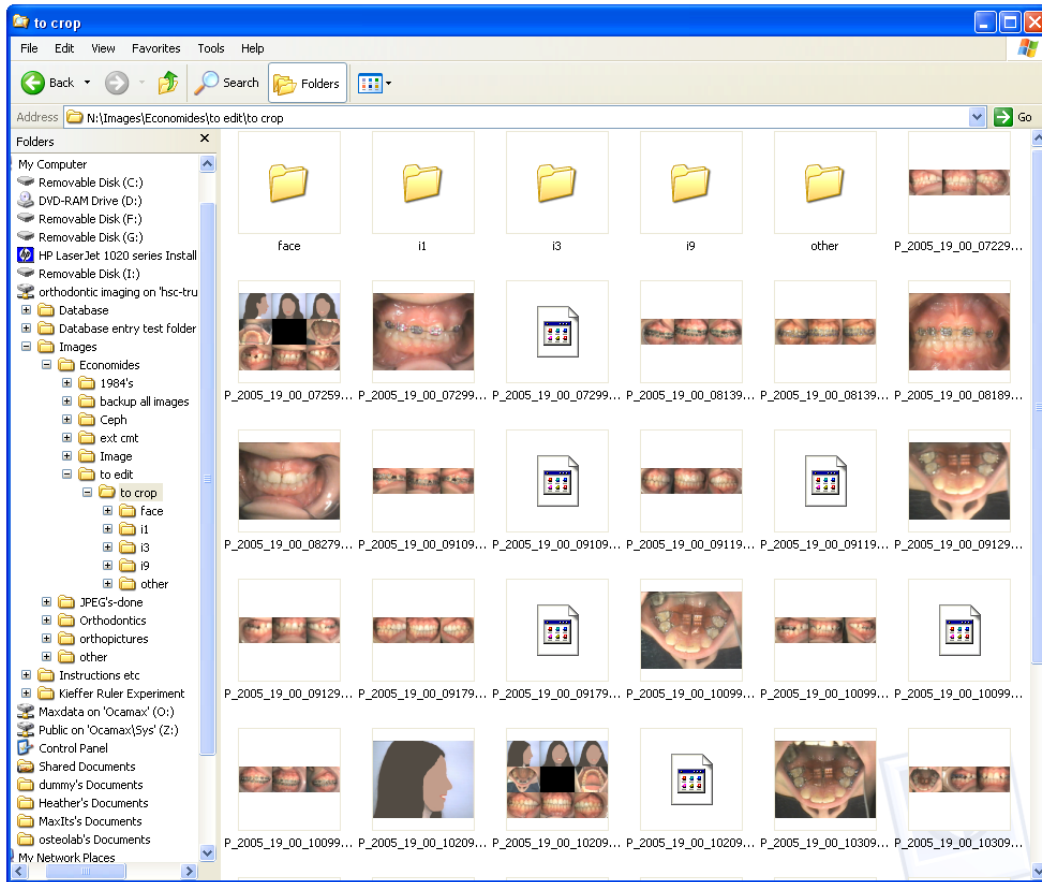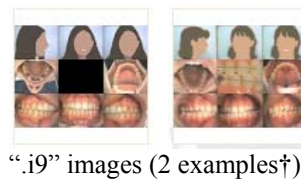
Figure 7.3: 'Batch Rename' Window – Stage 2
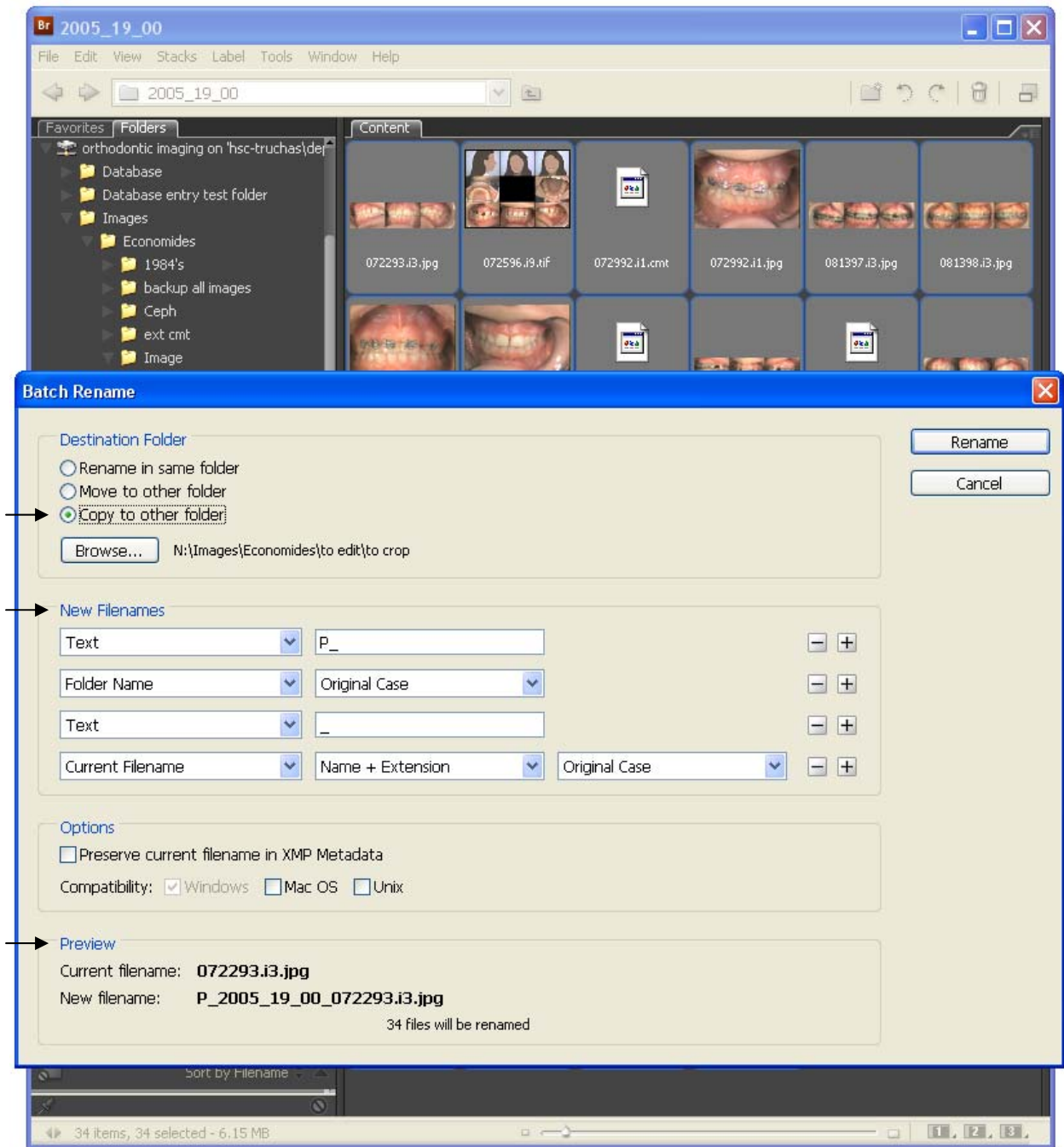
Figure 7.4: 'N:\ Images\...\to crop' – Unsorted

Types of E-Files:

CMT files   Face images*   ".i1" images (2 examples)

".i3" images (2 examples$^+$)   ".i9" images (2 examples†)
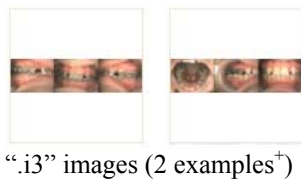
* These files also have an
  ".i1" extension.

$^+$ Note: See **Figure 7.14** for
  consequences of different
  inter-oral views. The first
  arrangement is more
  common than the second.

† Note: The first example
  has 8 (5 inter-oral) images
  while the second example
  has 9 (6 inter-oral)
  images.

Figure 7.5: 'N:\ Images\...\to crop' – Sorted
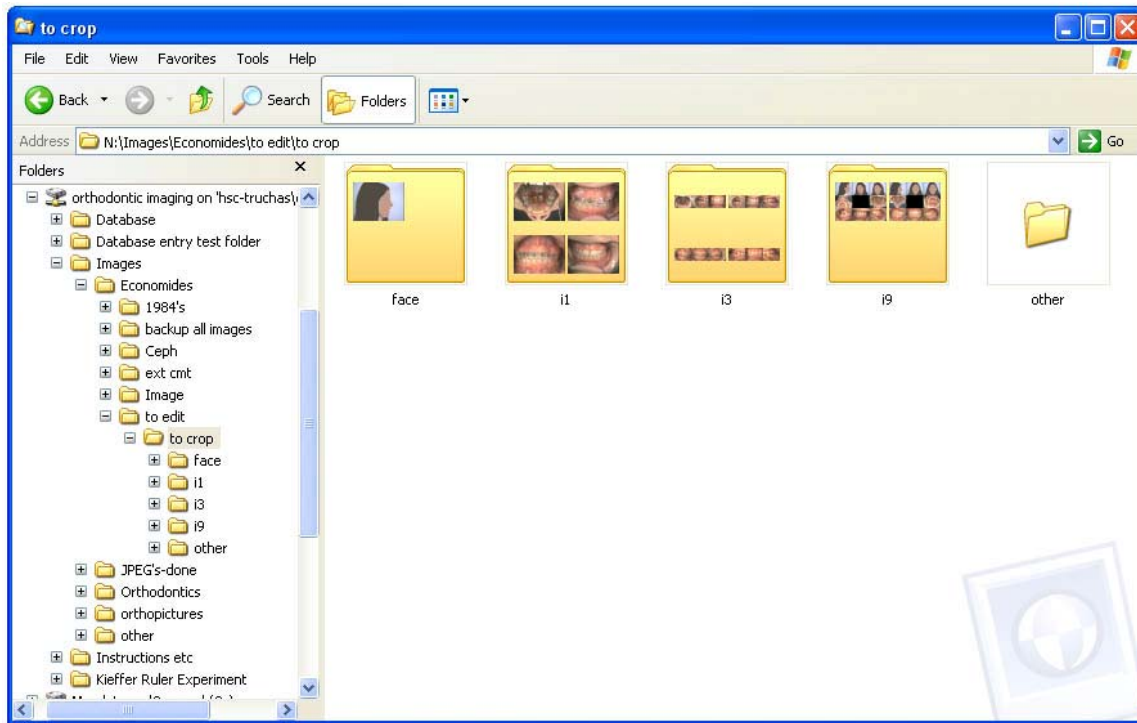
Figure 7.6: Bulk Rename Utility
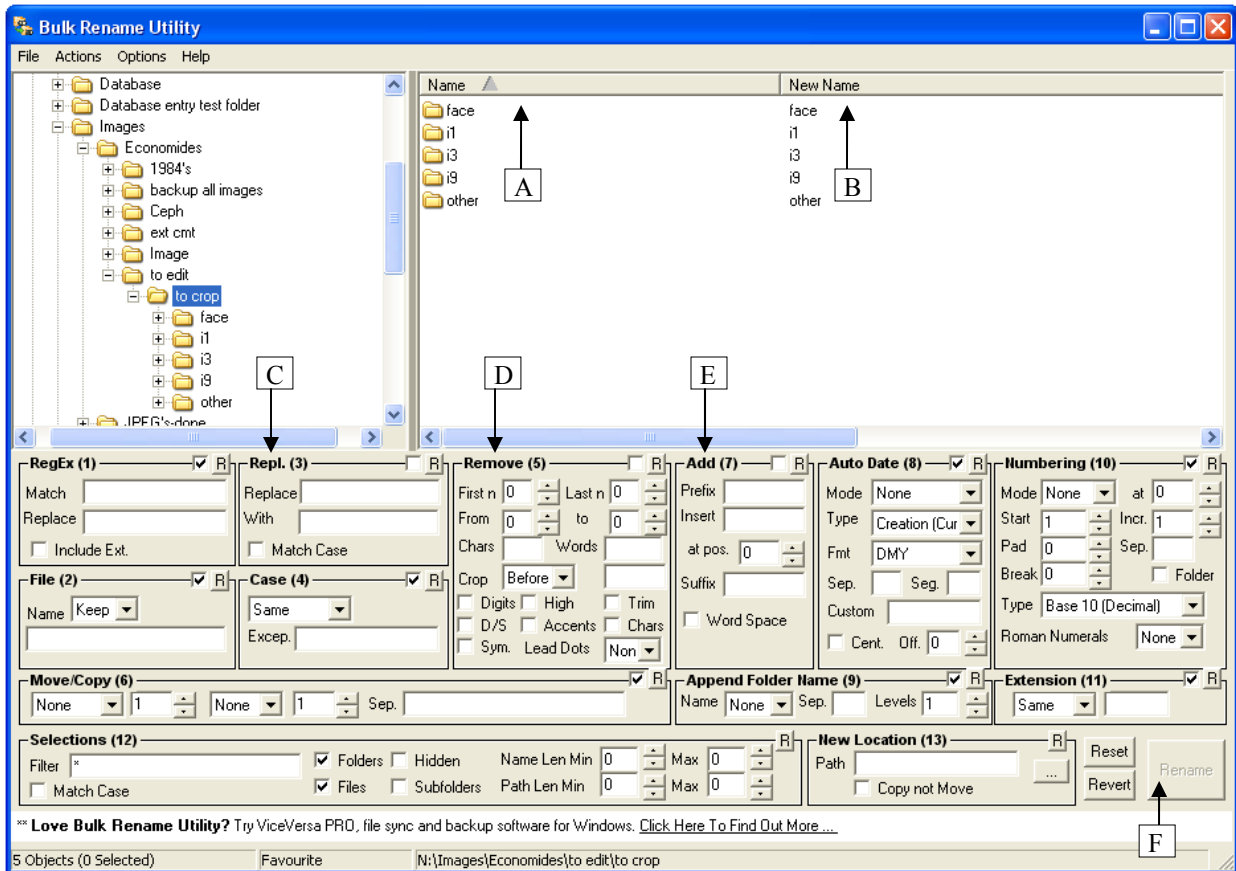
A   Name   File names in this column are as they currently are.

B   New Name   File names in this column are as they will appear once the specified changes have been made.

C   **Repl. (3)**   Text entered into the "Replace" field will be identified and replaced with any text entered into the "With" field.

D   **Remove (5)**   Will remove/delete all text located after character # (noted in "From" field) to character # (noted in "to" field)

E   **Add (7)**   Adds any text extered into the "Insert" field such that the first character in the "Insert" field is the # character (noted in the "at pos." field)

F   "Rename"   Clicking this button will change the files names as described. This action cannot be undone. Therefore, check the file names in the "New Name" column (B) carefully before clicking.

Figure 7.7: Examples of Bulk Renaming

Example 1
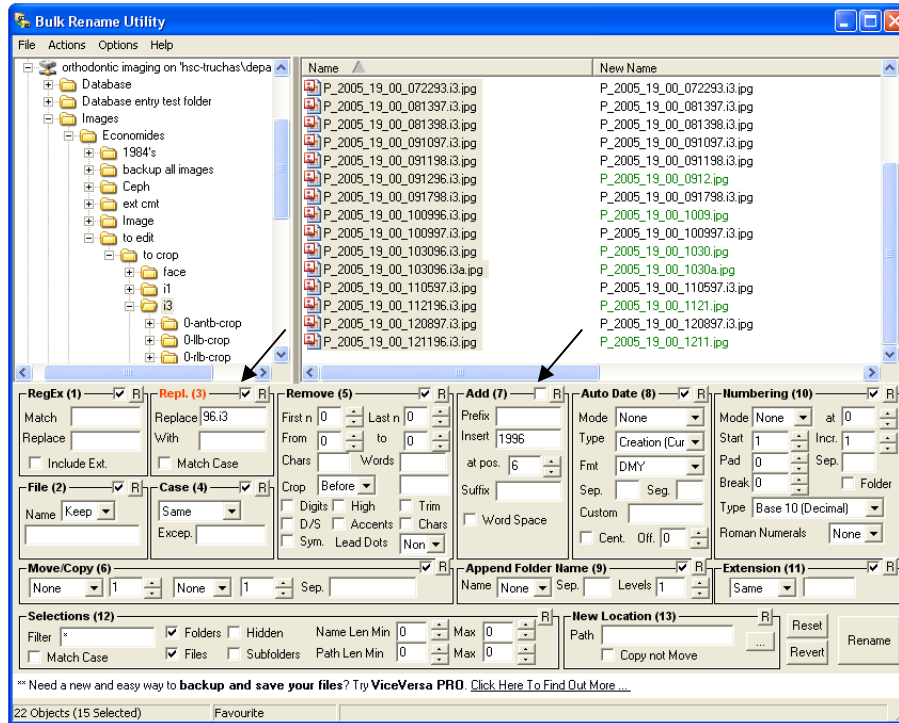
Notes:
All images are selected, and yet only e-files that include "96.i3" will have their name changed. This is because there is text entered to "Replace" under "Repl. (3)," but not for "With." This removes the text only for those e-file names that contain the text.

Although text is inserted to "Add (7)" the box is not checked and so will not be added.

Example 2
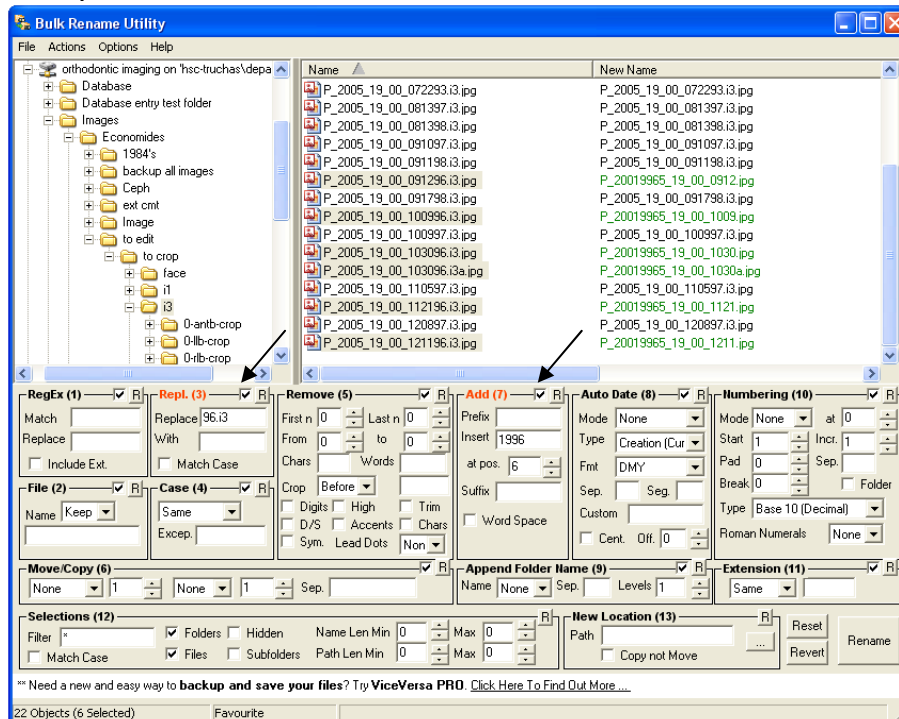
Note:
Only the 6 files with dates from 1996 are selected. Because of this, with boxes for both "Repl. (3)" and "Add (7)" checked, the text "96.i3" will be replaced and "1996" will be added.

Figure 7.8: Sorting ".i1" Images

unsorted ".i1" images

sorted ".i1" images
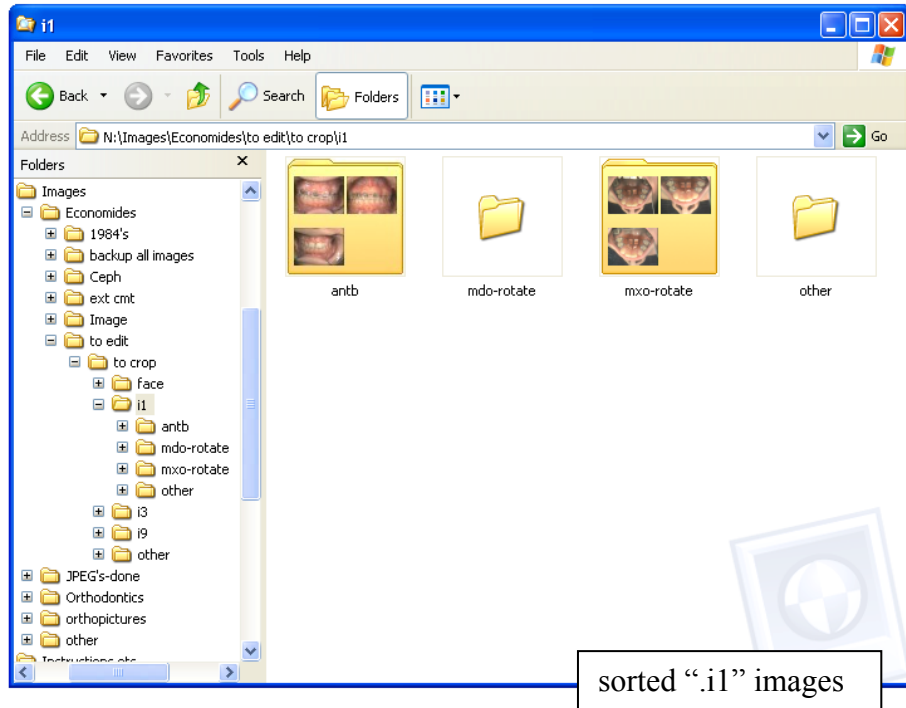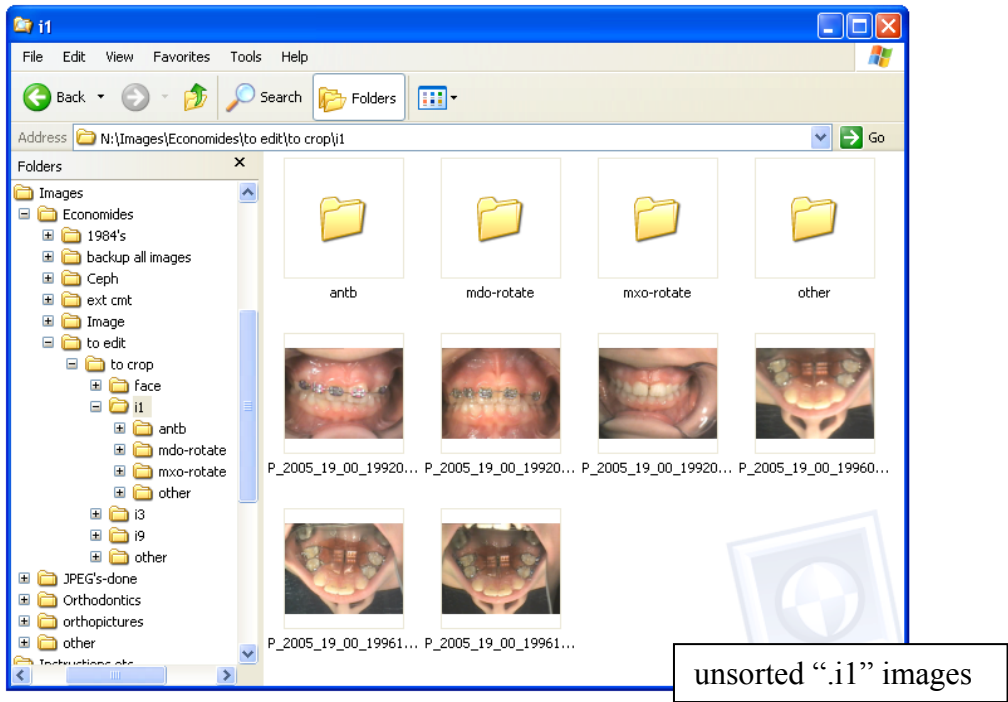
Figure 7.9: 'Batch Rename' Window – Stage 5: i1
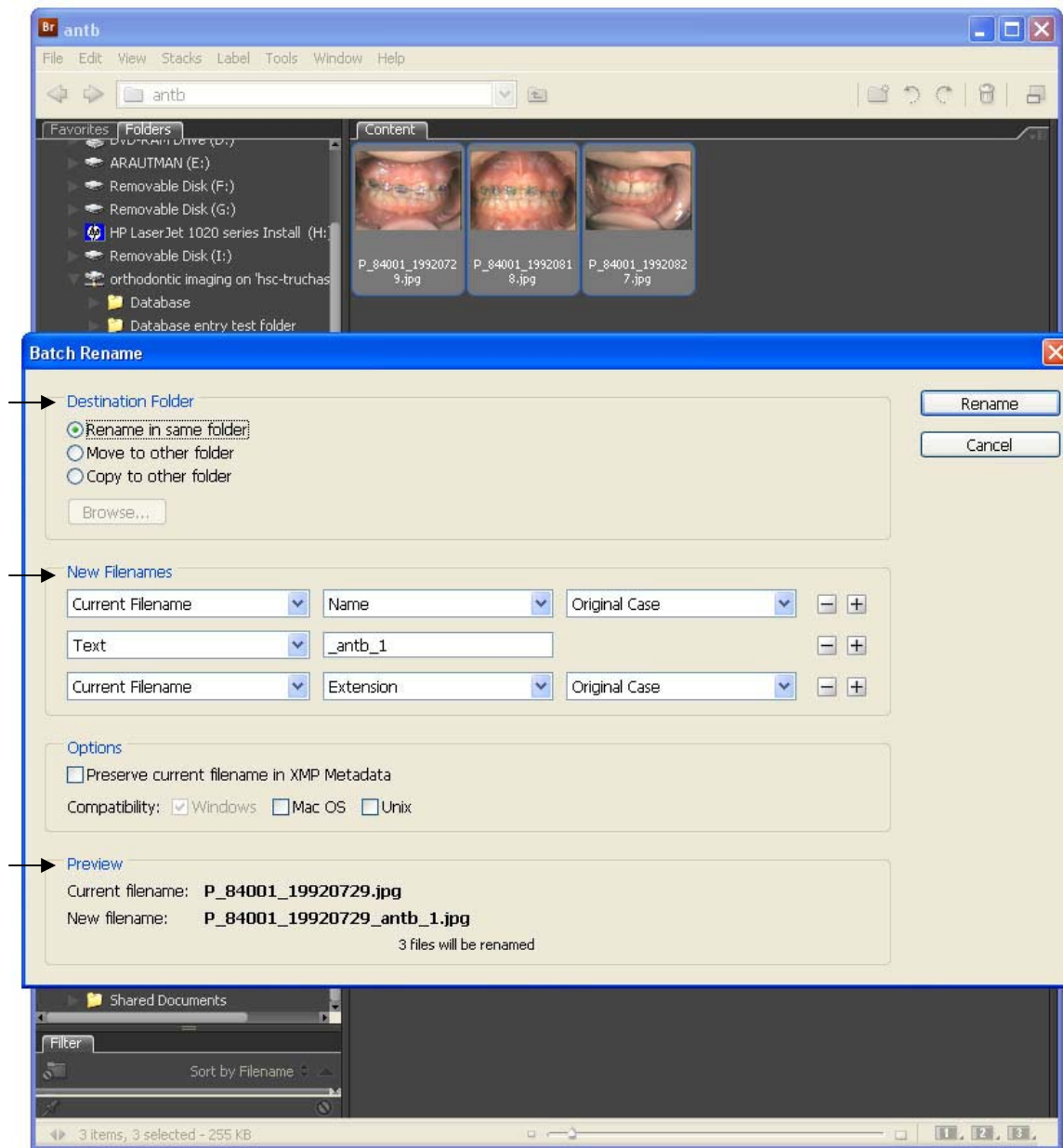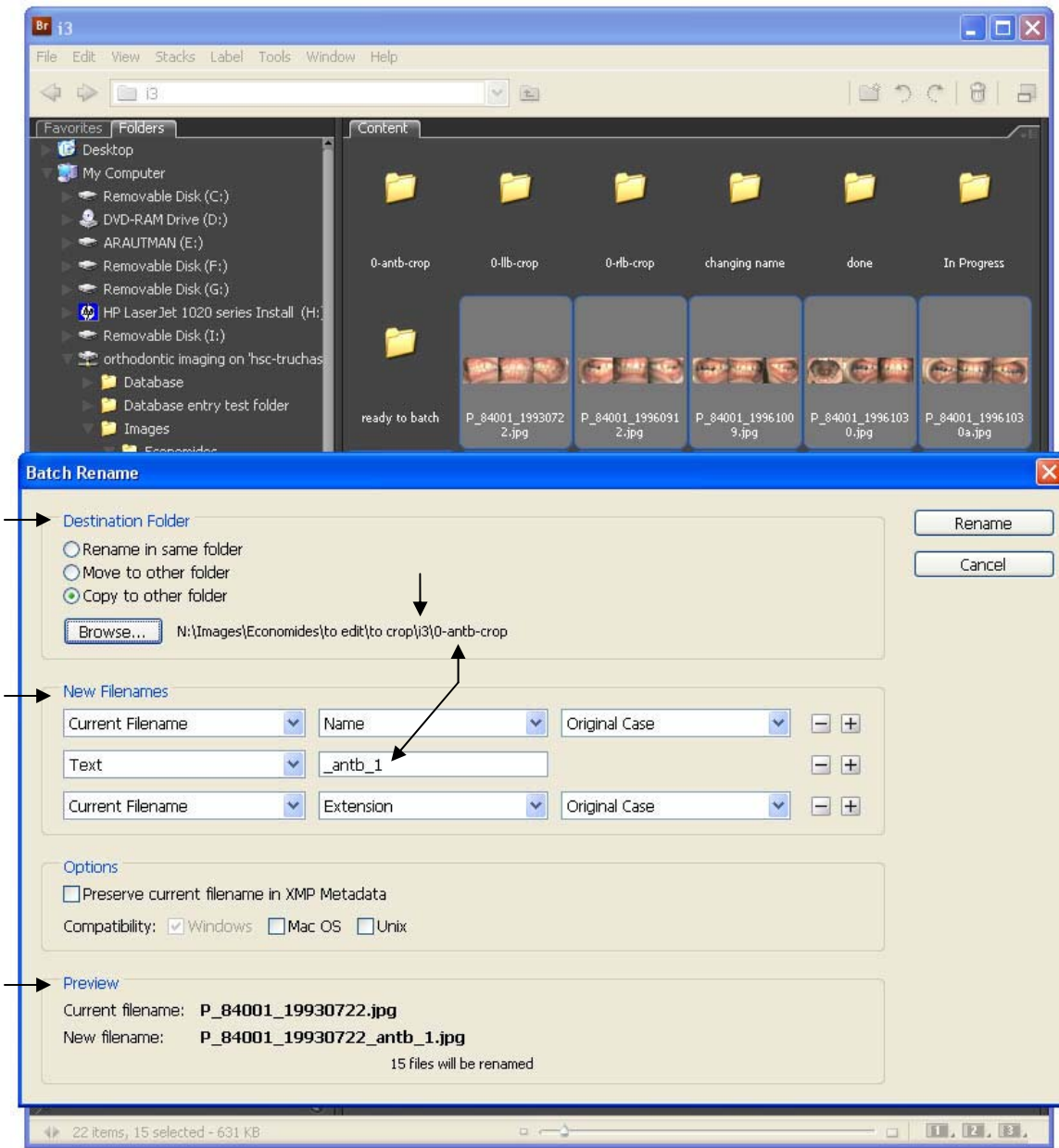
Figure 7.10: 'Batch Rename' Window – Stage 5: i3
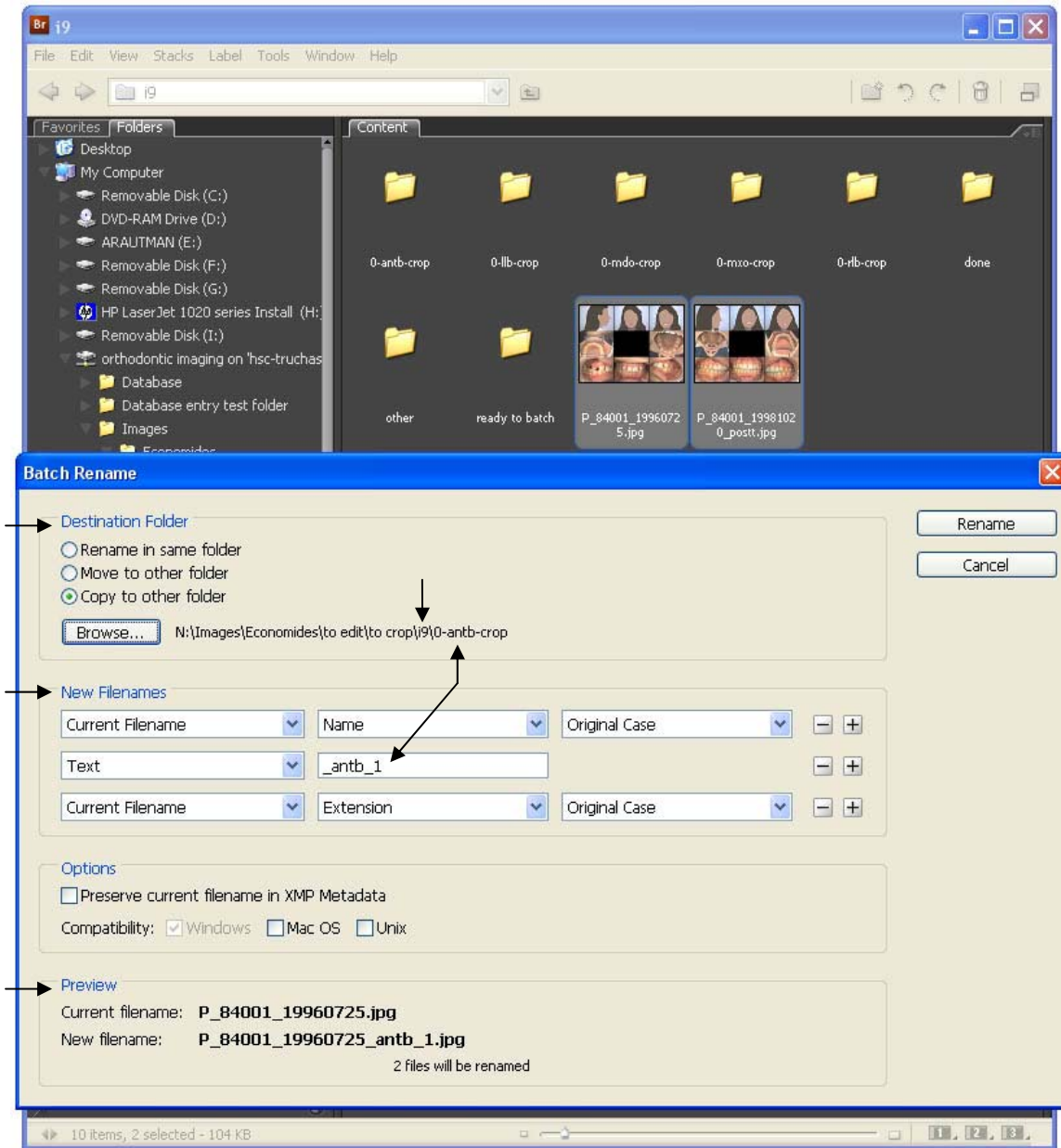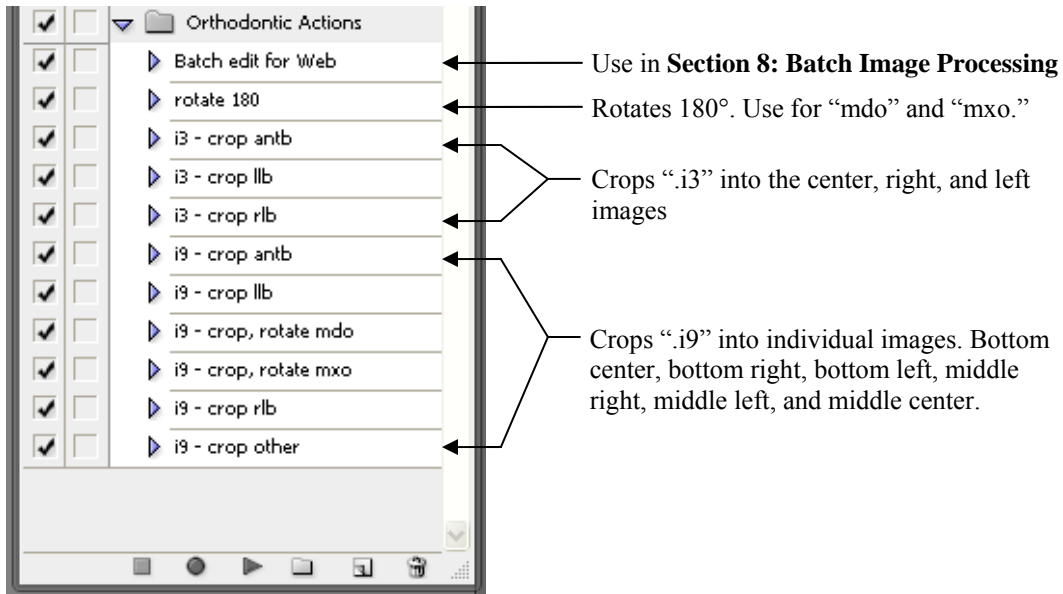
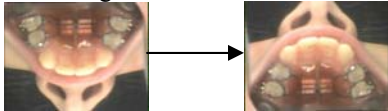Figure 7.11: 'Batch Rename' Window – Stage 5: i9

Figure 7.12: 'Orthodontic Actions' for Photo Editing

Use in **Section 8: Batch Image Processing**

Rotates 180°. Use for "mdo" and "mxo."

Crops ".i3" into the center, right, and left images

Crops ".i9" into individual images. Bottom center, bottom right, bottom left, middle right, middle left, and middle center.

Edit using action "rotate 180"

Edit using action "i3 – crop llb"

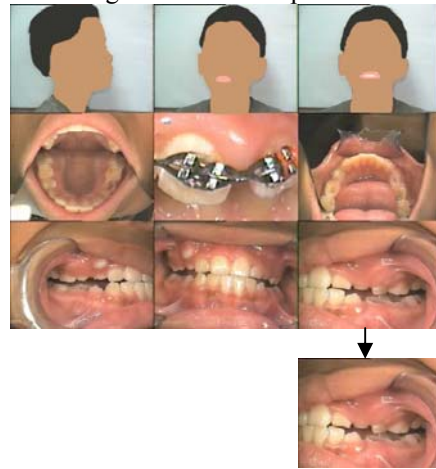Edit using action "i3 – crop antb"

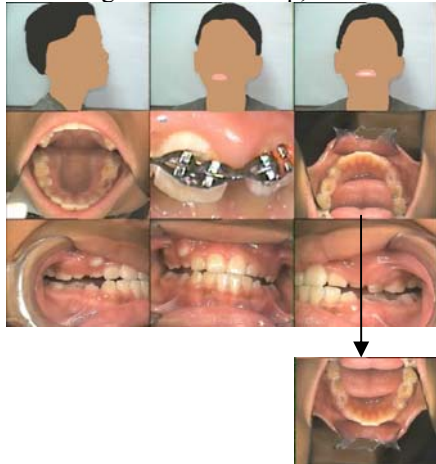Edit using action "i3 – crop rlb"

Figure 7.12: continued
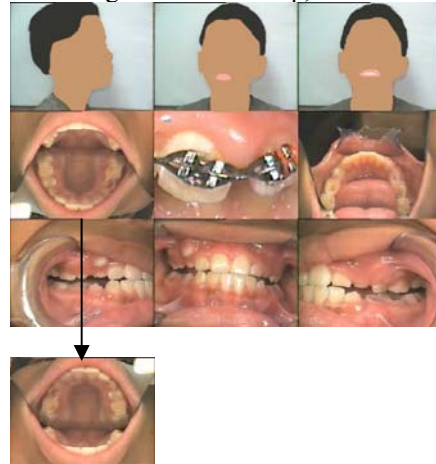
Edit using action "i9 – crop antb"
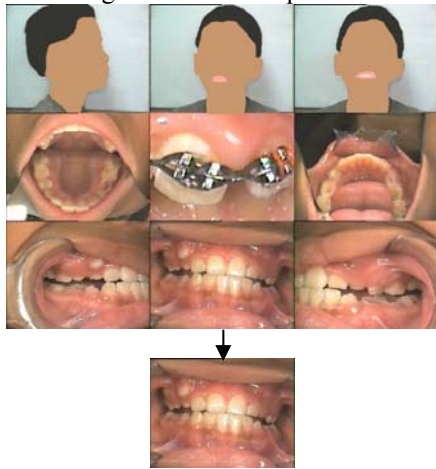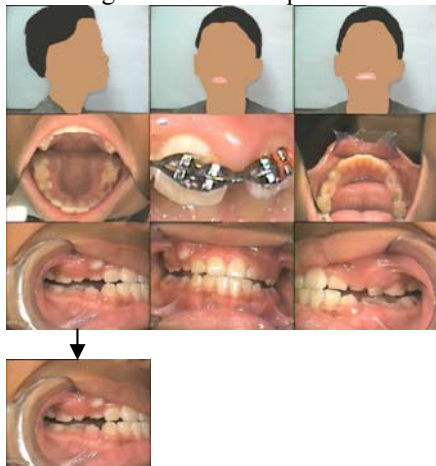

Edit using action "i9 – crop llb"

Edit using action "i9 – crop, rotate mdo"

Edit using action "i9 – crop, rotate mxo"

Edit using action "i9 – crop rlb"

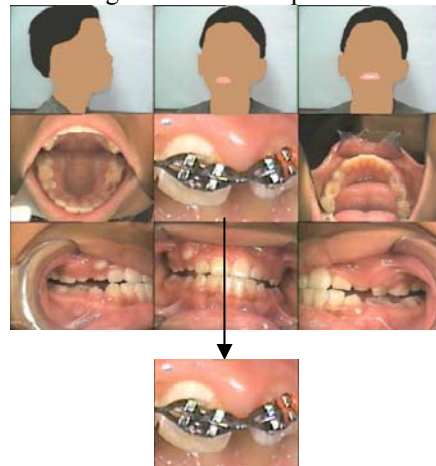Edit using action "i9 – crop other"
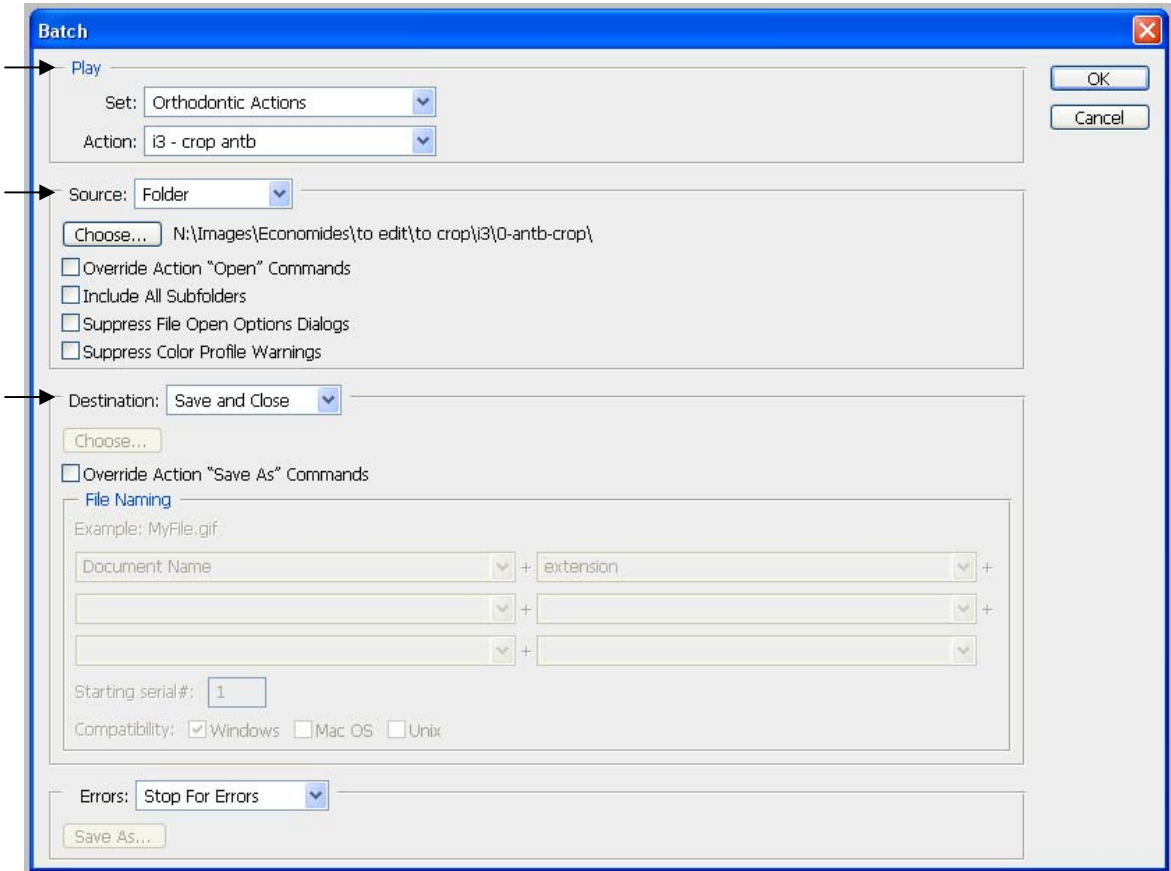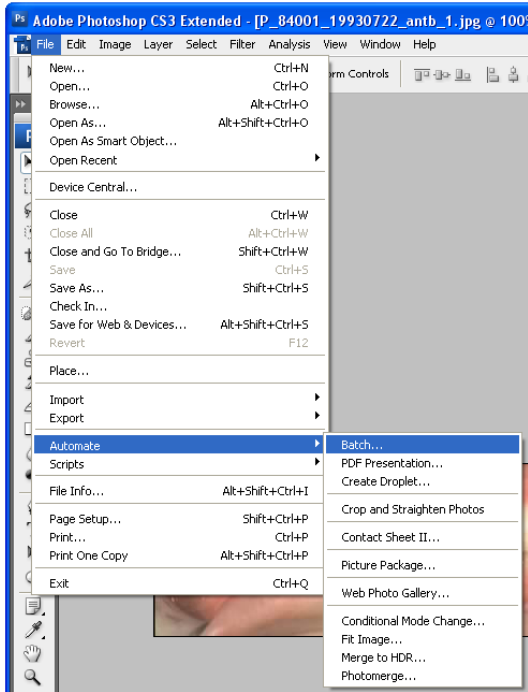
Figure 7.13: Batch Photo Editing

Figure 7.14: Examples of cropped images requiring name changes
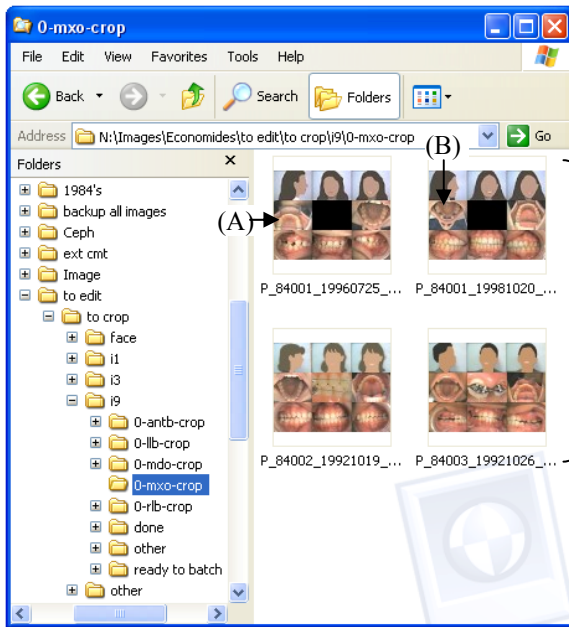
After editing using action "i9 – crop, rotate mxo," these four images were cropped and rotated to these four images.

However, because the inter-oral view (A) is different than view (B), even though their location in the 9x9 grid is the same, the resulting edited images, (A') and (B'), are different.

The e-file name for image (A') needs to be changed from "_mxo_1" to "_mdo_1" to correctly describe the view depicted.

Note: Inter-oral views in non-standard locations occur for both ".i3" and ".i9" e-files. These e-files should be corrected during **Stage 7**, **step 2**.
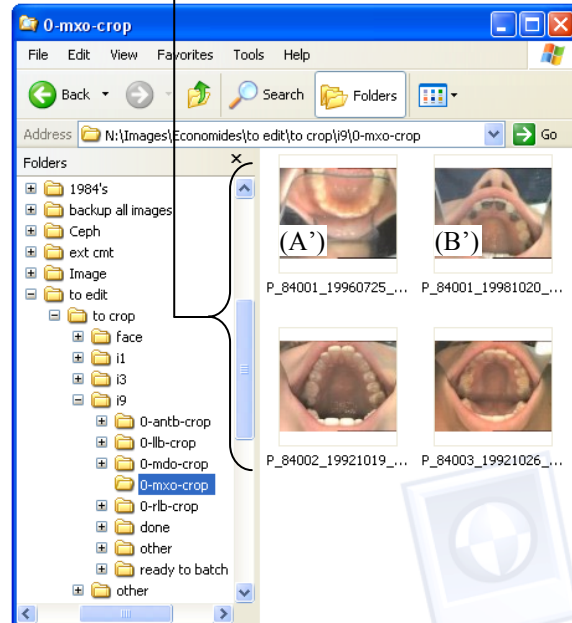
VIII. Batch Image Processing for Image Conversion to JPEG
    A. Notes:
        1. Batch editing works by applying the same action to numerous images. When setting all images to a uniform size, Photoshop shrinks (or expands) the image to fit within the square provided without changing the width to height ratio of the original image.
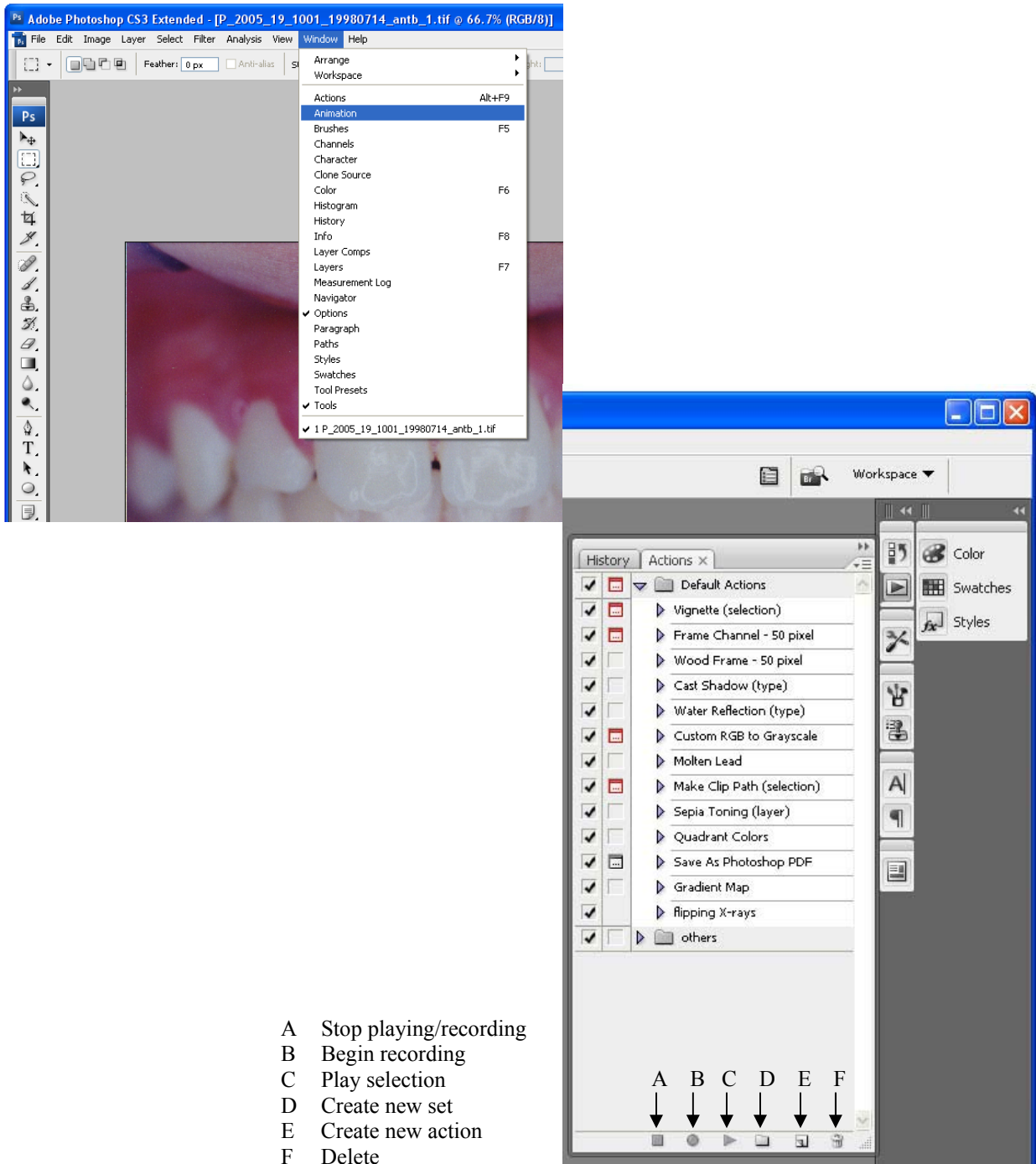   2. Batch image processing should be done in increments of 500 patients. (Each e-folder within N:\Images\Orthodontics\Scanned photos.) This way all of the sub e-folders get done at once.
        3. For images to work on the website they need to be no larger than 800 pixels square and need to be saved as a JPEG
        4. End goal for file location:
            a. Original image e-files remain in the patient's e-folder
                i. Location: N:\Images\Orthodontics\Scanned photos
                ii. File types:
                    - .TIF format
                    - Photoshop (.PSD or .PDD)
            b. JPEG image for web
                i. Location: N:\Images\Orthodontics\all images-ready for web
                ii. File type: JPEG
        5. After you have batch edited a folder of images, contact the HS Library and Informatics Center Manager, so that he can refresh the website with the added images.
            a. See **Appendix A: Directory** for contact information
        6. The steps described in **Section B** are only for creating/recording an action. If actions are already created (and they probably are) then skip to **Section C: To perform batch editing**. **Section C** describes how to run an action that has already been created.

    B. To create/ record an action for batch editing for web
        1. Open first image (in Photoshop) within series to be batch edited
        2. Window → Actions
            a. See **Figure 8.1: Actions Window**
            b. Letters describing buttons will be used to identify buttons in directions
        3. See **Figure 8.2: Screen Shots for Creating/ Recording an Action**
        4. Click button "D – Create new set"
        5. Name "New Set" as "Orthodontic Actions" → Click "OK"
            d. See **Figure 8.2A**
        6. Click button "E – Create new action"
        7. Name "New Action" as "Batch Edit for Web" → Click "Record"
            d. See **Figure 8.2B**
        8. File → Automate → Fit Image
            a. Set both "Width" and "Height" to 800 pixels
            b. By setting "Fit Image" to a square, will prevent image ratio from being changed
            c. See **Figure 8.2C** and **Figure 8.2D**

9. File → Save for Web and Devices
    a. Options: "JPEG," "High," "Quality: 60"
    b. Select "Save"
    c. See **Figure 8.2E** and **Figure 8.2F**
10. Specify folder where it should save the image
    a. Folder: "N:\Images\JPEG's"
    b. Select "Save"
    c. See **Figure 8.2G**
11. Click button "A – Stop playing/ recording" to stop recording
    a. Note: Steps 8 – 10 record what has been done as the action from Step 7
12. Exit out of the Actions window

C. To perform batch editing using "Batch Edit for Web" Action
    1. Open Photoshop
    2. File → Automate → Batch
    3. See **Figure 8.3: Batch Photo Editing**
    4. "Play" box
    d. "Set: Orthodontic Actions"
    e. "Action: Batch Edit for Web"
    f. This will perform the steps defining the "Batch Edit for Web" to all e-files within the e-folder selected below.
    5. "Source" box
       a. Select: "Source: Folder"
       b. "Choose…" – to specify the e-folder to be batch edited
          i. Location: "N:\Images\Orthodontics\Scanned photos"
          ii. E-folder of 500 within the above e-folder
       c. For "Batch edit for Web," include subfolders, check "Include All Subfolders"
    6. "Destination" box
       a. Select: "Destination: Folder"
       b. "Choose…" – to specify the e-folder to place copies image
       c. Location: "N:\Images\JPEG's\TIF's"
       d. Notes:
          i. At the completion of "Batch Edit for Web" there will be three (3) sets of all images contained in the source folder.
             - (1) original set, unmodified, and still in their separate e-folders within "N:\Images\Orthodontics\Scanned photos"
             - (1) edited set, modified and copied to the e-folder "N:\Images\JPEG's" as was specified in the steps of "Batch Edit for Web" action.
             - (1) edited set, copied to the e-folder "N:\Images\JPEG's\TIF's"
          ii. The images in "N:\Images\JPEG's\TIFs" need to be deleted when done with the batch editing.
          iii. It is unclear if it is necessary it is to create this third set of images, but as they are duplicates, it is appropriate to delete them.
    7. Click "OK"

Figure 8.1: Actions Window

A   Stop playing/recording
B   Begin recording
C   Play selection
D   Create new set
E   Create new action
F   Delete

Button "A" is blue and button "B" is red
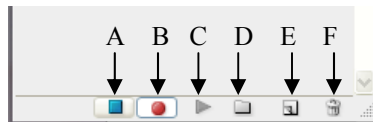when an action is being recorded.

Figure 8.2: Screen Shots for Creating/ Recording an Action
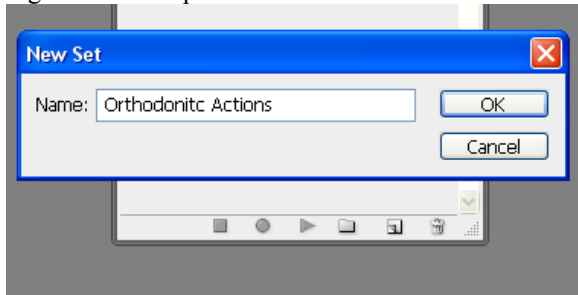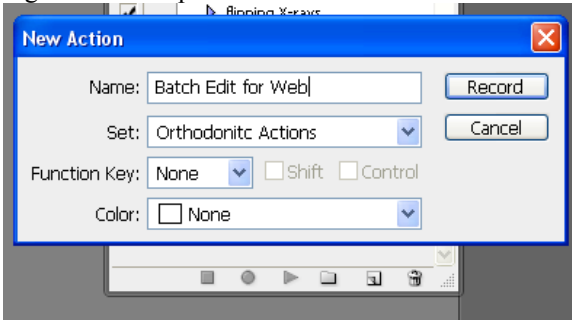
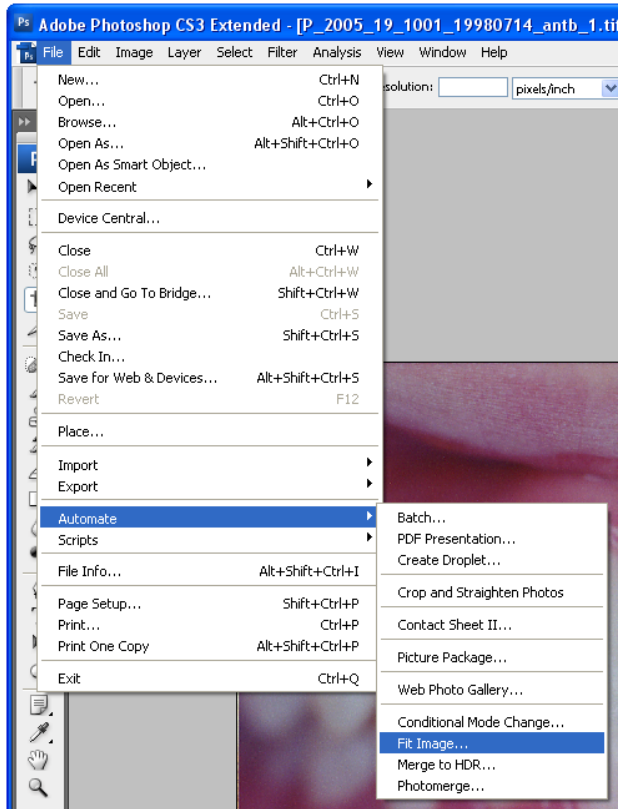Figure 8.2A: Step 5

Figure 8.2B: Step 7

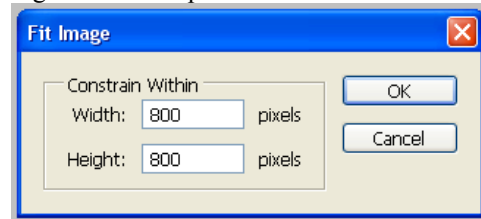Figure 8.2C: Step 8
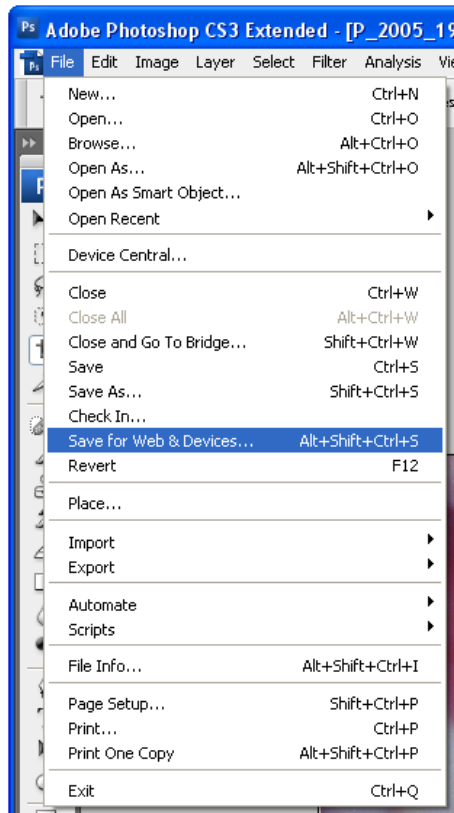

Figure 8.2D: Step 8a

Figure 8.2: continued

Figure 8.2E: Step 9

Figure 8.2F: Step 9a
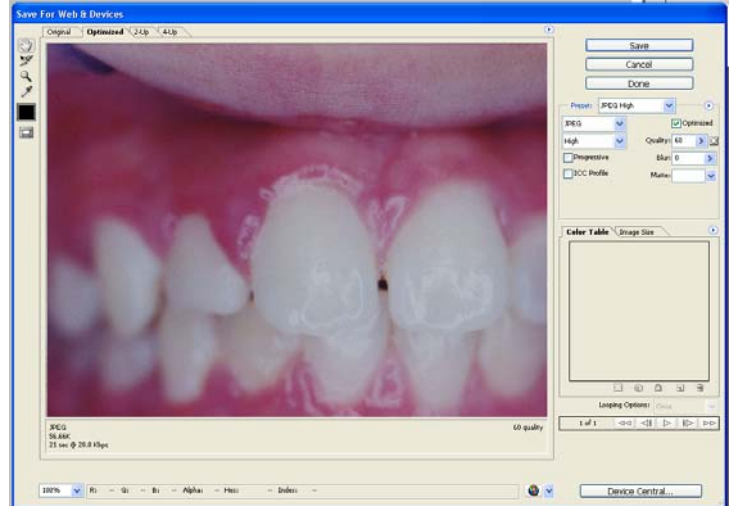

Figure 8.2G: Step 10
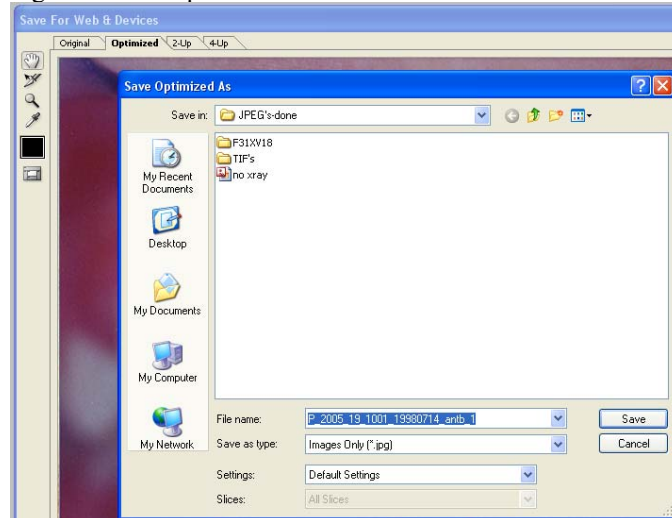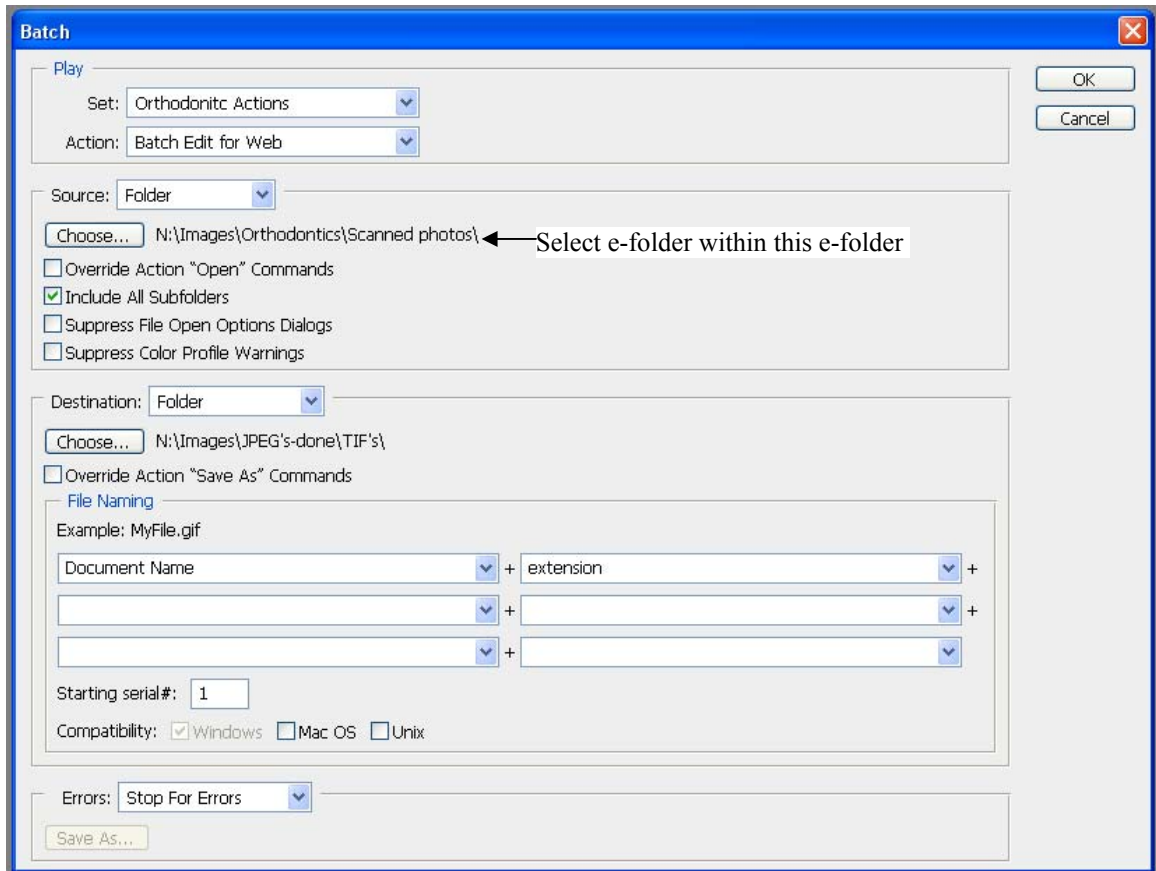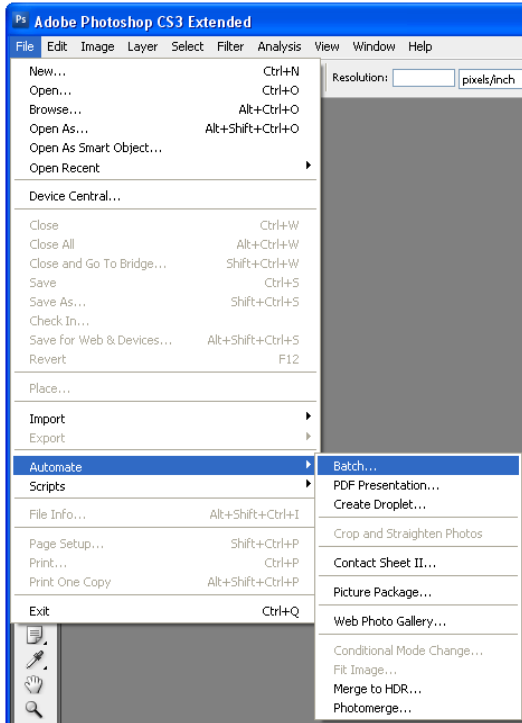
Figure 8.3: Batch Photo Editing

IX. **General Notes on Data Entry**

  A. Accessing the database

    1. Open the database

      a. Location: N:\Database

      b. File: "Orthodontics.mdb"

      c. File type: Microsoft Access

    2. Click "Open" if you get a "Open File – Security Warning" window

    3. If you get a "Securing Warning" bar across the top of the screen

      a. Click: "Options…"

      b. Window pops up "Microsoft Office Security Options"

      c. Select: "Enable this content"

      d. Click: "OK"

      e. Note: If you get the "Securing Warning" but do not tell Microsoft Access to enable the content, you will be unable to access any of the tables

  B. Locating the patient in the database

    1. In "Datasheet View" look up patient by name

      a. Can be easiest to locate a patient if patients are alphabetized by last name in the "Datasheet View"

    2. Highlight the row with the patients name, and switch to "Form View"

  C. Prior to beginning data entry

    1. Remove all documents/ papers, photos, and x-rays from the patient's folder

    2. Items will either be returned to the folder, pulled for copying, or pulled as confidential.

      a. See **Section X: Removal of Confidential Information**

  D. Count all inter-oral pictures and x-rays in the folder

    1. Number of inter-oral pictures and x-rays in the folder should match the number of images in the e-folder "N:\Images\Orthodontics\Scanned photos"

    2. If an inter-oral picture was not scanned – scan the picture

    3. If an x-ray was not scanned, why not? Some x-rays are too thick, this seems to be especially true for transfer patients. Regardless of why an x-ray was not scanned, note its presence in the <u>Comments</u> field.

  E. Additional images from Dr. Economides

    1. See **Section VII. Editing Electronically Received Photos**

    2. Unedited copies of all images received from Dr. Economides

      a. Location: "N:\Images\Economides\Image"

      b. Back-up copy, not involved in image editing process

        i.   Location: "N:\Images\Economides\backup all images"

    3. Edited copies

      a. Location: "N:\Images\Orthodontics\all images-ready for web"

      b. The sub e-folders within contain edited for web scanned images

  F. See **Section IX. Data Entry Instructions**

X. Data Entry Instructions
A. NOTES:
   1. See **Figure 10.1: Blank Data Entry Screen**
      a. Names of sections, fields, pull down menus, checkboxes and buttons in the database are underlined

B. Patient Information
   1. NOTE: This information is found on the patient identification card
   2. Accession Number – (2005.19.xxxx)
   3. Name – Check the name
      a. For First Name, enter the full name, not just a nickname, if full name is not already entered
      b. Enter Middle Name if given, or initial if given
   4. Date of Birth
      a. M/D/YY
      b. Database will auto format the date
   5. Sex
      a. "M" – male
      b. "F" – female
   6. Address / City, State, Zip
      a. The address listed in the database is the most recent address that Dr. Economides had for the patient. Therefore, do NOT correct address from the address listed on the card.
      b. Correcting "Ne" to "NE" (for Northeast) is appreciated (or Nw, Se, Sw)
   7. Phone Number
      a. (505) 123-4567
      b. The database will automatically format the phone number
      c. Do enter the area code – 505
      d. Leave phone number field blank if:
         i. If address in database is out of state
         ii. If no phone number is listed

C. Patient History
   a. NOTE: This information is found on the patient identification card
   b. Check the appropriate squares for:
      a. Thumb sucking
      b. Mouth breathing
      c. Lisp
      d. Tonsillectomy (tonsils removed)
      e. History of Supernumerary Teeth

D. Ancestry Estimates
   1. NOTE: TWO people must do this independently!
      i. Each ancestry estimation should be its own record
   2. See **Section 1C: Orthodontic Database Reporter** to add a new reporter
   3. Ancestry estimation is required if:

a. If full face photos of the patient are included.
b. Full face photos may be in the folder, or in the e-folder of Economides images
c. Either slide images, digital, or hard copy photographs are acceptable.
4. For ancestry estimation:
a. <u>EstimateDate</u>: date when you are making the estimation
    i. Enter today's month/day for date
    ii. The database will auto format and add year.
b. <u>Reporter</u>: enter your name (last, first)
    i. Begin typing your last name in the <u>Reporter</u> field. The database will highlight the name that matches.
    ii. Alternatively, pull down menu will allow for selection of the reporter
c. Check squares for:
    i. <u>Patient's Race</u>:
        - You can select more than one
        - Either more than one per record, or more than one record per reporter
        - See **Section 4d** below
    ii. <u>Race Estimate based on</u>:
        - Traits used for ancestry estimation(s)
        - Select all that were used
d. NOTE: If you feel that different traits suggest different ancestry estimation(s), you can use multiple records to indicate different ancestry estimations and the traits that support that ancestry estimation.
5. Ancestry and trait options
1. <u>Patient's Race</u>:
    i. <u>Amerind</u> – "American Indian or Alaska Native"
        - "A person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment."
        - Selection of this race will cause a pull down menu of the different recognized tribes to appear
        - If you feel confident selecting a tribal affiliation, do so in this pull down menu
    ii. <u>Asian</u> – "Asian"
        - "A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.
    iii. <u>AfAm</u> – "Black or African American"
        - "A person having origins in any of the black racial groups of Africa. Terms such as "Haitian" or "Negro" can be used in addition to "Black or African American."
    iv. <u>Hisp</u> – "Hispanic or Latino"
        - "A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race. The terms, "Spanish origin," can be used in addition to "Hispanic or Latino."
    v. <u>Hawaiian</u> – "Native Hawaiian or Other Pacific Islander"

- "A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands."
      vi. EuAm – "White"
- A person having origins in any of the original peoples of Europe, the Middle East, or North Africa."
      vii. Descriptions of races from "Provisional Guidance on the Implementation of the 1997 Standards for Federal Data on Race and Ethnicity."
Available on-line at:
    http://www.whitehouse.gov/omb/inforeg/re_guidance2000update.pdf

  2. Race Estimate based on:
    i. Address Indicator
- This can be especially useful in tribal affiliation if the home address is on a reservation
    ii. Name Indicator
    iii. Skin Color Indicator
    iv. Hair Form Indicator
    v. Facial Features Indicator

6. Maintain a list of patient's requiring a second ancestry estimation
  a. Word document with the list of patient's requiring second ancestry estimation
  b. Location: "N:\Database"
  c. File name: "Second Ancestry Estimation Needed.doc"

E. Treatment Events
  1. TreatmentDate:
    a. Each day of treatment requires its own record with the appropriate date
    b. A "Treatment" consists of any
      i. Photo or x-ray taken
      ii. Any of the Clinical Events: Procedures
    c. Click: Fuzzy Date if day, month, or year is unknown
    d. Click: No Date if no date is given for the treatment even
    e. Click: Treatment Completed for day treatment is completed if given
    f. If either an x-ray or a picture is listed as not having a date, CHECK to see if you can find one
      i. For example:
- If the date cannot be read, but the age (year and month) can be read and can be matched with another image, change the date.
- If the date can be partly read, the complete date can sometimes be found on the outside of the patient's folder.
      ii. If you change the date, or anything about the file name after it has been uploaded to the website:
- Email the analyst/ programmer specialist (Kimberly Hagen) with the name changes or file additions.
  2. Clinical Events:
    a. See **Figures 10.2 – 10.7** for examples of forms containing treatment information
    b. Treatment information may also be found on the outside of the folder

c. Pull down menu <u>Procedure</u>:
 i. <u>Permanent Extraction Request</u>
 ii. <u>Permanent Extraction Performed</u>
 iii. <u>Deciduous Extraction Request</u>
 iv. <u>Deciduous Extraction Performed</u>
 v. <u>Banding/Bracketing</u>
 vi. <u>Surgical Exposure Request</u>
 vii. <u>Surgical Exposure Performed</u>
 viii. <u>De-banding</u>
 ix. <u>Orthognathic Surgery</u>
 x. <u>Retention</u>
 xi. <u>Orthodontic diagnosis</u>
 xii. <u>Congenitally Missing Teeth</u>
 xiii. <u>POG</u>

d. For <u>Extractions</u>:
 i. Click: <u>Details</u> to specify teeth extracted
  - See **Appendix E: Tooth Naming Convention**
 ii. When present, enter both extraction request and conformation of extraction performed as separate treatment events, each on the appropriate date.
 iii. NOTES:
  - If tooth identified in the folder as having been extracted, but does not specify when the extraction occurred, note as "performed," enter as the date when extraction was noted, and under <u>Comments</u> note as "prior M/D/YY extraction performed"
  - On front of the folder if says "no 8's" enter as <u>Permanent Extraction Request</u>

e. For <u>Banding/Bracketing</u>: sometimes is referred to as appliances placed

f. For <u>Surgical Exposure</u>:
 i. Click: <u>Details</u> to specify teeth exposed
  - Specify if exposure is requested or performed
 ii. Also noted in file as "uncover" or "close bond"
 iii. See **Appendix E: Tooth Naming Convention**

g. For <u>Orthognathic Surgery</u> → then Click: <u>Details</u>
 i. Under <u>Details</u> record dental arc involved in the surgery
 ii. Note in the <u>Comments Field</u> (**Section E. Comments**) the type of surgery
 iii. Format: M/D/YY surgery type
 iv. Definition:
   orthognathic surgery – surgery of the facial skeleton, such as the mandible or maxilla, to restore proper anatomic or functional relationship.

h. For <u>Orthodontic Diagnosis</u> → then Click: <u>Details</u>
 i. Malocclusion class and division/type if given
 ii. Crowding if noted
 iii. TMJ or other problems, select "Other" under <u>Orthodontic Diagnosis</u>
  - Note in <u>Comments</u>

- M/D/YY diagnosis – diagnosis noted in Folder
iv. For examples of forms with diagnostic information see:
- **Figure 10.2: Sample Case Analysis and Treatment Plan**
- **Figure 10.3: Sample Medicaid Utilization Review Forms**
- **Figure 10.4: Sample Orthodontic Insurance Form**
- **Figure 10.5: Sample Patient Identification Card**
-

     i.   For <u>Congenitally Missing Teeth</u> → Click: <u>Details</u>
        i.   For <u>TreatmentDate</u>, use date when missing tooth was noted
        ii. Use same tooth naming convention as for tooth extraction
        iii. See **Appendix E: Tooth Naming Convention**
     j.   For <u>POG</u>: enter date of form where mentioned

3. <u>Photos</u>: for each photo taken on a given day
   a. <u>View</u>: select view of a given photo

i.	<u>mxo</u>	maxillary occlusal
ii.	<u>mdo</u>	mandibular occlusal
iii.	<u>antb</u>	anterior, teeth in occlusion
iv.	<u>llb</u>	left lateral, teeth in occlusion
v.	<u>rlb</u>	right lateral, teeth in occlusion
vi.	<u>unknown</u>	unknown

   b. <u>Photo Date</u>: date photo was taken
      i. NOTE: Once the date has been entered into the <u>TreatmentDate</u> field, clicking in this field will cause the database to automatically fill in the date.
      ii. If no date is available, click the <u>No Date</u> box
   c. <u>File Location</u>: leave blank during data entry.
      i. Files will be automatically linked
      ii. Exception: images without a date.
         - Manually copy and paste text of e-file names into this field
      iii. Images located in "N:\Images\Orthodontics\all images-ready for web"
         - In this e-folder, images are organized by accession number
         - Images in these e-folders are a combination of two sources, electronically received and scanned.
            - N:\Images\Economides
            - N:\Images\Orthodontics\Scanned photos
   d. Note: Multiple pictures taken on the same day are entered in the same record
4. <u>X-Rays</u>: select view of a given x-ray
   a. <u>View</u>:

i.	<u>lat</u>	lateral
ii.	<u>pan</u>	panaview
iii.	<u>part</u>	partial panaview
iv.	<u>AP</u>	Anterior-Poster
v.	<u>hd</u>	hand
vi.	<u>unknown</u>	unknown
vii.	<u>mxo</u>	maxillary dentition
viii.	<u>mdo</u>	mandibular dentition
ix.	<u>rtmj</u>	right TMJ
x.	<u>ltmj</u>	left TMJ
xi.	<u>tmj</u>	TMJ side unknown
xii.	<u>waters</u>	Waters view
xiii.	<u>other</u>	other

b. <u>Xray Date</u>: date x-ray was taken
   i. NOTE: Once the date has been entered into the <u>TreatmentDate</u> field, clicking in this field will cause the database to automatically fill in the date.
   ii. If no date is available, click the <u>No Date</u> box
c. <u>File Location</u>: leave blank during data entry.
   i. Files will be automatically linked
   ii. Exception: images without a date.
      - Manually copy and paste text of e-file names into this field
   iii. Images located in "N:\Images\Orthodontics\all images-ready for web"
      - In this e-folder, images are organized by accession number
      - Images in these e-folders are a combination of two sources, electronically received and scanned.
         - N:\Images\Economides
         - N:\Images\Orthodontics\Scanned photos
d. <u>Cephalometrics</u>:
   i. Match date of cephalometrics as close as possible to date of x-ray
   ii. Enter cephalometrics to link to lateral x-ray when possible
   iii. If there is no associated x-ray for the date of cephalometrics:
      - Save the file "no xray" as "X_2005_19_accession_date_lat_1"
         - File location: "N:\Images\Orthodontics"
         - Do a "SAVE AS" to keep it separate from the original
         - Move patient's e-file (no xray) to patient's e-folder within "N:\Images\Orthodontics\all images-ready for web"
      - In database, select <u>View</u> → <u>Other</u>
         - See **Figure 10.8: Sample Cephalometrics Form**
            - Example form commonly found in patient's folder
         - See **Figure 10.9: Sample Cephalometrics Measurements Screen**
            - Blank data entry screen
         - See **Appendix F: Cephalometrics**

F. <u>Comments</u> – NOTES:
   1. This field is searchable.
   2. Additional information regarding patient treatment events should be entered here.
   3. When possible, include the date associated with any comment.

G. General Notes:
   1. Replace all photos and x-rays into the folder
   2. Papers will either be replaced in the folder or pulled if they contain confidential information
   3. See **Section XI: Removal of Confidential Information**

Figure 10.1: Blank Data Entry Screen

Data entry screen as seen in Microsoft Access. Letters and numbers correspond to instructions found in **Section IX. Data Entry Instructions**.

Figure 10.2: Sample Case Analysis and Treatment Plan

James K. Economides, D.D.S.,M.S.D.
Specialist In Adult & Children's Orthodontics
10820 Comanche N.E. Suite # A
Albuquerque, New Mexico 87111

Patient's Name :
Date:
Patient Case Number:
Patient's age:

| In this example: |
| A.   Classical treatment information |
| B. and C.   need to be noted in the Comments Field. |

Case Analysis and treatment Plan:
1. Options:
    A.   Class I, crowded
    B.   Anterior cross-bite, labial cuspids
    C.   Gingival stripping lrt1, needs graft
2.Pre-orthodontic Guidance Program [ ]
3.Standard Orthodontic Treatment Plan [x]
4.Treatment Plan Steps:

1.NHA extract four first bicuspids	Months x
2.Wait 3 months for right cuspid to drop	Months 112
3.Bond posterior segments and close cuspids	Months 5
4.Bond anteriors and align	Months 6
5.Close and interdigitate with elastics	Months 4
6.Retain upper and lower arches	Months 24
7.Four eights no room	Months
8.	Months
9.	Months
10.	Months

Do not enter the information under "4. Treatment Plan Steps" as this these treatment events have not yet occurred.

Treatment Total:
Financial Contract Work Sheet:

    1.Fee Phase 1   2
    2.Minus down payment
    3.Months of estimated treatment time
    4.Calculated Third party payment
    5.Estimated monthly payment by patient
    6.Records Charges (Transfer)
    7.Total charges before transfer
    8.Total amount paid before transfer
    9.Unpaid amount still owed transfer Dr
  10.Balance of fee not charged at transfer

This form does include treatment information and may include hand written confidential information that needs to be removed. See **Section XI: Removal of Confidential Information**.

Figure 10.3: Sample Medicaid Utilization Review Forms

This form does include treatment information. However, it also does include insurance information (Medicaid). See **Section XI: Removal of Confidential Information**.

Figure 10.4: Sample Orthodontic Insurance Form

This form may include treatment information as well as payment information and other confidential information. See **Section XI: Removal of Confidential Information**.

Figure 10.5: Sample Patient Identification Card

The Patient Card often has diagnostic information on the back. If the diagnosis matches that on the "Case Analysis" or on another form, do not enter the same diagnosis multiple times. However, the diagnosis does not match, enter the diagnosis using the date on the front of the card as the Treatment Date.
If there is insurance information or monies information, copy the card, then black out on the card and place the copy into the confidential file.

Figure 10.6: Sample Transfer Form

This form does include treatment information and can also include payment information and other confidential information. See **Section XI: Removal of Confidential Information**.

Figure 10.7: Sample Treatment Record

```
 AME:                                    Treatment      RECORD NUMBER:
 RESP PARTY:                             Information

 ARCH SIZE:         SKEL PATTERN: I    OCCL RT:     OCCL LF:      UP CWD:
 OVERJET:      OVERBITE:   MIDLINE:                               LW CWD:
 PROFILE:
 TRE OVERVIEW 1: MALOCCLUSION CORRECTABLE BY          UL:               :UR
 TRE OVERVIEW 2: ORTHODONTIC TREATMENT                LL:               :LR


 --------------------------------------------------------------------------
 CONSULTATION DATE:   11/02/            RECORDS DATE:        9/17/
 START TREATMENT DATE:11/23/          START RETENTION DATE:
 1: 4X4 UPPER & LOWER       5: PROG BOND REST          9: NO 8'S
 2: REM ROTS,CLO OPEN BITE  6: INTER W/ELASTICS        10:
 3:  W/UTILITIES            7: LONG TERM RET,PREVENT   11:
 4: LEVEL 3'S               8:   RETURN OF OPEN BITE   12:

 TRE          TECH                                                  TOT
   # DATE     CODE    TODAY'S TREATMENT         NEXT TREATMENT    PTS PT
 --------------------------------------------------------------------------
   1 11/12/96 JE   NPX                       RECORDS              0    0
   2 11/20/96 L    CANC RECORDS,WAIT         RECORDS              0    0
   3  9/17/98 L    RECORDS                   CONSULT              0    0
   4 10/26/98 L    DNKA                      CONSULT              0    0
   5 11/12/98 L    CONSULT,SEP 2X4 U&L       B&B 2X4 UPPER,LOWER  0    0
   6 11/23/98 CG   B&B U&L 2X4,N6U&N6L SECT  RETIE U&L            7    7
   7 12/21/98 CR   N18U N18L                 RETIE U,L            7   14
   8  1/18/99 CR   RETIE U,L                 66U UTILITY RETIE LOWER  7  21
   9  2/08/99 CG   66U UTILITY,RETIE LOWER   66L UTILITY,ACT UPPER  7  28
  10  3/08/99 KLS  66L UTILITY RETIE         BOND ALL 3'S,HOOK'EM  7  35
  11  3/22/99 CR   E REDB UL1,UR1,&2 UL1 INJURED  BOND ALL 3'S,HOOK'EM  0  35
  12  3/29/99 KLS  BOND ALL 3'S,HOOK'EM      ACTIVATE,REDO B MODS  7  42
  13  5/03/99 KLS  ACTIVATE,REDO B MODS      BAND U&L 7'S/BOND REST  7  49
  14  5/27/99 CR   BAND U&L 7'S              DB U&L BI'S, S16 U&L  7  56
  15  6/23/99 L    CANC,OUT OF TOWN          DB U&L BI'S, S16 U&L  0  56
  16  7/01/99 CR   DB U&L BI'S N16U&L        N18U&L TO 7'S, REDB ANY?  7  63
  17  7/29/99 L    DNKA                      N18U&L TO 7'S, REDB ANY?  0  63
  18  8/06/99 SL   N18 U REDB U RIGHT 1      18L TO 7'S           7   70
  19  9/02/99 ST   REBOND ULT2,LLT3 18L      18U                  0   70
  20  9/14/99 MB   E RETIE LL6 W/REG TIE(POKEY)  18U              0   70
  21  9/30/99 L    DNKA                      18U                  0   70
  22 10/25/99 L    DNKA                      18U                  0   70
  23 10/29/99 MB   18U                       18L CLOSE U,L        7   77
  24 10/29/99 MB   18L & CLOSE RETIE UPPER   RETIE & CLOSE        7   84
  25 11/29/99 TB   SHOWED W/NO BRACES, & LEFT  WILL CALL          0   84
  26 11/29/99 L    MOM SAID HE REMOVED ALL   DANIEL REMOVED ALL   0   84
 --------------------------------------------------------------------------
```

1/ contact began 7
LR
13 mo TRX

Confidential

Monies due/ past due

This form does include treatment information and can also include payment information and other confidential information. See **Section XI: Removal of Confidential Information**.

Figure 10.8: Sample Cephalometrics Form

```
Test Results for:               Analysis:                Page: 1
ID:          Name:                                       Date:
Sex:    Race:    Age:         Skl Age:        Class:

  Description                    Norm    Std        Low    Pat    High

01      Denture to skeleton
  Lower central to apo plane    mm   2.20    2.60*                5.71   3.51
  Inter incisal angle           Deg 135.10   8.98*              140.45   5.35
  Impa angle                    Deg  93.30   6.00*       7.49   85.81
  Upper one sella nasion        Deg 104.00   5.50              106.44   2.44
  Lower central to nb line      Deg  25.30   6.00               25.53   0.23
  Molar relationship            mm   6.00    2.00***            12.72   6.72
  Nb line to/lower central      mm   5.00    2.50        0.86    4.14   4.14
  Overbite                      mm   2.50    2.00        0.55    1.95
  Overjet                       mm   2.00    2.00***     6.34   -4.34
  distal upper-6 /ptm occlusal  mm  22.00    6.00        2.45   19.55
  Upper central/lip embrassure  mm   2.00    2.00*       1.01    0.99

02      Skeletal relationships
  Condylion to gnathion         mm 113.40    4.70*              120.15   6.75
  Condylion to gonion           mm  58.00    3.00*       2.29   55.71
  Condylion to ss               mm  95.00    5.00***    12.89   82.11
  Facial taper                  Deg  68.00   3.50**      6.76   61.24
  Facial angle                  Deg  88.00   3.00**      6.60   81.40
  Convexity                     Deg   2.00   2.00*               4.10   2.10
  Sella nason to mand. line     Deg  34.00   5.30**      9.56   24.44
  Palatal plane to mand. plane  Deg  26.00   5.40               28.66   2.66

03      Lip relationships
  Nasio labial angle            Deg 100.00   3.50**      7.58   92.42
  Soft tissue chin thickness    mm  13.00    0.00               16.72   3.72
  upper lip thickness           mm  12.00    3.50**             20.52   8.52
  Subnasale to upper lip        mm  20.00    0.00        7.08   12.92
  Sub nasal sulcus depth        mm   5.00    3.50*               7.70   2.70
  upper-upper lip thickness     mm  12.00    0.00               21.10   9.10

04      Y axis group
  Facial axis                   Deg   0.00   3.50***            10.82  10.82
  Y axis frankfort horizontal   Deg  61.10   3.37**             68.14   7.04
  Y axis to sella nasion        Deg  67.10   4.10***    10.56   56.54

05      Deep internal structures
  Fma angle                     Deg  26.50   4.39***            38.89  12.39
  Sella/nasion/pogonon          Deg  81.40   1.84*****          92.99  11.59
  Sella/nasion/supramentale     Deg  77.00   3.40*****          92.42  15.42
  Sella/nasion/ss               Deg  81.00   3.40*****          88.17   7.17
  Ss-na-sm                      Deg   3.20   1.36*               4.24   1.04

06      Airway widths
  adenoid space                 mm  12.00    2.00*****          30.43  18.43
  Tona-tonp                     mm  12.00    3.50*              16.68   4.68

07      Special measurements
  Mandibular arc                Deg  26.00   4.00*       2.51   23.49
  Lower facial height           Deg  47.00   4.00*       2.03   44.97
  Wits analysis                 mm   0.00    1.77*****   10.56  -10.56
```

```
Test Results for:               Analysis:                Page: 2
ID:          Name:                                       Date:
Sex:    Race:    Age:         Skl Age:        Class:

  Description                    Norm    Std        Low    Pat    High

08      Facial ratio's
  Face low/face all/percent          0.33    5.30               0.49   0.16
  Face 1/l face low/percent          0.66    5.30        0.05   0.61
  Face mid/ face low/percent         0.26    0.00               0.66   0.40
  Face 1/l face all/percent          0.22    4.00               0.30   0.08
  Face mid /face all/percent         0.33    2.50        0.01   0.32
  Face 1/l face mid/percent          0.66    6.70               0.92   0.26
  Face upper/ face all/percent       0.33    3.50        0.14   0.19

09      Facial lengths
  Face all                      mm   0.00    3.50*****         139.40 139.40
  Face lower incisor to chin %  mm   0.00    3.50*****          41.44  41.44
  Face low                      mm  71.00    3.50*       2.72   68.28
  Face mid                      mm  Not Available                45.14
  Face up                       mm   0.00    3.50*****          26.27  26.27
  Glabellla to subnasale        mm   0.00    3.50*****          82.26  82.26
  lower chin tangent-lower lip  mm  22.00    6.00**             32.77  10.77
  Lip embrassure to menton      mm  42.00    6.00        1.71   40.29
  Upper lip to chin tangent     mm   0.00    3.50*****          46.35  46.35
  Anterior facial height        mm 118.00    6.40*       4.60  113.40
  Subnasle to lower lip         mm  27.00    5.30        0.14   26.86
  Subnasale/lip embrassure      mm  22.00    2.00               22.88   0.88
  Subnasale to chin tangent     mm  52.00    2.00***            58.26   6.26
  Spa-pg                        mm   0.00    3.50*****          60.69  60.69
```

Patient's measurements

Enter the measurements in this column. Other columns do not reflect the patient, rather they refer to the descriptive statistics for the measurements.

These two pages are typical of cephalometrics taken by Dr. Economides. However, they are by no means the only source of measurements and are provided solely as an example.

See **Appendix F: Cephalometrics** for matching of names as listed on this form to the abbreviations used in the database.

Figure 10.9: Sample Cephalometrics Measurements Screen

Cephalometric Measurements

For X-Ray: _____

DENTURE TO SKELETON
II APO _PT: _____
INC ANGLE: _____
IMPA: _____
ILS NSL: _____
ILI N SM: _____
MOLAR REL: _____
NB_LINE II: _____
OVERBITE: _____
OVERJET: _____
DU6_PTV: _____
IS-LIP EMB: _____

SKELETAL RELATIONSHIPS
CO-GN: _____
CO-GONION: _____
CO-SS: _____
GO-GN-SS: _____
N-PG FH: _____
N-SS-PG: _____
NSL-ML: _____
NL-ML: _____

LIP RELATIONSHIPS
NS-LCT-LS: _____
PG-PGS: _____
PLS-LS: _____
SN-UL: _____
SN-SNP: _____
SS-PSSS: _____

Y AXIS GROUP
BA-CC-GN: _____
FH S-GN: _____
N-S-GN: _____

DEEP INTERNAL STRUCTURES
FMA: _____
S-N-PG: _____
S-N-SM: _____
S-N-SS: _____
SS-N-SM: _____

AIRWAY WIDTHS
ADENOIDS: _____
TONSIL: _____

SPECIAL MEASUREMENTS
CO-XI-DC: _____
SPA-XI-PM: _____
AO-BO: _____

FACIAL RATIOS
Face Low/Face All/Percent: _____
Face L/L Face Low/Percent: _____
Face Mid/Face Low/Percent: _____
Face L/L Face All/Percent: _____
Face Mid/Face All/Percent: _____
Face L/L Face Mid/Percent: _____
Face Upper/Face All/Percent: _____

FACIAL LENGTHS
Face All: _____
Face Lower Incisor to Chin: _____
Face Low: _____
Face Mid: _____
Face Up: _____
Glabella to Subnasale: _____
Lower Chin Tangent/Lower Lip: _____
Lip Embrassure to Menton: _____
Upper Lip to Chin Tangent: _____
Anterior Facial Height: _____
Subnasale to Lower Lip: _____
Subnasale/Lip Emb: _____
Subnasale to Chin Tangent: _____
SPA-PG: _____

OTHER
Sunbansale/Lower Lip: _____
Posterior Facial Height: _____
ILI ML: _____
LNT-SN-LS: _____
MC90-N: _____
ILS N SS: _____
ILS NL: _____
CO-SPA: _____
FH: _____
ML: _____
OCC-PL: _____
IS-MCIS: _____
PFH: _____
RH: _____
SPA-ME: _____
AR-GO-ME: _____
LNT-LCT: _____
NSL-NL: _____

Data entry screen as seen in database when <u>Cephalometric</u> button is clicked.

XI. **Removal of Confidential Information**
   A. Pulling confidential paperwork
      1. Purpose of pulling confidential paperwork
         a. To comply with HIPAA, and to protect patient confidentiality
         b. Examples of confidential information:
            i. Insurance information
               - Including Medicaid/ Medicare information
            ii. Monies past due
            iii. Patient/ parent(s) social security number
               - It is not necessary to pull forms simply because they contain a patient's social security number.
               - If a form that is already being pulled also contains the SS#, it can be blacked out.
               - This is particularly relevant for the patient identification cards. Do not black out the SS# on the cards.
            iv. Patient/ parent(s) employer information
            Note: Examples (i.) and (ii.) are the most important.
      2. What gets pulled? (includes, but not limited to)
         a. Forms/ pages with insurance information
            i. See **Figure 11.1: Sample Orthodontic Insurance Form**
            ii. See **Figure 11.2: Sample Medicaid Utilization Review Forms**
         b. Forms/ pages with monies due/ past due
            i. See **Figure 11.3: Sample Bill**
            ii. See **Figure 11.4: Sample Transfer Form**
            iii. See **Figure 11.5: Sample Treatment Payment Plan**
            iv. See **Figure 11.6: Sample Treatment Record**
            v. See **Figure 11.7: Sample Treatment Contract Agreement**
         c. Returned letter from Dr. Economides, such as bills
         d. Letters from patient (or guardian) discussing payment, but not treatment
         e. 30 Day Letters
            i. See **Figure 11.8: Sample 30 Day Letter**
         f. Forms/ pages relating to bankruptcy
            i. See **Figure 11.9: Sample Bankruptcy Form**
            ii. See **Figure 11.10: Sample Bankruptcy Letter**
      3. Other possible locations of confidential information
         a. Patient information card
         b. Exterior of the patient's folder
            i. Examples:
               - "Pd"
               - "08080" or "08090" etc
               - Insurance company information

   B. Deidentifying confidential paperwork
      2. Papers with confidential information will placed in the patient's *confidential file*
         a. Archival Quality file folder
         b. Confidential file needs to be labeled with the patient's accession number

     c. Label file folder with a "Sharpie® Permanent Marker Ultra Fine Point"
3. Pages without treatment information
    a. Examples:
       i. See **Figure 11.5: Sample Treatment Payment Plan**
      ii. See **Figure 11.7: Sample Treatment Contract Agreement**
     iii. See **Figure 11.8: Sample 30 Day Letter**
     iv. See **Figure 11.9: Sample Bankruptcy Form**
      v. See **Figure 11.10: Sample Bankruptcy Letter**
    b. To deidentify:
       i. These forms/ letters get pulled
      ii. Place in the patient's confidential file
4. Pages that also contain treatment information
    a. Examples:
       i. See **Figure 11.1: Sample Orthodontic Insurance Form**
      ii. See **Figure 11.2: Sample Medicaid Utilization Review Form**
     iii. See **Figure 11.3: Sample Bill**
     iv. See **Figure 11.4: Sample Transfer Form**
      v. See **Figure 11.6: Sample Treatment Record**
    b. To deidentify:
       i. These forms/ letters get pulled
      ii. Cover confidential information with a post-it® note or piece of paper
         - Cut or tear post-it® or paper as needed to obtain reasonable sized pieces
         - Yellow post-it® work best as they do not show on the photocopy
     iii. Photocopy form/ letters with post-it® or paper in place
         - Make sure not to cover important information such as the patient number
     iv. Photocopy gets placed in the patient's folder
      v. Original gets placed in the patient's confidential folder
5. Other locations (patient identification card and folder)
    a. Photocopy card/ folder
    b. The photocopy goes in the patient's confidential file
    c. The confidential information on the card/ folder gets black out
       i. Use a "Sharpie® Permanent Marker Fine Point" to black out confidential information
      ii. If confidential information can still be read through the blacking out, then scribble over with a pen
     iii. On patient information card – be careful of the marker bleeding though card
    d. Replace card in the patient's folder

Figure 11.1: Sample Orthodontic Insurance Form

Accession number
Make sure the accession number remains visible

Insurance information

2005. 19.

...ODONTIC INSURANCE FORM   CARRIER OR SUBSCRIBER NAME
INSURANCE BILL

Insurance/ employee information

Employee information

PATIENT NAME
SELF RELATIONSHIP SPOUSE CHILD OTHER   SEX M F   PATIENT BIRTHDATE

EMPLOYEE FIRST NAME   MIDDLE   LAST   EMPLOYEE SSN#

EMPLOYEE MAILING ADDRESS

CITY, STATE, ZIP

GROUP NO.   LOCATION   ARE OTHER FAMILY MEMBERS EMPLOYED? YES NO   SSN #
NAME

IS PATIENT COVERED BY ANOTHER PLAN? YES NO   DENTAL PLAN   NAME OF CARRIER   ADDRESS

I AUTHORIZE TREATMENT PLAN & ANY INFORMATION NECESSARY TO PROCESS THIS REQUEST
PATIENT OR PARENT IF MINOR   DATE
I HEREBY AUTHORIZE PAYMENT DIRECTLY TO BELOW NAMED DENTIST, ETC.
EMPLOYEE OR AUTHORIZED PERSON   DATE

DENTIST NAME
IS TREATMENT A RESULT OF OCCUPATIONAL ILLNESS OR INJURY?   NO YES   DESCRIPTION
MAILING ADDRESS
IS TREATMENT THE RESULT OF AN AUTO ACCIDENT? OR OTHER ACCIDENT?
ARE ANY SERVICES COVERED BY ANOTHER PLAN?
DENTIST SS#   LICENSE #   PHONE #   IF PROSTHESES IS THIS INITIAL PLACEMENT?   REASON   DATE
1st VISIT DATE CURRENT SERIES OFF OTHER   RADIOGRAPHS OR MODELS ENCLOSED? NO YES   IS TREATMENT FOR ORTHODONTICS?   DATE APPLIANCES PLACED 1/08/   MO. REMAININ 22

Treatment Information

MONTHLY BILL FROM

Monies Due/ past due

ORTHODONTIC ENDORSEMENT

1. AMOUNT DUE TO START TREATMENT $

POLICY NO:
FULL TREATMENT CASE   X   ONE PHASE X   TWO PHASE   OTHER
LIMITED TREATMENT CASE   I

TYPE OF MALOCCLUSION

2. AMOUNT OF MONTHLY PAYMENTS $ x MONTHS

Monies Due/ past due

MALOCCLUSION CORRECTABLE BY ORTHODONTIC TREATMENT

3. OTHER PAYMENT PLAN

COST OF CASE DIAGNOSIS AND TREATMENT PLAN $

TOTAL ORTHO FEE $

Treatment Information

EXTRACTION OF PERMANENT TEETH   YES   NO   X

COMPLETE DIAGNOSTIC RECORDS MAY BE REQUESTED FOR PEER REVIEW ONLY.

COMMENTS:

STARTING DATE OF TREATMENT
SIGNATURE OF DENTIST FOR APPROVAL,

24   MONTHS OF ESTIMATED TREATMENT

Image includes post-it® over confidential information for an example of placement.

This form may include treatment information as well as confidential information. Cover the confidential information with a post-it® for photocopying.

Figure 11.2: Sample Medicaid Utilization Review Forms
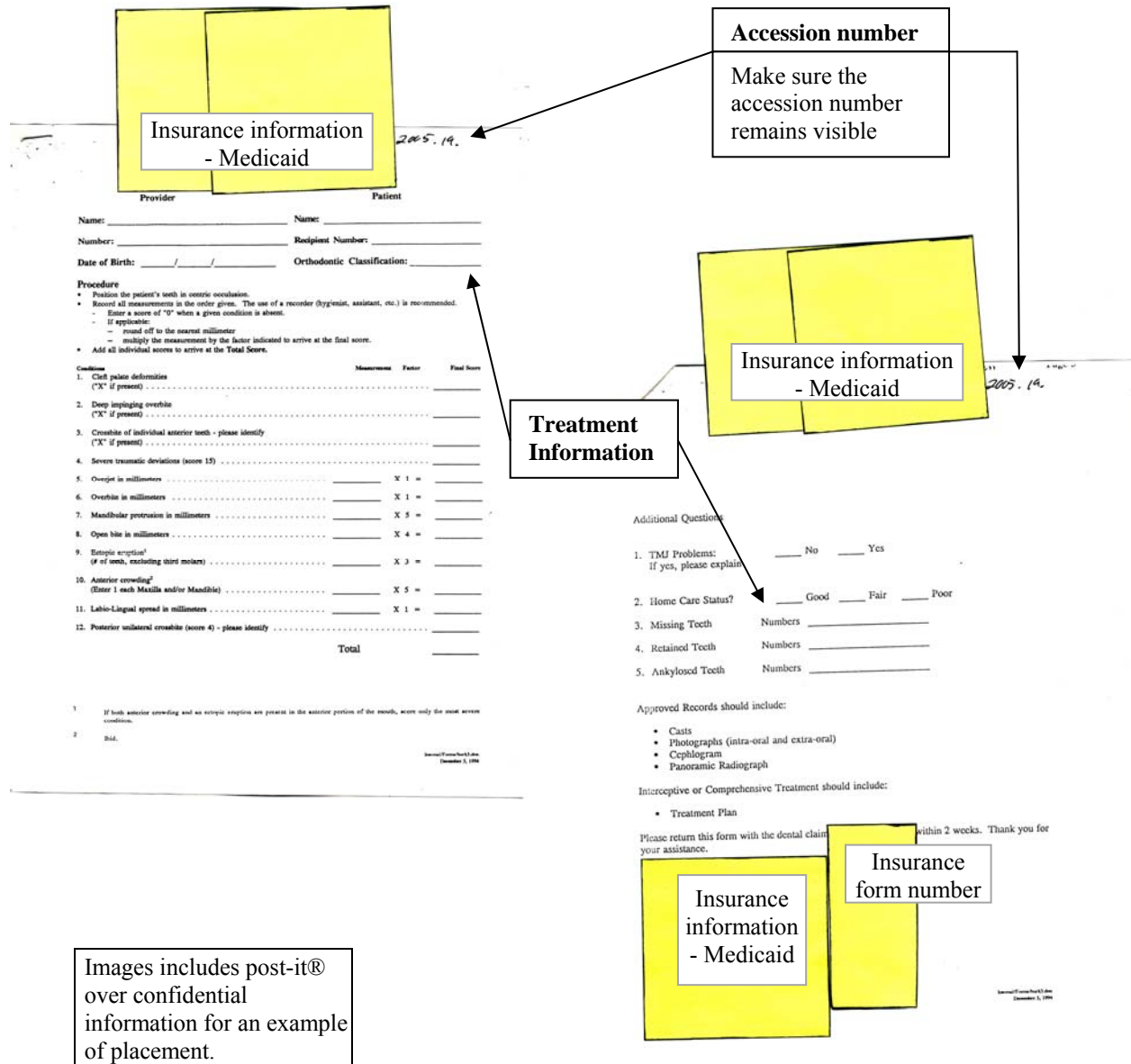
Accession number

Make sure the accession number remains visible

Insurance information - Medicaid

Insurance information - Medicaid

Treatment Information

Insurance information - Medicaid

Insurance form number

Images includes post-it® over confidential information for an example of placement.

This form does include treatment information. However, it also does include insurance information (Medicaid). Cover the confidential information with a post-it® for photocopying.

Figure 11.3: Sample Bill

This form may include treatment information as well as confidential information. Cover the confidential information with a post-it® or piece of paper for photocopying.

Figure 11.4: Sample Transfer Form

This form does include treatment information and can also include payment information. Cover the confidential information with a post-it® for photocopying.

Figure 11.5: Sample Treatment Payment Plan

James Economides D.D.S. M.S.D.
Orthodontic Specialist
10820 Comanche N.E.
Albuquerque, New Mexico 87111

Diplomate
American Association
of Orthodontists
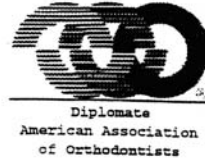
24 mo $158.71/mo

ORTHODONTIC TREATMENT FEE

Treatment Fee	$3528.00
State and Local Taxes	$205.07
Total	$3733.06

STANDARD PAYMENT PLAN

Initial Exam and Consultation	No charge
Diagnostic Records	No charge
Appliance Placement plus tax	$103.16
31 payments @ $104.00 month +tax	$3214.58
remove Upper And Lower Retainers +tax	+$414.52
Total Fee + tax	$3729.52

RETAINER OPTION PAYMENT PLAN

Retainers will Be discounted by 14%
1st set of replacement retainers discounted By 50%

Appliance Placement	$120.62
31 payments @ $116.14 per month +tax	$3600.33
Upper and lower Retainers	Included
Less Discount of 14%	-$54.00
Total Fee + tax	$3666.95

A Savings of $54.00

Monthly payments are due the 1st of each month. There are no finance or interest charges imposed under either one of these agreements.

I understand the terms of these payment options.

X_____   _____
Responsible party   Consultation Secretary

This letter usually does not include any information that is relevant to the patient's treatment. Therefore, this letter can get pulled and placed into the confidential file. It does not need to be photo copied.

Figure 11.6: Sample Treatment Record

```
AME:                                      ┌─────────────┐        RECORD NUMBER:
RESP PARTY:                               │ Treatment   │
                                          │ Information │
                                          └─────────────┘
ARCH SIZE:          SKEL PATTERN: I     OCCL RT:      OCCL LF:       UP CWD:
OVERJET:        OVERBITE:    MIDLINE:                                LW CWD:
PROFILE:
TRE OVERVIEW 1: MALOCCLUSION CORRECTABLE BY          UL:                  :UR
TRE OVERVIEW 2: ORTHODONTIC TREATMENT                LL:                  :LR


------------------------------------------------------------------------------
CONSULTATION DATE:   11/02/              RECORDS DATE:      9/17/
START TREATMENT DATE:11/23/          START RETENTION DATE:
1: 4X4 UPPER & LOWER        5: PROG BOND REST          9: NO 8'S
2: REM ROTS,CLO OPEN BITE   6: INTER W/ELASTICS       10:
3:   W/UTILITIES            7: LONG TERM RET,PREVENT  11:
4: LEVEL 3'S                8:   RETURN OF OPEN BITE  12:


TRE          TECH                                                         TOT
   # DATE    CODE      TODAY'S TREATMENT           NEXT TREATMENT     PTS  PT
------------------------------------------------------------------------------
   1 11/12/96 JE   NPX                         RECORDS                0    0
   2 11/20/96 L    CANC RECORDS,WAIT           RECORDS                0    0
   3  9/17/98 L    RECORDS                     CONSULT                0    0
   4 10/26/98 L    DNKA                        CONSULT                0    0
   5 11/12/98 L    CONSULT,SEP 2X4 U&L         B&B 2X4 UPPER,LOWER    0    0
   6 11/23/98 CG   B&B U&L 2X4,N6U&N6L SECT    RETIE U&L              7    7
   7 12/21/98 CR   N18U N18L                   RETIE U,L              7   14
   8  1/18/99 CR   RETIE U,L                   66U UTILITY RETIE LOWER 7  21
   9  2/08/99 CG   66U UTILITY,RETIE LOWER     66L UTILITY,ACT UPPER  7   28
  10  3/08/99 KLS  66L UTILITY RETIE           BOND ALL 3'S,HOOK'EM   7   35
  11  3/22/99 CR   E REDB UL1,UR1,&2 UL1 INJURED BOND ALL 3'S,HOOK'EM 0   35
  12  3/29/99 KLS  BOND ALL 3'S,HOOK'EM        ACTIVATE,REDO B MODS   7   42
  13  5/03/99 KLS  ACTIVATE,REDO B MODS        BAND U&L 7'S/BOND REST 7   49
  14  5/27/99 CR   BAND U&L 7'S                DB U&L BI'S, S16 U&L   7   56
  15  6/23/99 L    CANC,OUT OF TOWN            DB U&L BI'S, S16 U&L   0   56
  16  7/01/99 CR   DB U&L BI'S N16U&L          N18U&L TO 7'S, REDB ANY? 7 63
  17  7/29/99 L    DNKA                        N18U&L TO 7'S, REDB ANY? 0 63
  18  8/06/99 SL   N18 U REDB U RIGHT 1        18L TO 7'S             7   70
  19  9/02/99 ST   REBOND ULT2,LLT3 18L        18U                    0   70
  20  9/14/99 MB   E RETIE LL6 W/REG TIE(POKEY) 18U                   0   70
  21  9/30/99 L    DNKA                        18U                    0   70
  22 10/25/99 L    DNKA                        18U                    0   70
  23 10/29/99 MB   18U                         18L CLOSE U,L          7   77
  24 10/29/99 MB   18L & CLOSE RETIE UPPER     RETIE & CLOSE          7   84
  25 11/29/99 TB   SHOWED W/NO BRACES, & LEFT  WILL CALL              0   84
  26 11/29/99 L    MOM SAID HE REMOVED ALL     DANIEL REMOVED ALL     0   84
------------------------------------------------------------------------------
```

┌──┐
│ **Confidential**   │
│   │
│ Because this is a large area, and the   │
│ confidential information will vary in   │
│ size, cover this area with either a   │
│ blank piece of paper or a post-it®.   │
└──┘

Treatment information

This form does include treatment information and can also include payment information. Cover the confidential information with a post-it® or piece of paper for photocopying.

Read through the treatment information section for references to 30 day letters, monies paid or due, and other confidential information. Cover or black out all confidential information.

Figure 11.7: Sample Contract Agreement

Orthodontic Treatment Contract Agreement
James K. Economides DDS, MSD, Orthodontic Specialist,
10820 Comanche NE, Albuquerque, New Mexico 87111

This patient has or will have a complete dental
examination and necessary treatment.

X_____   _____
Responsible party   Date

Patient's Name_____   Date_____

This treatment includes:
1. Initial Consultation
2. Pretreatment records, diagnosis and treatment plan.
3. Placement of appliances and adjustments (includes emergency) appointments for a period of __31__ Months.
4. Removal of appliances - completion of treatment.

This treatment does not include.
1. Required six (6) months cleanings and exams.
2. Fillings, extractions and other dental procedures.
3. Retainers.

Our staff makes a sincere effort to schedule convenient appointment for our patients. However, during, the school term, after school appointment will be rotated to equally accommodate each patient. Advance notice of 48 hours is requested to cancel an appointment. There is a minimum charge for missed appointments. $35.00 ✓

Prompt payment is expected. Payments are due monthly regardless of scheduled appointments. Accounts which become delinquent will result in the discontinuation of treatment until the account is made current.$25.00 ✓

Generally active treatment is completed within the prescribed period. If treatment extends beyond the estimated treatment time "due to factors beyond the Doctor's control (e.g. missed appointments, lack of cooperation , excessive breakage of appliances, poor oral hygiene, not following prescribed instructions, etc.) There will be an additional monthly charge of $69.00 until active treatment is completed . Visual evaluations will be available at every visit where the original will be visible to compare the progress of the treatment.

Orthodontic Fees
1. Initial examination $ 3666.95
2. Diagnostic Records $
3. Initial Placement of appliances $ 120.62
4. Phase One Early Treatment $
5. Active Treatment $ 3666.95
6. Removal and Retainers $
7. Less Insurance assignments $
8. Special cases $
9. Taxes $
TOTAL   FEE $ 3666.95

There are no finance or interest charges imposed
Under this agreement a late charge will apply to
All past due accounts.

Method of Payment
A. Active Treatment **
B. Equal Monthly Payments
start bill

$ 116.14 Per month for __31__ Months
B. Retainers _included_
Initial Upper and lower Retainers
Includes two years of visits
and final records, x-rays, and photographs

Returned checks.
There is a $20.00 for all returned checks.
Payments are due by the 1st. of each months.

Should it be necessary to enforce the provisions of this agreement through an attorney or by legal proceedings, the undersigned promise to pay all cost of collections, including a reasonable attorneys fee and all court costs.

I hereby certify that I have read and received a copy of the foregoing disclosure statement on this _____ Day of _____, ___

X_____   _____
Signature of Responsible Party   Signature of Consultation Person

** Entire fee must be paid in full before removing orthodontic appliances.
Discounts may apply. Transfer fees will be charged in accordance with fees for services rendered scale. Please ask our Financial supervisor for a copy of this scale of deferred fees.

This form does not include any information that is relevant to the patient's treatment. Therefore, this form can get pulled and placed into the confidential file. It does not need to be photocopied.

Figure 11.8: Sample 30 Day Letter

James Economides D.D.S. M.S.D.
Orthodontic Specialist
10820 Comanche N.E
Albuquerque, New Mexico 87111

Diplomate
American Association
of **Orthodontists**

RE:

Dear

It is with deep regret that this letter has to be written. In view of the continuing lack of cooperation, this is in your best interest. If the financial contract was broken, emergency appointments were still available to you, until something satisfactory could be arranged. You were notified several times and had many opportunities to correct the problem. In some cases, though, you have cancelled and/or not shown for many scheduled appointments. In these cases, you were also contacted and asked to reschedule.

Based on the above, we will provide thirty (30) days of emergency treatment from the date of this letter, then I shall terminate treatment. You are urged to seek the services of another orthodontist. We will forward your records to the orthodontist of your choice, upon request.

If you decide not to have another orthodontist take over treatment within the 30 day period, I recommend that you contact my office to have the appliances removed, since there may be health problems from wearing appliances without periodic maintenance.

Sincerely,

James K. Economides, D.D.S.,M.S.D.
JKE/KL

This form does not include any information that is relevant to the patient's treatment. Therefore, this form can get pulled and placed into the confidential file. It does not need to be photocopied.

Figure 11.9: Sample Bankruptcy Form

Form B9A - Chapter 7 Individual or Joint Debtor No Asset Case

United States Bankruptcy Court - District of New Mexico
Notice of Chapter 7 Bankruptcy Case, Meeting of Creditors, and Deadlines

You may be a creditor of the debtor. **This notice lists important deadlines.** You may want to consult an attorney to protect your rights. All documents filed in the case may be inspected at the bankruptcy clerk's office at _____. The bankruptcy clerk's office is open 8:30 AM to 4:30 PM Monday through Friday, except federal holidays.

See Reverse Side For Important Explanations

Debtor(s) name(s):

Debtor(s) address:

Case Number: Date Filed:

Attorney for Debtor(s):   **Bankruptcy Trustee:**

Meeting of Creditors: Date: Time:
Location:

Deadlines:

Papers must be *received* **by the bankruptcy clerk's office by the following deadlines:**

Deadline to File a Complaint Objecting to Discharge of the Debtor *or* **to Determine the Dischargeability of Certain Debts:**

Deadline to Object to Exemptions: Thirty (30) days after the *conclusion* of the meeting of creditors.

Creditors May Not Take Certain Actions:

The filing of the bankruptcy case automatically prohibits certain collection and other actions against the debtor and the debtor's property. If you attempt to collect a debt or take other action in violation of the Bankruptcy Code, you may be penalized.

BY THE COURT

U.S. Bankruptcy Judge

FORM B9A:

SEE BACK OF THIS NOTICE FOR IMPORTANT INFORMATION

This form does not include any information that is relevant to the patient's treatment. Therefore, this form can get pulled and placed into the confidential folder. It does not need to be photocopied.

Figure 11.10: Sample Bankruptcy Letter

UNITED STATES BANKRUPTCY COURT
DISTRICT OF NEW MEXICO

CASE NO.:
CHAPTER:

IN RE:
DEBTOR(S):

DEBTOR(S) ADDRESS:

DISCHARGE OF DEBTOR(S)
IN A CHAPTER 7 CASE

It appearing that the debtor is entitled to a discharge, IT IS ORDERED: The debtor is granted a discharge under section 727 of title 11, United States Code, (Bankruptcy Code).

Within four days of the date noted below copies of this document were mailed to the parties shown on the mailing list attached to the original of this document on file with the clerk.

BY THE COURT

U.S. Bankruptcy Judge

Doc.No.

SEE BACK OF THIS ORDER FOR IMPORTANT INFORMATION

Date of entry on docket:

This letter does not include any information that is relevant to the patient's treatment. Therefore, this letter can get pulled and placed into the confidential folder. It does not need to be photocopied.

XII. Five Percent Check
  A. For every 100 patients entered, 5% of them need to be checked
    1. Randomly pull 5 patients from each 100 patients entered
    2. Check all data entered
       a. Name
       b. Date of birth
       c. Sex
       d. Phone number / address
       e. Ancestry estimates – for each estimation
          i. <u>EstimateDate</u>
          ii. Reporter
          iii. Patient's <u>Ancestry Estimation</u>
            - Traits upon which estimation estimate was based
            - Minimum of 2 reporter's ancestry estimation
       f. Other characteristics (thumb sucking, mouth breathing, etc.)
       g. <u>Treatment Events</u>
          i. <u>Tooth extraction</u>
          ii. <u>Banding/ Bracketing</u>
          iii. <u>Surgical Exposure</u>
          iv. <u>De-banding</u>
          v. <u>Orthognathic Surgery</u>
          vi. <u>Retention</u>
          vii. <u>Orthodontic Diagnosis</u>
          viii. <u>Congenitally Missing Teeth</u>
          ix. <u>POG</u>
          x. Inter-oral photos
          xi. X-Rays
       h. Cephalometrics

  B. Record errors found:
    1. In file "5% check"
    2. File location: "N:\"

Appendix A: Directory

Not available.

Appendix B: Image Naming Convention

ImageType_Year_Accession#_Object#_TreatmentDate_ViewCode_Ordinal
     1   2   3   4   5   6   7

Where:

1 – *ImageType* = P (Photo) or X (R-Ray)

2 – *Year* = 2005

3 – *Accession#* = 19

4 – *Object#* = 1 through x, the unique number assigned to this patient

5 – *TreatmentDate* = YYYYMMDD the image was taken
> For images where the entire date is not legible, type "X" where numbers are unknown.
> For example: if the month cannot be read but the year and day can be read, the
> > *TreatmentDate* is "YYYYXXDD"

6 – *ViewCode* describes the view in the image
> P (Photo) – can also be used for x-rays if needed

antb	Anterior bite [closed teeth]
llb	Left lateral bite [closed teeth]
mxo	Maxillary occlusal
mdo	Mandibular occlusal
rlb	Right lateral bite [teeth closed]

> X (X-Ray)

AP	Anterior-posterior
hd	Hand (has also been saved as "hr," "hl," and "hand")
lat	Lateral
pan	Panaview
TMJ	TMJ view (can also be saved as "LTMJ" or "RTMJ," left or right side)
waters	Waters View
unknown	View unknown, or of a type not listed above. Also is used for the "no xray" image for cephalometrics without x-rays

7 – *Ordinal* = 1, 2, etc. with default of 1 (to account for multiple images of the same view on the same date - these should be physically marked for future matching)

Examples:
> Photo of anterior view of teeth in occlusion taken on February 3, 1999 of patient 2005.19.70
> > P_2005_19_70_19990203_antb_1
>
> Panaview x-ray of the same patient taken January 16, 2002
> > X_2005_19_70_20020116_pan_1

Appendix C: Tooth Naming Convention

Deciduous Dentition

Side	Right						Left				
Tooth Type	m	m	c	i	i	|	i	i	c	m	m
Tooth Letter	e	d	c	b	a	|	a	b	c	d	e
Database	**A**	**B**	**C**	**D**	**E**	|	**F**	**G**	**H**	**I**	**J**
Database	**T**	**S**	**R**	**Q**	**P**	|	**O**	**N**	**M**	**L**	**K**
Tooth Letter	e	d	c	b	a	|	a	b	c	d	e
Tooth Type	m	m	c	i	i	|	i	i	c	m	m

Permanent Dentition

Side	Right								Left							
Tooth Type	M	M	M	P	P	C	I	I	|	I	I	C	P	P	M	M	M
Tooth #	8	7	6	5	4	3	2	1	|	1	2	3	4	5	6	7	8
Database	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	|	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Database	**32**	**31**	**30**	**29**	**28**	**27**	**26**	**25**	|	**24**	**23**	**22**	**21**	**20**	**19**	**18**	**17**
Tooth#	8	7	6	5	4	3	2	1	|	1	2	3	4	5	6	7	8
Tooth Type	M	M	M	P	P	C	I	I	|	I	I	C	P	P	M	M	M

Deciduous Dentition

A   Deciduous Right Maxillary Second Molar
B   Deciduous Right Maxillary First Molar
C   Deciduous Right Maxillary Canine
D   Deciduous Right Maxillary Lateral Incisor
E   Deciduous Right Maxillary Central Incisor
F   Deciduous Left Maxillary Central Incisor
G   Deciduous Left Maxillary Lateral Incisor
H   Deciduous Left Maxillary Canine
I   Deciduous Left Maxillary First Molar
J   Deciduous Left Maxillary Second Molar
K   Deciduous Left Mandibular Second Molar
L   Deciduous Left Mandibular First Molar
M   Deciduous Left Mandibular Canine
N   Deciduous Left Mandibular Lateral Incisor
O   Deciduous Left Mandibular Central Incisor
P   Deciduous Right Mandibular Central Incisor
Q   Deciduous Right Mandibular Lateral Incisor
R   Deciduous Right Mandibular Canine
S   Deciduous Right Mandibular First Molar
T   Deciduous Right Mandibular Second Molar

Permanent Dentition

#1   Permanent Right Maxillary Third Molar
#2   Permanent Right Maxillary Second Molar
#3   Permanent Right Maxillary First Molar
#4   Permanent Right Maxillary Second Premolar
#5   Permanent Right Maxillary First Premolar
#6   Permanent Right Maxillary Canine
#7   Permanent Right Maxillary Lateral Incisor
#8   Permanent Right Maxillary Central Incisor
#9   Permanent Left Maxillary Central Incisor
#10   Permanent Left Maxillary Lateral Incisor
#11   Permanent Left Maxillary Canine
#12   Permanent Left Maxillary First Premolar
#13   Permanent Left Maxillary Second Premolar
#14   Permanent Left Maxillary First Molar
#15   Permanent Left Maxillary Second Molar
#16   Permanent Left Maxillary Third Molar
#17   Permanent Left Mandibular Third Molar
#18   Permanent Left Mandibular Second Molar
#19   Permanent Left Mandibular First Molar
#20   Permanent Left Mandibular Second Premolar
#21   Permanent Left Mandibular First Premolar
#22   Permanent Left Mandibular Canine
#23   Permanent Left Mandibular Lateral Incisor
#24   Permanent Left Mandibular Central Incisor
#25   Permanent Right Mandibular Central Incisor
#26   Permanent Right Mandibular Lateral Incisor
#27   Permanent Right Mandibular Canine
#28   Permanent Right Mandibular First Premolar
#29   Permanent Right Mandibular Second Premolar
#30   Permanent Right Mandibular First Molar
#31   Permanent Right Mandibular Second Molar
#32   Permanent Right Mandibular Third Molar

Appendix D: Cephalometrics

Local Index Number:

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description
Denture to Skeleton			
Apo to Lower Incisor	APO _PT II	length	Distance from the incisal edge of the mandibular central incisor perpendicular to the A-Pogonion line
Inter Incisal Angle	INC/ANGLE	degrees	The intercisal angle, which is the anterior angle formed at the intersection of the long axes of the maxillary and mandibular central incisors.
IMPA Angle to Lower Inc to Go GN	IMPA	degrees	The posterior-superior angle between the long axis of the mandibular central incisor and the mandibular plane (Gonion to Gnathion)
Upper One to S-N	ILS/NSL	degrees	The posterior-inferior angle formed by the long axis of the maxillary central incisor and the Sella-Nasion line
Lower Incisor to Nasion-B Point	ILI/N-SM	degrees	The inferior angle formed by the long axis of the mandibular central incisor and the Nasion-B point line
Molar Relationship	MOLAR REL	length	The distance from between the distal crown convexities of the upper and lower permanent first molars, measured along the occlusal plane

Local Index Number:

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description
Denture to Skeleton - Continued			
Measured Line NB to II	NB_LINE II	length	The distance from the incisal edge of the mandibular central incisor to the Nasion-B point line
Overbite	OVERBITE	length	The distance between the incisal edges of the upper and lower central incisors measured perpendicular to the occlusal plane
Overjet	OVERJET	length	The distance between the incisal edges of the upper and lower central incisors measured along the occlusal plane
Distal U6 to PTV at Occlusal Plane	DU6_PTV	length	The distance from the distal crown contact of the maxillary first molar measured back to Pterygoid-Vertical (line from Pterygoid, perpendicular to the Frankfort horizontal)
Upper One to Lip Embrassure	IS-LIP EMB	length	The vertical distance from the tip of the maxillary central incisor to Lip Embrassure (the contact point between upper and lower lips) , measured perpendicular to the palatal plane
Skeletal Relationships			
Condylion to GN	CO-GN	length	The straight line distance between Condylion and Gnathion
Condylion to Gonion	CO-GO	length	The distance between Condylion and Gonion

Local Index Number:

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description
Skeletal Relationships – Continued			
Max. Length	CO-SS	length	The distance between Condylion and A point
Facial Taper	GO-GN-SS	degrees	The superior-posterior angle formed by the Nasion-Pogonion line and the mandibular line (Gonion to Menton)
Facial Angle	N-PG/FH	degrees	The posterior-inferior angle at the intersection of the Nasion-Pogonion line and the Frankfort Horizontal plane
Angle of Convexity	N-SS-PG	degrees	The superior angle between the line Nasion-Subspinale (A point) and the line A point-Pogonion
Sella Nasion to Mandibular Line	NSL-ML	degrees	The anterior angle formed by the Sella-Nasion line and the Mandibular line (Gonion-Menton)
Angles Describing Inclination	NL-ML	degrees	The angle formed by the Nasion-Subspinale (A point) line and the mandibular line (Gonion-Gnathion)
Lip Relationships			
Holdaway Angle	NS-LCT-LS	degrees	The inferior-posterior angle between the H line (The most anterior superior point of the soft tissue chin and Labrale superius) and the Frankfort Horizontal Plane

Local Index Number:

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description

Lip Relationships – Continued

Soft Tissue Chin Thickness	PG-PGS	length	The distance from hard tissue Pogonion to soft tissue Pogonion, measured parallel with Frankfort Horizontal plane.
Lip, Upper Thickness (MM)	PLS-LS	length	The distance from Labrale Superius back to the maxillary central incisor measured parallel with Frankfort Horizontal Plane.
sub nasal to upper lip	SN-UL	length	Upper lip length from subnasale to Upper Lip Stomion
Sub Nasal Sulcus	SN-SNP	length	Distance from the H-Line(line extending from Soft Tissue Pogonion to Labrale Superius) to the Superior Labial Sulcus
Lip Thickness Upper/Upper	SS-PSSS	length	Distance from hard tissue A point to soft tissue A point

Y Axis Group

Facial Axis	BA-CC-GN	degrees	The inferior angle between the Basion-Nasion line and CC (Pterygoid-Gnathion line)
Y Axis to Frankfort Horizontal	FH/S-GN	degrees	The anterior-inferior angle between the Frankfort Horizontal line and the Sella-Gnathion line
Y Axis to Se-Na	N-S-GN	degrees	The anterior-inferior angle formed by the intersection of the Sella-Nasion line and the Sella-Gnathion line

Local Index Number:

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description

Deep Internal Structures

FMA Angle	FMA	degrees	The anterior-inferior angle formed by the Frankfort Horizontal line and the Mandibular line (Gonion-Menton)
Angles Describing SNPG (Sella/Nasion/Pogonion)/ Mandibular relationship	S-N-PG	degrees	The inferior-posterior angle formed by the Sella-Nasion line and the Nasion-Pogonion line
Angles Describing SNB (Sella/Nasion/Supramentale)	S-N-SM	degrees	The inferior-interior angle defined by Sella, Nasion and Supramentale (B point)
Angles Describing SNA (Sella/Nasion/SS)	S-N-SS	degrees	The posterior-inferior angle formed by Sella, Nasion, and Subspinale (A point)
Angles Describing Antero-Post/ANB	SS-N-SM	degrees	Angle defined by Subspinale (A point), Nasion, and Supramentale (B point)

Airway Widths

Adenoid Space	ADENOIDS	length	Distance from one adenoid to the other
Tonsilar Width	TONSIL	length	Distance of the tonsil from anterior to posterior

Local Index Number:

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description
Special Measurements			
Mandibular Arc	CO-XI-DC	degrees	The anterior-superior angle formed by Condylion to Xi (geographic center of the ramus) to DC (the midpoint of the outline of the condylar process where it is crossed by the inferior border of the cranial base)
Lower Facial Hgt. Angle	SPA-XI-PM	degrees	The anterior angle formed by Spinale Anterior (ANS) to Xi (geographic center of the ramus) to Suprapogonion (Pm- point along curvature of symphysis which changes form convexity to concavity)
Wits Analysis	AO-BO	length	Distance between A point and B point, each projected to the Functional Occlusal Plane (line passing through posterior cusp of the maxillary first molar and a line along the occlusion of the maxillary and mandibular premolars and a line perpendicular to it through the averaged anterior contact of the first maxillary premolars with the maxillary canine(cuspid)
Facial Ratios			
Face Low/Face All/Percent	Face Low/Face All/Percent	percentage	The ratio of the distance from Subnasale to soft tissue Menton to the distance from the hairline to soft tissue Menton multiplied by 100

Local Index Number:

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description

Facial Ratios – Continued

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description
Face L/L Face Low/Percent	Face L/L Face Low/Percent	percentage	The ratio of the distance from the embrassure of the lower central incisor to the Chin Tangent to the distance from Subnasale to soft tissue Menton multiplied by 100
Face Mid/Face Low/Percent	Face Mid/Face Low/Percent	percentage	The ratio of the distance from soft tissue Glabella to Subnasale to the distance from Subnasale to soft tissue Menton multiplied by 100
Face L/L Face All/Percent	Face L/L Face All/Percent	percentage	The ratio of the distance from the embrassure of the lower central incisor to the Chin Tangent to the distance from the hairline to soft tissue Menton multiplied by 100
Face Mid/Face All/Percent	Face Mid/Face All/Percent	percentage	The ratio of the distance from soft tissue Glabella to Subnasale to the distance from the hairline to soft tissue Menton multiplied by 100
Face L/L Face Mid/Percent	Face L/L Face Mid/Percent	percentage	The ratio of the distance from the embrassure of the lower central incisor to the Chin Tangent to the distance from soft tissue Glabella to Subnasale multiplied by 100
Face Upper/Face All/Percent	Face Upper/Face All/Percent	percentage	The ratio of the distance from the hairline to soft tissue Glabella to the distance from the hairline to soft tissue Menton multiplied by 100

Local Index Number:

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description
Facial lengths			
Face All	Face All	length	The distance from the hairline to Menton (soft tissue)
Face Lower Incisor to Chin	Face Lower Incisor to Chin	length	The distance from the embrassure of the lower central incisor to the Chin Tangent
Face Low	Face Low	length	The distance from soft tissue Subnasale to soft tissue Menton
Face Mid	Face Mid	length	The distance from soft tissue Glabella to Subnasale
Face Up	Face Up	length	The distance from the hairline to soft tissue Glabella
Glabella to Subnasale	GA-SN	length	Distance from Soft tissue Glabella to Subnasale (Parallel to Frankfort Horizontal Plane)
Lower Chin Tangent/Lower Lip	LI-LCT	length	Distance from Labrale Inferius to Lower chin tangent (The most anterior superior point of the soft tissue chin) (Parallel to the Frankfort Horizontal Plane)
Lip Embrassure to Menton	LIP_EMB-ME	length	Distance from the Stomion inferius to the Soft Tissue Pogonion (Parallel to the Frankfort Horizontal Plane)

Local Index Number:

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description

Facial lengths – Continued

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description
Upper Lip to Chin Tangent	LS_LCT	length	Distance from Labrale superius to Lower chin tangent (The most anterior superior point of the soft tissue chin) (Parallel to the Frankfort Horizontal Plane)
Anterior Facial Height	AFH	length	Distance between Nasion and Menton
Subnasale to Lower Lip	SN-LI	length	Distance from the Labius inferius to Subnasale projected onto the Frankfort Horizontal Plane
Subnasale/Lip Embrassure	SN-LIP E	length	Distance from the Labius superius to Subnasale projected onto the Frankfort Horizontal Plane
SPA-PG	SPA-PG	length	Distance from the Spinus Anterior to pogonion

Other

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description
Subnasale/Lower Lip	SN-LI	length	Distance from the Labius inferius to Subnasale projected onto the Frankfort Horizontal Plane
Posterior Facial Height	PFHGT	length	Distance from the CF point (where the Frankfort Horizontal line crosses the Pterygoid vertical line) to Gonion
Incisor mandibular plane angle	ILI/ML	degrees	The posterior- superior angle between the long axis of the mandibular central incisor and the mandibular plane

Local Index Number:

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description
Other – Continued			
Naso-Labial Angle	LNT-SN-LS	angle	The anterior angle between the base of the nose and the Subnasale to Labrale superius line
McNamara 90/Nasion	MC90-N	length	The distance from the McNamara 90 point to Nasion
Upper Incisor/Nasion-A Point	ILS/N-SS	degrees	The superior angle formed by the long axis of the maxillary central incisor and the Nasion-Subspinale (A point) line
Upper One to Nasal Line	ILS/NL	degrees	The superior angle formed between the long axis of the maxillary central incisor and the Nasal line (Anterior Nasal Spine to Posterior Nasal Spine)
CO-SPA	CO-SPA	length	The straight line distance between Condylion and Spinale Anterior (A point)
Frankfort Horizontal	FH (Po-Or)	length	The linear distance between Porion and Orbitale
Mandibular Line	ML	length	The distance between Gonion and Gnathion
Occlusal Plane	OCC-PL	length	The distance between the midpoint of the line connecting the lower and upper incisal edge and the midpoint of the line connecting the anterior cusp tip of the maxillary and mandibular first molar

Local Index Number:

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description

Other – Continued

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description
Line McNamara to IS	IS-MCIS	length	The distance of the incisal edge of the maxillary central incisor relative to the A line (Line through A point and perpendicular to the Frankfort horizontal plane)
Posterior Face Height	PFH	length	Distance from Sella to Gonion
Ramus Height	RH	length	Distance from Articulare to Gonion
Spa to Vert Line	SPA-ME	length	Distance from menton projected perpendicular to the palatal plane (Anterior to Posterior nasal spine)
Gonial Angle	AR-GO-ME	degrees	The angle formed by Articulare, Gonion and Menton
Nose Chin Line/ Nose Chin length	LNT-LCT	length	Lower Nasal Tangent(to the Lower Chin Tangent (The most anterior superior point of the soft tissue chin)
S-N to Palatal Plane	NSL-NL	degrees	The angle between the Sella-Nasion line and the Palatal plane (ANS-PNS)

Extras- Not on Cephalometric sheet in database

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description
Subnasale to Chin Tangent	SN-PGS	length	The distance from Subnasale to the Chin Tangent (the most anterior superior point of the soft tissue chin)

Local Index Number:

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description

Extras- Not on Cephalometric sheet in database – Continued

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description
Palatal plane - Mandibular plane	PP-ML	degrees	The posterior angle formed by the palatal plane (Anterior nasal spine and Posterior nasal spine) and the mandibular plane (Gonion to Menton)
Lower Lip/menton	LI-ME	length	Distance from Labrale Inferius to Soft tissue Menton
Line SS to McNamara 90	SS-MCSS	length	The distance between A point and McNamara 90
Subnasale/Menton	SN-ME	length	The distance from Subnasale to Soft tissue Menton
Posterior Cranial Base Length	PCL	length	Distance from Sella to Articulare
Cranial Length Anterior	CC/N	length	The distance from the CC point (the point where the basion-nasion plane and the facial axis intersect) to Nasion
Lower Incisal Axis	II-AI	length	The distance on the Lower central incisor from the incision inferius to the apex
Upper Incisal Axis	IS-AS	length	The distance on the Upper central incisor from the Incision superius to the apex superior
Mandibular Body Length	MBL	length	The distance between Gonion and Menton

Local Index Number:

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description

Extras- Not on Cephalometric sheet in database – Continued

Text Description of Measurement:	Economides Abbreviations	Type of Measurement	Description
Nasal Line	NL	length	The distance between the Anterior and Posterior Nasal Spine
Nasion Sella Line	NSL	length	The distance between Sella and Nasion
Palatal Plane Angle	NSL-PP	degrees	The angle between the Sella-Nasion line and the Palatal plane (ANS-PNS)

Glossary:

accession number	Identifying number assigned to each patient as they are accessioned into the Maxwell collection. Contains three parts. The first two (2005.19.) are shared by all patients included within the Economides' collection, while the third is unique to each patient.
cast	Dental casts belonging to a specific patient
confidential file	Archival quality file folder labeled with the patient's accession number. These files are stored in a separate box than the box with the patient folders.
e-folder	Electronic folder located on the N: drive that contains all images for a given patient. (N:\Images\Orthodontics) These e-folders are organized within e-folders of 50 patients which are within e-folders of 500 patients
folder	The physical patient folder donated by Dr. Economides
HIPPAA	Health Insurance Portability and Accountability Act Law to pretect patient confidentiality
Hospital Security	Office located on the first floor of UNMH Phone number: 272-2160
HSC ID badge	ID badge issued by the HSC This badge is required for entry into the Radiology Department
HSC username and password	Username for the Health Science Center network Password – your password for this username

Learning Central	Website for Health Science Center online training https://learningcentral.health.unm.edu/plateau/user/login.jsp
object number	Unique number for each patient. Last of the three parts of the accession number
Osteology Lab	Maxwell Museum Laboratory of Human Osteology Anthropology building, room #165 Phone number: 277-3535
PACS username and password	Username and Password will be provided upon request Used only for logging onto the computers in the Radiology Department at the UNM Hospital
patient identifier	Any information that identifies the patient as an individual. Includes name, date of birth, and patient number
patient number	Identifying number assigned to each patient by Dr. Economides. In general this number begins with the last one or two digits of the year when the patient joined his practice
Radiology Department	Located on the first floor of UNMH Phone number: 272-2269
reporter	Employee on the Orthodontic Project who enters data. Specifically to identify which employee made the ancestry estimation for a patient
UNM Net ID and password	UNM Net ID - **username@unm.edu** Password – your password for your UNM accounts